RED CLAY CONSOLIDATED SCHOOL DISTRICT

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT

801 W 18th St., Wilmington, DE 19802

PROJECT MANUAL

BSA+A PROJECT No.26.002

Red Clay Consolidated School District Project No. 2-27-13

ISSUED TO MYMARKETPLACE
October 21, 2026

NOT FOR BIDDING

BSA+A 954 Justison Street / Wilmington, Delaware 19801 / 302.658.9300 p / 302.658.1125 f / www.simpers.com

PROJECT MANUAL

RED CLAY CONSOLIDATED SCHOOL DISTRICT

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT

BSA+A Project No. 26.002

RCCSD Project No. 2-27-13

OWNER
Red Clay Consolidated School District
1502 Spruce Ave
Wilmington, DE 19805
P. (302) 552.3700

ARCHITECT
BSA+A, INC
954 Justison St.
Wilmington, DE 19801
P. (302) 658.9300
F. (302) 658.1125

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ISSUED TO MYMARKETPLACE
October 21, 2026

RED CLAY CONSOLIDATED SCHOOL DISTRICT
CONTRACT #2-27-13

SPECIFICATIONS
FOR

WARNER ELEMENTARY SCHOOL ROOF
REPLACEMENT

IN

801 W 18TH ST.
WILMINGTON, DE 19802

PREPARED
BY

BUCK SIMPERS ARCHITECT + ASSOCIATES

ISSUED TO MYMARKETPLACE
OCTOBER 21, 2026

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SECTION 00 01 07 - SEALS PAGE

DESIGN PROFESSIONAL OF RECORD

Architect
BSA+A, Inc
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00 01 10 - TABLE OF CONTENTS

DIVISION 00 – PROCUREMENT AND CONTRACT REQUIREMENTS

00 00 00 Cover Sheet
00 01 01 Project Title Sheet
00 01 07 Seals Page
00 01 10 Table of Contents
00 01 15 Contract Drawings
00 11 16 Invitation to Bid
00 21 13 Instructions to Bidders
00 41 13 Bid Forms
00 43 13 Bid Bond
00 52 13 Standard Form of Agreement Between Owner and Contractor (AIA A101 – 2017)
00 52 16 AIA A101-2017 Draft
00 54 13 Supplement to Agreement Between Owner and Contractor (AIA A101 – 2017)
00 54 14 Supplement to A101-2017 – Exhibit A – Insurance and Bonds
00 61 13.13 Performance Bond Form
00 61 13.16 Payment Bond Form
00 72 13 General Conditions (AIA A201 – 2017)
00 72 16 AIA A201-2017 Draft
00 73 13 Supplementary General Conditions (AIA A201 – 2017)
00 73 43 Prevailing Wage Rates
00 73 44 BSA+A Electronic Release Form
00 81 13 General Requirements
00 81 14 Drug Testing Forms
00 81 15 Affidavit of Craft Training

DIVISION 01 – GENERAL REQUIREMENTS

01 00 00 General Requirements
01 10 00 Summary
01 11 00 Summary of Work OFCI Products
01 13 00 Summary of Work Construction Phasing - Add 3
01 21 00 Allowances
01 21 16 Allowance Authorization Form
01 22 00 Unit Prices
01 25 00 Substitution Procedures
01 25 01 Substitution Request Form
01 26 00 Contract Modification
01 29 00 Payment Procedure
01 29 01 Application for Payment (AIA G702 – 1992)
01 29 02 Continuation Sheet (AIA G703 – 1992)
01 31 00 Project Management & Coordination
01 32 00 Construction Progress Documentation
01 32 33 Photographic Documentation
01 33 00 Submittal Procedure
01 35 13 Contractor Employee Background Checks and School Security Requirements
01 35 23 Safety Program
01 40 00 Quality Requirements
01 42 00 References
01 50 00 Temporary Facilities and Controls
01 52 00 Construction Facilities & Temporary Controls

01 60 00 Product Requirements
01 62 00 Material and Equipment
01 64 00 Summary of Work OFCI Products
01 73 00 Execution
01 73 29 Cutting and Patching
01 74 19 Construction Waste Management and Disposal
01 77 00 Closeout Procedures
01 78 39 Project Record Documentation
01 79 00 Demonstration and Training

DIVISION 2 – EXISTING CONDITIONS

02 41 13 Selective Demolition

Divisions 03: Not Used

DIVISION 04 – MASONRY

04 01 20.63 Brick Masonry Repair
04 01 20.64 Brick Masonry Repointing

DIVISION 05 – METALS

05 51 33 Metal Ladders

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

06 10 26 Roofing Rough Carpentry

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

07 01 50.19 Preparation for Re-Roofing
07 01 50.61 Elastomeric Silicone Roof Coating
07 14 00 Fluid-Applied Membrane Waterproofing
07 22 16.10 Nailbase Insulation Panels
07 31 13 Asphalt Shingles
07 53 23 Ethylene-Propylene-Diene-Monomer (EPDM) Roofing
07 62 00 Sheet Metal Flashing and Trim
07 71 00 Roof Specialties
07 71 29 Manufactured Roof Expansion Joints
07 72 00 Roof Accessories
07 92 00 Joint Sealants

Divisions 08 through 25: Not Used

DIVISION 26 – ELECTRICAL

26 41 13 Lightning Protection System

END OF SECTION

00 01 15 – CONTRACT DRAWINGS

G190	COVER SHEET - ROOF
A191	ROOF PLAN
A192-A	ROOF PARTIAL PLAN – AREA A
A192-B	ROOF PARTIAL PLAN – AREA B
A192-C	ROOF PARTIAL PLAN – AREA C
A193	SECTIONS & PHOTOGRAPHS
A194	EXTERIOR DETAILS – ROOF
A195	EXTERIOR DETAILS – ROOF
A196	DETAILS, ROOF - CORE SAMPLES
M603	ROOFTOP REFERENCE SCHEDULE

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SECTION 00 11 16 – INVITATION TO BID

INVITATION TO BID

Sealed bids for **RCCSD Contract No. 2-27-13**, will be received at the **Office of Marcin Michalski, Director of Facilities, at Red Clay Consolidated School District**, at **1798 Limestone Road, Wilmington, DE 19804** until **2:00 PM** local time on **Wednesday, December 9, 2026,** at which time they will be pub-licly 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 complete tear-off of existing roofing down to the structural deck. Installation of new tapered and flat insulation with a protection board. A fully adhered EPDM single-ply membrane roof and asphalt roof shingle systems are proposed. Associated work includes new sheet metal flashings, roof curbs, metal roof copings, retrofit roof drains, roof scuppers, manufactured roof expansion joints, and pipe penetrations. Provide new roof access ladder along with the refurbishing of existing access ladders.

A **MANDATORY** Pre-Bid Meeting will be held on **Thursday, November 12, 2026**, at **Stanton Middle School** at **1800 Limestone Road, Wilmington, DE 19804** at **10:00 AM** for the purpose of establishing the listing of subcontractors and to answer questions. Representatives of each party to any Joint Venture are required to attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Sealed bids shall be addressed to **Marcin Michalski, Director of Facilities at Red Clay Consolidated School District, 1798 Limestone Road, Wilmington, DE 19804.**

The outer envelope should clearly indicate: **"RCCSD CONTRACT NO. 2-27-13 - SEALED BID - DO NOT OPEN."**

Contract documents will be made available for printing on the day of the Pre-Bid Meeting, **Thursday, November 12, 2026**. Bidders shall withhold any questions until the Pre-Bid meeting. Contract documents will be available at the office of **RCI Printing & Graphics at 298 Churchmans Rd, New Castle, DE 19720** upon receipt of **$60.00** per set (Non-refundable). Checks are to be made payable to "**RCI Printing and Graphics**".

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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NOT FOR BIDDING

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SECTION 00 21 13 INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

1. GENERAL

2. BIDDER'S REPRESENTATION

3. BIDDING DOCUMENTS

4. BIDDING PROCEDURES

5. CONSIDERATION OF BIDS

6. POST-BID INFORMATION

7. PERFORMANCE BOND AND PAYMENT BOND

8. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

NOT FOR BIDDING

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.

NOT FOR BIDDING

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.

1.23 CUSTOM FABRICATION: As defined in 29 Del. C. § 6902, the term “custom fabrication” means the offsite fabrication, assembly, or other production of non-standard goods or materials, including components, fixtures or parts thereof, specifically for a public works project. Such goods and materials shall include those used in the following trades or systems: (1) Plumbing or pipe fitting systems, including heating, ventilating, air-conditioning, refrigeration systems, sheet metal or other duct systems; (2) Electrical systems; (3) Mechanical insulation work; (4) Ornamental iron work; and (5) Commercial signage that does not attempt or appear to direct the movement of traffic on highways or roadways or interfere with, imitate, or resemble any official traffic sign, signal or device.

ARTICLE 2: BIDDER'S REPRESENTATION

2.1 PRE-BID MEETING

NOT FOR BIDDING

2.1.1A 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 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.

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

NOT FOR BIDDING

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,

NOT FOR BIDDING

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.

9. 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 2 calendar 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

NOT FOR BIDDING

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 a signed Affidavit for the Bidder certifying compliance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects." "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

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 In accordance with Title 29, Chapter 69, Section 6962(d)(10)b of the Delaware Code, 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. The bidder must list **in each category** the full name and address (City & State) of the sub-contractor that the Bidder will be using to perform the work and provide material for that subcontractor category. Should the Bidder's listed subcontractor intend to provide any of their subcontractor category of work through a third-tier contractor, the Bidder shall list that third-tier contractor's full name and address (City & State). **If the Bidder intends to perform any category of work itself, it must list its full name and address.** For clarification, if the Bidder intends to perform the work themselves, the Bidder **may not** insert "not applicable", "N/A", "self" or anything other than its own full name and address (City & State). To do so shall cause the bid to be rejected. In addition, the failure to produce a completed subcontractor list with the bid submittal shall cause the bid to be rejected. If you have more than three (3) third-tier contractors to report in any subcontractor category,

NOT FOR BIDDING

print out additional page(s) containing the appropriate category, complete the rest of your list of third-tier contractors for that category, notate the addition in parentheses as (CONTINUATION) next to the subcontractor category and an asterisk (*) next to any additional third-tier contractors, and submit it with your bid.

1. 4.3.2 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 AFFIDAVIT OF CONTRACTOR QUALIFICATIONS

4.4.1 In accordance with Title 29, Chapter 69, Section 6962(d)(10)b.3 of the Delaware Code, each Bidder shall submit with their Bid the Affidavit of Contractor Qualifications certifying that the Bidder will abide by the contractor's qualifications outlined in the construction bid specifications for the duration of the contract term. After a contract has been awarded the successful bidder shall not substitute another subcontractor whose name was submitted on the Subcontractor Form except for the reasons in the statute and not without written consent from the awarding agency. Failure to utilize the subcontractors on the list will subject the successful bidder to penalties as outlined in the General Requirements Section 5.2 of the contract.

4.5 AFFIDAVIT OF CRAFT TRAINING COMPLIANCE

4.5.1 In accordance with Title 29, Chapter 69, Section 6962(c)(13) of the Delaware Code, contractors and subcontractors must provide craft training for journeyman and apprentice levels if **all** of the following apply:

A. A project meets the prevailing wage requirement under Title 29, Chapter 69, Section 6960 of the Delaware Code.
B. The contractor employs 10 or more total employees.
C. The project is not a federal highway project

Failure to provide required craft training on the project may subject the successful contractor and/or subcontractor(s) to penalties as outlined in Title 29, Chapter 69, Section 6962(c)(13) of the Delaware Code.

Bidders shall submit the Affidavit of Craft Training Compliance prior to contract execution.

4.6 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

4.6.1 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, sex, color, sexual orientation, gender identity 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, 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

NOT FOR BIDDING

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, sex, color, sexual orientation, gender identity or national origin."

4.7 PREVAILING WAGE REQUIREMENT

4.7.1 Wage Provisions: For renovation and new construction projects whose costs exceed the thresholds contained in Delaware Code, Title 29, Section 6960, 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.

4.7.2 The employer shall pay all mechanics and labors employed directly upon the site of work, or engaged in custom fabrication work, as that term is defined in Article 1.23 herein and as also as defined in 29 Del. C § 6902 and described in 29 Del. C. § 6960(b), regardless of where the work is performed, 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.

4.7.3 As per 29 Del. C. § 6960(b), the scale of the wages to be paid must be posted by the employer in a prominent and easily accessible place at the site of the work. There may be withheld from the employer so much of accrued payments as may be considered necessary by the Department of Labor to pay laborers and mechanics employed by the employer the difference between the rates of wages required by the contract to be paid laborers and mechanics on the work and rates of wages received by such laborers and mechanics to be remitted to the Department of Labor for distribution upon resolution of any claims.

2. 4.7.4 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.

4.8 SUBMISSION OF BIDS

4.8.1 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.

4.8.2 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.

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

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

NOT FOR BIDDING

4.8.5 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.

4.9 MODIFICATION OR WITHDRAW OF BIDS

4.9.1 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.

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

4.9.3 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.

NOT FOR BIDDING

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

NOT FOR BIDDING

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

3. 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. Any public school district and its board shall award public works contracts in accordance with this section's requirements except it shall award the contract within 60 days of the bid opening."

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. The successful Bidder shall provide, at least two business days prior to contract execution, copies of the Employee Drug Testing Program for the Bidder and all listed Subcontractors. 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 two (2) years after the date of the Certificate of Final Payment.

4. 5.4.6 If the successful Bidder fails to execute the required Contract, Bond and all required information, 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 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

NOT FOR BIDDING

6.1 CONTRACTOR'S QUALIFICATION STATEMENT

6.1.1 Bidders to whom an 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 Bidders to whom an award of a Contract has been made must produce their Delaware Business License before the Contract can be executed.

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 OWNER 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 SECTION

NOT FOR BIDDING

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NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCSD Project No. 2-27-13

BID FORM

For Bids Due: Friday, December 9, 2026 **To:** Marcin Machalski, Director of Facilities
Red Clay Consolidated School District
1798 Limestone Road, Wilmington, DE 19804

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____

(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:

$_____
($)

ALLOWANCES

An Allowance of **$50,000** is scheduled to be included in the base bid. Refer to specification 00 21 00 ALLOWANCES.

NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCSD Project No. 2-27-13

BID FORM

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to specification 01 22 00 Unit Prices for a complete description of the following Unit Prices:

	ADD	DEDUCT
UNIT PRICE No. 1: Replacement of unsuitable wood substrate/sheathing.	$ _____	$ _____
UNIT PRICE No. 2: Replacement of unsuitable perimeter wood blocking.	$ _____	$ _____

NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington DE, 19802
Red Clay Consolidated School District (RCCSD)
RCSD Project No. 2-27-13

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 (60 days for School Districts and Department of Education), 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.

I am / We are an Individual / a Partnership / a Corporation

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

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ **By:** _____
(Authorized Signature)

(SEAL)

_____
(Title)

Date: _____

NOT FOR BIDDING

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Affidavit of Employee Drug Testing Program
Affidavit of Contractor Qualifications
Bid Security
(Others as Required by Project Manuals)

NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCCSD Project No. 2-27-13

BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b of the Delaware Code, the following subcontractor listing must accompany any bid submittal. The bidder must list **in each category** the full name and address (City & State) of the sub-contractor that the bidder will be using to perform the work and provide material for that subcontractor category. Should the bidder's listed subcontractor intend to provide any of their subcontractor category of work through a third-tier contractor, the bidder shall list that third-tier contractor's full name and address (City & State). **If the bidder intends to perform any category of work itself, it must list its full name and address.** For clarification, if the bidder intends to perform the work themselves, the bidder **may not** insert "not applicable", "N/A", "self" or anything other than its own full name and address (City & State). To do so shall cause the bid to be rejected. In addition, the failure to produce a completed subcontractor list with the bid submittal shall cause the bid to be rejected. If you have more than three (3) third-tier contractors to report in any subcontractor category, print out additional page(s) containing the appropriate category, complete the rest of your list of third-tier contractors for that category, notate the addition in parentheses as (CONTINUATION) next to the subcontractor category and an asterisk (*) next to any additional third-tier contractors, and submit it with your bid.

Subcontractor Category	**Subcontractor tax-payer ID #**	**Address (City & State)**	**Subcontractors or Delaware Business license #**
1.	Demolition		
A.			
B.			
C.			
2.	Roofing		
A.			
B.			
C.			

NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCSD Project No. 2-27-13

BID FORM (Continued)

3.				
	A.			
	B.			
	C.			
4.				
	A.			
	B.			
	C.			
5.				
	A.			
	B.			
	C.			

NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCCSD Project No. 2-27-13

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 **Red Clay Consolidated School District**.

All the terms and conditions of **Project Number 2-27-13** 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 _____.

NOT FOR BIDDING

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

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCCSD Project No. 2-27-13

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors, that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

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

My Commission expires _____. NOTARY PUBLIC _____.

NOT FOR BIDDING

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

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCCSD)
RCCSD Project No. 2-27-13

AFFIDAVIT OF CONTRACTOR QUALIFICATIONS

We hereby certify that we will abide by the contractor's qualifications outlined in the construction bid specifications for the duration of the contract term.

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b.3 of the Delaware Code, after a contract has been awarded the successful bidder shall not substitute another subcontractor whose name was submitted on the Subcontractor Form except for the reasons in the statute and not without written consent from the awarding agency. Failure to utilize the subcontractors on the list will subject the successful bidder to penalties as outlined in the General Requirements Section 5.2 of the contract.

Contractor Name: _____

Contractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

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

My Commission expires _____. NOTARY PUBLIC _____.

NOT FOR BIDDING

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

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NOT FOR BIDDING

RED CLAY CONSOLIDATED SCHOOL DISTRICT

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, 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. **2-27-13**, to be paid to the **State** for the use and benefit of **Red Clay Consolidated School District** 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 **Red Clay Consolidated School District** 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 **Red Clay Consolidated School District** 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

NOT FOR BIDDING

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NOT FOR BIDDING

SECTION 00 52 13 - STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

A101-2017

The contract to be utilized on this project shall be the "Standard Form of Agreement Between Owner and Contractor" AIA Document A101-2017, including AIA Document A101 – 2017 Exhibit A, as well as Supplements to A101-2017 and Exhibit A and the State of Delaware's General Requirements.

NOT FOR BIDDING

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DRAFT

AIA® Document A101™ – 2017

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, legal status, address and other information)

« »« »
« »
« »
« »

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

« »« »
« »
« »
« »

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

« »
« »
« »

The Architect:
(Name, legal status, 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.

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

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, 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.

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User Notes: (2037068339)

TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

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:
(Check one of the following boxes.)

[« »] The date of this Agreement.

[« »] A date set forth in a notice to proceed issued by the Owner.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

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User Notes: (2037068339)

[« »] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

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 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

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

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« »

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

NOT FOR BIDDING

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User Notes: (2037068339)

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 amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified 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 of values 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 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work;

.2 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; and

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« »

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§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 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 Article 12 of AIA Document A201–2017, 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:

« »

§ 5.3 Interest

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.)

« » % « »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the 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.)

« »
« »
« »
« »

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§ 6.2 Binding Dispute Resolution
For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, 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.

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 A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

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

« »
« »
« »
« »
« »
« »

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

« »
« »
« »
« »
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§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

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§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

« »

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

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

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

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[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

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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AIA® Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

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

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

THE OWNER:
(Name, legal status and address)

THE CONTRACTOR:
(Name, legal status and address)

TABLE OF ARTICLES

A.1 GENERAL

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's

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property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:
(Indicate below the cause of loss and any applicable sub-limit.)

Cause of Loss	Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures
If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.
The Owner shall purchase and maintain the insurance selected and described below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

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☐ **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance,** to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

☐ **§ A.2.4.2 Ordinance or Law Insurance,** for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

☐ **§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

☐ **§ A.2.4.4 Extra Expense Insurance,** to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

☐ **§ A.2.4.5 Civil Authority Insurance,** for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

☐ **§ A.2.4.6 Ingress/Egress Insurance,** for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

☐ **§ A.2.4.7 Soft Costs Insurance,** to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.
The Owner shall purchase and maintain the insurance selected below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

☐ **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information. *(Indicate applicable limits of coverage or other conditions in the fill point below.)*

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☐ **§ A.2.5.2 Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than _____ ($__) each occurrence, _____ ($__) general aggregate, and _____ ($__) aggregate for products-completed operations hazard, providing coverage for claims including

- **.1** damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- **.2** personal injury and advertising injury;
- **.3** damages because of physical damage to, or destruction of, tangible property, including the loss of use of such property;
- **.4** bodily injury or property damage arising out of completed operations; and
- **.5** the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

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§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.

.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.

.3 Claims for bodily injury other than to employees of the insured.

.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured

.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.

.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.

.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.

.8 Claims related to roofing, if the Work involves roofing.

.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.

.10 Claims related to earth subsidence or movement, where the work involves such hazards.

.11 Claims related to explosion, collapse, and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than _____ ($__) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than _____ ($__) each accident, _____ ($__) each employee, and _____ ($__) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than_____ ($__) per claim and_____ ($__) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than_____ ($__) per claim and_____ ($__) in the aggregate.

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§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

☐ **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below.

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

☐ **§ A.3.3.2.2 Railroad Protective Liability Insurance,** with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate, for Work within fifty (50) feet of railroad property.

☐ **§ A.3.3.2.3 Asbestos Abatement Liability Insurance,** with policy limits of not less than _____ ($__) per claim and _____ ($__) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

☐ **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

☐ **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

☐ **§ A.3.3.2.6 Other Insurance**

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	**Limits**

SAMPLE

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§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	
Performance Bond	

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

Sample

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SECTION 00 54 13 - SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2017

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2017. 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 3: DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 Delete paragraph 3.1 in its entirety and replace with the following:

"The date of Commencement of the Work shall be a date set forth in a notice to proceed issued by the Owner."

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."

5.3 Insert the interest rate of "1% per month not to exceed 12% per annum."

ARTICLE 6: DISPUTE RESOLUTION

6.2 BINDING DISPUTE RESOLUTION

Check the box "Other" – and add the following sentence:

"Any remedies available in law or in equity."

ARTICLE 7: TERMINATION or SUSPENSION

7.1.1.1 Delete paragraph 7.1.1.1 in its entirety.

ARTICLE 8: MISCELLANEOUS PROVISIONS

8.4 Delete paragraph 8.4 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 SECTION

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SECTION 00 54 14 - SUPPLEMENT TO A101-2017 – EXHIBIT A - INSURANCE & BONDS

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2017 Exhibit A Insurance and Bonds. 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 A.2 OWNER'S INSURANCE

A.2.1 General

Delete paragraph A.2.1 in its entirety.

A.2.2 Liability Insurance

Delete paragraph A.2.2 in its entirety, except in the case of school projects this paragraph shall remain.

A.2.3 Required Property Insurance

Delete paragraph A.2.3 in its entirety.

A.2.4 Optional Extended Property Insurance

Delete paragraph A.2.4 in its entirety.

A.2.5 Other Optional Insurance

Delete paragraph A.2.5 in its entirety.

ARTICLE A.3 CONTRACTORS INSURANCE AND BONDS

A.3.1.1 Strike the last sentence of the paragraph.

A.3.1.3 Additional Insured Obligations

In the first sentence after "coverage to include (1)" delete "(1) the Owner,".

Strike the remainder of the first sentence beginning at the semicolon "; and (2) the Owner" through the end of the sentence.

Delete the second sentence in its entirety.

A.3.2.2.1 Insert "$1,000,000.00" in the blank for each occurrence.
Insert "$3,000,000.00" in the blank for general aggregate.
Insert "$3,000,000.00" in the blank for aggregate for products-completed operations hazard.

A.3.2.3 Insert "$1,000,000.00" in the blank for per accident.

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A.3.2.6 Insert "$500,000.00" in the blank for each accident.
Insert "$500,000.00" in the blank for each employee.
Insert "$500,000.00" in the blank for policy limit.

A.3.2.8 Insert "$1,000,000.00" in the blank for per claim.
Insert "$3,000,000.00" in the blank for in the aggregate.

A.3.2.9 Insert "$1,000,000.00" in the blank for per claim.
Insert "$3,000,000.00" in the blank for in the aggregate.

A.3.2.10 Insert "$2,000,000.00" in the blank for per claim.
Insert "$4,000,000.00" in the blank for in the aggregate.

A.3.2.11 Strike in its entirety.

A.3.2.12 Strike in its entirety.

A.3.3.2.1 Delete paragraph 3.3.2.1 in its entirety

A.3.3.2.2 Strike in its entirety.

A.3.3.2.3 Insert "$1,000,000.00" in the blanks for per claim.
Insert "$3,000,000.00" in the blanks for in the aggregate.

A.3.4 Insert the actual contract price in both the Payment Bond and the Performance Bond Penal Sum blanks. It must be 100% of the contract price.

Strike the last sentence in this section and replace with "Payment and Performance Bonds shall be in the standard form issued by the Delaware Office of Management and Budget."

END OF SECTION

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SECTION 00 61 13.13 - 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 **Red Clay Consolidated School District**, 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. 2-27-13** 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.

NOT FOR BIDDING

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)

NOT FOR BIDDING

SECTION 00 61 13.16 - 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 **Red Clay Consolidated School District**, 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. 2-27-13** 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.

NOT FOR BIDDING

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)

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SECTION 00 72 13 - GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

A201 - 2017

The General Conditions of this Contract are as stated in the American Institute of Architects Document AIA A201 (2017 Edition) entitled General Conditions of the Contract for Construction as revised by the Supplementary General Conditions and is part of this project manual as if herein written in full.

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AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

« »
« »

THE OWNER:
(Name, legal status and address)

« »« »
« »

THE ARCHITECT:
(Name, legal status and address)

« »« »
« »

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 OWNER

3 CONTRACTOR

4 ARCHITECT

5 SUBCONTRACTORS

6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

7 CHANGES IN THE WORK

8 TIME

9 PAYMENTS AND COMPLETION

10 PROTECTION OF PERSONS AND PROPERTY

11 INSURANCE AND BONDS

12 UNCOVERING AND CORRECTION OF WORK

13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

INDEX
(Topics and numbers in bold are Section headings.)

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.

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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User Notes: (1816685690)

Acceptance of Nonconforming Work
9.6.6, 9.9.3, **12.3**
Acceptance of Work
9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3
Access to Work
3.16, 6.2.1, 12.1
Accident Prevention
10
Acts and Omissions
3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.3.2, 14.1, 15.1.2, 15.2
Addenda
1.1.1
Additional Costs, Claims for
3.7.4, 3.7.5, 10.3.2, 15.1.5
Additional Inspections and Testing
9.4.2, 9.8.3, 12.2.1, **13.4**
Additional Time, Claims for
3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**
Administration of the Contract
3.1.3, **4.2**, 9.4, 9.5
Advertisement or Invitation to Bid
1.1.1
Aesthetic Effect
4.2.13
Allowances
3.8
Applications for Payment
4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10
Approvals
2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10.1, 4.2.7, 9.3.2, 13.4.1
Arbitration
8.3.1, 15.3.2, **15.4**
ARCHITECT
4
Architect, Definition of
4.1.1
Architect, Extent of Authority
2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1
Architect, Limitations of Authority and Responsibility
2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2
Architect's Additional Services and Expenses
2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4
Architect's Administration of the Contract
3.1.3, 3.7.4, 15.2, 9.4.1, 9.5
Architect's Approvals
2.5, 3.1.3, 3.5, 3.10.2, 4.2.7
Architect's Authority to Reject Work
3.5, 4.2.6, 12.1.2, 12.2.1
Architect's Copyright
1.1.7, 1.5
Architect's Decisions
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.4.2, 15.2
Architect's Inspections
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4
Architect's Instructions
3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2
Architect's Interpretations
4.2.11, 4.2.12
Architect's Project Representative
4.2.10
Architect's Relationship with Contractor
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2
Architect's Relationship with Subcontractors
1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3
Architect's Representations
9.4.2, 9.5.1, 9.10.1
Architect's Site Visits
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Asbestos
10.3.1
Attorneys' Fees
3.18.1, 9.6.8, 9.10.2, 10.3.3
Award of Separate Contracts
6.1.1, 6.1.2
Award of Subcontracts and Other Contracts for Portions of the Work
5.2
Basic Definitions
1.1
Bidding Requirements
1.1.1
Binding Dispute Resolution
8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1
Bonds, Lien
7.3.4.4, 9.6.8, 9.10.2, 9.10.3
Bonds, Performance, and Payment
7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**
Building Information Models Use and Reliance
1.8
Building Permit
3.7.1
Capitalization
1.3
Certificate of Substantial Completion
9.8.3, 9.8.4, 9.8.5
Certificates for Payment
4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4
Certificates of Inspection, Testing or Approval
13.4.4
Certificates of Insurance
9.10.2

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User Notes: (1816685690)

Change Orders
1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2
Change Orders, Definition of
7.2.1
CHANGES IN THE WORK
2.2.2, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5
Claims, Definition of
15.1.1
Claims, Notice of
1.6.2, 15.1.3
CLAIMS AND DISPUTES
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4
Claims and Timely Assertion of Claims
15.4.1
Claims for Additional Cost
3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, **15.1.5**
Claims for Additional Time
3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, **15.1.6**
Concealed or Unknown Conditions, Claims for
3.7.4
Claims for Damages
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7
Claims Subject to Arbitration
15.4.1
Cleaning Up
3.15, 6.3
Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, **15.1.5**
Commencement of the Work, Definition of
8.1.2
Communications
3.9.1, **4.2.4**
Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2
COMPLETION, PAYMENTS AND
9
Completion, Substantial
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2
Compliance with Laws
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3
Concealed or Unknown Conditions
3.7.4, 4.2.8, 8.3.1, 10.3
Conditions of the Contract
1.1.1, 6.1.1, 6.1.4
Consent, Written
3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2
Consolidation or Joinder
15.4.4
CONSTRUCTION BY OWNER OR BY
SEPARATE CONTRACTORS
1.1.4, **6**
Construction Change Directive, Definition of
7.3.1
Construction Change Directives
1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**, 9.3.1.1
Construction Schedules, Contractor's
3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
Contingent Assignment of Subcontracts
5.4, 14.2.2.2
Continuing Contract Performance
15.1.4
Contract, Definition of
1.1.2
CONTRACT, TERMINATION OR
SUSPENSION OF THE
5.4.1.1, 5.4.2, 11.5, **14**
Contract Administration
3.1.3, 4, 9.4, 9.5
Contract Award and Execution, Conditions Relating to
3.7.1, 3.10, 5.2, 6.1
Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3
Contract Documents, Definition of
1.1.1
Contract Sum
2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, **9.1**, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, **15.1.5, 15.2.5**
Contract Sum, Definition of
9.1
Contract Time
1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5
Contract Time, Definition of
8.1.1
CONTRACTOR
3
Contractor, Definition of
3.1, 6.1.2
Contractor's Construction and Submittal
Schedules
3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2
Contractor's Employees
2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.3, 14.1, 14.2.1.1
Contractor's Liability Insurance
11.1
Contractor's Relationship with Separate Contractors and Owner's Forces
3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

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Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4
Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1
Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2
Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8
Contractor's Review of Contract Documents
3.2
Contractor's Right to Stop the Work
2.2.2, 9.7
Contractor's Right to Terminate the Contract
14.1
Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3
Contractor's Superintendent
3.9, 10.2.6
Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4
Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1
Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11
Copyrights
1.5, **3.17**
Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1
Correlation and Intent of the Contract Documents
1.2
Cost, Definition of
7.3.4
Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14
Cutting and Patching
3.14, 6.2.5
Damage to Construction of Owner or Separate Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4
Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4
Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7
Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2
Date of Commencement of the Work, Definition of
8.1.2
Date of Substantial Completion, Definition of
8.1.3
Day, Definition of
8.1.4
Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2
Decisions to Withhold Certification
9.4.1, **9.5**, 9.7, 14.1.1.3
Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1
Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1
Delays and Extensions of Time
3.2, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**, 10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5
Digital Data Use and Transmission
1.7
Disputes
6.3, 7.3.9, 15.1, 15.2
Documents and Samples at the Site
3.11
Drawings, Definition of
1.1.5
Drawings and Specifications, Use and Ownership of
3.11
Effective Date of Insurance
8.2.2
Emergencies
10.4, 14.1.1.2, **15.1.5**
Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1
Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4
Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.6, **15.2.5**
Failure of Payment
9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
Faulty Work
(See Defective or Nonconforming Work)
Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3
Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4

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User Notes: (1816685690)

GENERAL PROVISIONS
1
Governing Law
13.1
Guarantees (See Warranty)
Hazardous Materials and Substances
10.2.4, **10.3**
Identification of Subcontractors and Suppliers
5.2.1
Indemnification
3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3
Information and Services Required of the Owner
2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5, 9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4
Initial Decision
15.2
Initial Decision Maker, Definition of
1.1.8
Initial Decision Maker, Decisions
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Initial Decision Maker, Extent of Authority
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Injury or Damage to Person or Property
10.2.8, 10.4
Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 12.2.1, 13.4
Instructions to Bidders
1.1.1
Instructions to the Contractor
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2
Instruments of Service, Definition of
1.1.7
Insurance
6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, **11**
Insurance, Notice of Cancellation or Expiration
11.1.4, 11.2.3
Insurance, Contractor's Liability
11.1
Insurance, Effective Date of
8.2.2, 14.4.2
Insurance, Owner's Liability
11.2
Insurance, Property
10.2.5, 11.2, 11.4, 11.5
Insurance, Stored Materials
9.3.2
INSURANCE AND BONDS
11
Insurance Companies, Consent to Partial Occupancy
9.9.1
Insured loss, Adjustment and Settlement of
11.5
Intent of the Contract Documents
1.2.1, 4.2.7, 4.2.12, 4.2.13
Interest
13.5
Interpretation
1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1
Interpretations, Written
4.2.11, 4.2.12
Judgment on Final Award
15.4.2
Labor and Materials, Equipment
1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Labor Disputes
8.3.1
Laws and Regulations
1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8, 15.4
Liens
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8
Limitations, Statutes of
12.2.5, 15.1.2, 15.4.1.1
Limitations of Liability
3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6, 4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3, 11.3, 12.2.5, 13.3.1
Limitations of Time
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7, 5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15, 15.1.2, 15.1.3, 15.1.5
Materials, Hazardous
10.2.4, **10.3**
Materials, Labor, Equipment and
1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2
Means, Methods, Techniques, Sequences and Procedures of Construction
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2
Mechanic's Lien
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8
Mediation
8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1, 15.4.1.1
Minor Changes in the Work
1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, **7.4**
MISCELLANEOUS PROVISIONS
13
Modifications, Definition of
1.1.1
Modifications to the Contract
1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2
Mutual Responsibility
6.2
Nonconforming Work, Acceptance of
9.6.6, 9.9.3, **12.3**

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User Notes: (1816685690)

Nonconforming Work, Rejection and Correction of
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2
Notice
1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1
Notice of Cancellation or Expiration of Insurance
11.1.4, 11.2.3
Notice of Claims
1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, **15.1.3**, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1
Notice of Testing and Inspections
13.4.1, 13.4.2
Observations, Contractor's
3.2, 3.7.4
Occupancy
2.3.1, 9.6.6, 9.8
Orders, Written
1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1
OWNER
2
Owner, Definition of
2.1.1
Owner, Evidence of Financial Arrangements
2.2, 13.2.2, 14.1.1.4
Owner, Information and Services Required of the
2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4
Owner's Authority
1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7
Owner's Insurance
11.2
Owner's Relationship with Subcontractors
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2
Owner's Right to Carry Out the Work
2.5, 14.2.2
Owner's Right to Clean Up
6.3
Owner's Right to Perform Construction and to Award Separate Contracts
6.1
Owner's Right to Stop the Work
2.4
Owner's Right to Suspend the Work
14.3
Owner's Right to Terminate the Contract
14.2, 14.4
Ownership and Use of Drawings, Specifications and Other Instruments of Service
1.1.1, 1.1.6, 1.1.7, **1.5**, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3
Partial Occupancy or Use
9.6.6, **9.9**
Patching, Cutting and
3.14, 6.2.5
Patents
3.17
Payment, Applications for
4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3
Payment, Certificates for
4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4
Payment, Failure of
9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
Payment, Final
4.2.1, 4.2.9, **9.10**, 12.3, 14.2.4, 14.4.3
Payment Bond, Performance Bond and
7.3.4.4, 9.6.7, 9.10.3, **11.1.2**
Payments, Progress
9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4
PAYMENTS AND COMPLETION
9
Payments to Subcontractors
5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2
PCB
10.3.1
Performance Bond and Payment Bond
7.3.4.4, 9.6.7, 9.10.3, **11.1.2**
Permits, Fees, Notices and Compliance with Laws
2.3.1, **3.7**, 3.13, 7.3.4.4, 10.2.2
PERSONS AND PROPERTY, PROTECTION OF
10
Polychlorinated Biphenyl
10.3.1
Product Data, Definition of
3.12.2
Product Data and Samples, Shop Drawings
3.11, **3.12**, 4.2.7
Progress and Completion
4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.4
Progress Payments
9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4
Project, Definition of
1.1.4
Project Representatives
4.2.10
Property Insurance
10.2.5, **11.2**
Proposal Requirements
1.1.1
PROTECTION OF PERSONS AND PROPERTY
10

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User Notes: (1816685690)

Regulations and Laws
1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4
Rejection of Work
4.2.6, 12.2.1
Releases and Waivers of Liens
9.3.1, 9.10.2
Representations
3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
Representatives
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
Responsibility for Those Performing the Work
3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
Retainage
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field Conditions by Contractor
3.2, 3.12.7, 6.1.3
Review of Contractor's Submittals by Owner and Architect
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
Review of Shop Drawings, Product Data and Samples by Contractor
3.12
Rights and Remedies
1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2, 12.2.4, **13.3**, 14, 15.4
Royalties, Patents and Copyrights
3.17
Rules and Notices for Arbitration
15.4.1
Safety of Persons and Property
10.2, 10.4
Safety Precautions and Programs
3.3.1, 4.2.2, 4.2.7, 5.3, **10.1**, 10.2, 10.4
Samples, Definition of
3.12.3
Samples, Shop Drawings, Product Data and
3.11, **3.12**, 4.2.7
Samples at the Site, Documents and
3.11
Schedule of Values
9.2, 9.3.1
Schedules, Construction
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
Separate Contracts and Contractors
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Separate Contractors, Definition of
6.1.1
Shop Drawings, Definition of
3.12.1
Shop Drawings, Product Data and Samples
3.11, **3.12**, 4.2.7
Site, Use of
3.13, 6.1.1, 6.2.1
Site Inspections
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
Site Visits, Architect's
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Special Inspections and Testing
4.2.6, 12.2.1, 13.4
Specifications, Definition of
1.1.6
Specifications
1.1.1, **1.1.6**, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
Statute of Limitations
15.1.2, 15.4.1.1
Stopping the Work
2.2.2, 2.4, 9.7, 10.3, 14.1
Stored Materials
6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
5.1.1
SUBCONTRACTORS
5
Subcontractors, Work by
1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7
Subcontractual Relations
5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3
Submittal Schedule
3.10.2, 3.12.5, 4.2.7
Subrogation, Waivers of
6.1.1, **11.3**
Substances, Hazardous
10.3
Substantial Completion
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2, 15.1.2
Substantial Completion, Definition of
9.8.1
Substitution of Subcontractors
5.2.3, 5.2.4
Substitution of Architect
2.3.3
Substitutions of Materials
3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
5.1.2
Subsurface Conditions
3.7.4
Successors and Assigns
13.2
Superintendent
3.9, 10.2.6
Supervision and Construction Procedures
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6, 9.10.5, 14.2.1

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User Notes: (1816685690)

Surety
5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2, 15.2.7
Surety, Consent of
9.8.5, 9.10.2, 9.10.3
Surveys
1.1.7, 2.3.4
Suspension by the Owner for Convenience
14.3
Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.4.4
Termination by the Contractor
14.1, 15.1.7
Termination by the Owner for Cause
5.4.1.1, **14.2,** 15.1.7
Termination by the Owner for Convenience
14.4
Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT
14
Tests and Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 12.2.1, **13.4**
TIME
8
Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5
Time Limits
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2, 15.1.3, 15.4
Time Limits on Claims
3.7.4, 10.2.8, 15.1.2, 15.1.3
Title to Work
9.3.2, 9.3.3
UNCOVERING AND CORRECTION OF WORK
12
Uncovering of Work
12.1
Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3
Unit Prices
7.3.3.2, 9.1.2
Use of Documents
1.1.1, 1.5, 2.3.6, 3.12.6, 5.3
Use of Site
3.13, 6.1.1, 6.2.1
Values, Schedule of
9.2, 9.3.1
Waiver of Claims by the Architect
13.3.2
Waiver of Claims by the Contractor
9.10.5, 13.3.2, **15.1.7**
Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, **15.1.7**
Waiver of Consequential Damages
14.2.4, 15.1.7
Waiver of Liens
9.3, 9.10.2, 9.10.4
Waivers of Subrogation
6.1.1, **11.3**
Warranty
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2, 15.1.2
Weather Delays
8.3, 15.1.6.2
Work, Definition of
1.1.3
Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3, 13.2, 13.3.2, 15.4.4.2
Written Interpretations
4.2.11, 4.2.12
Written Orders
1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 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 only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

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

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk

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and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

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§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

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

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These

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obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 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. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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

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§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

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§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

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§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

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

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or

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certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for

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whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

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§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 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. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

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ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

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ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- **.4** As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- **.1** Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- **.2** Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- **.3** Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- **.4** Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- **.5** Costs of supervision and field office personnel directly attributable to the change.

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§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials

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and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a Separate Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

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§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

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§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

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§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings

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against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property

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(other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to

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provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner

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shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for

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correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

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§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties 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.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
.2 Accept assignment of subcontracts pursuant to Section 5.4; and
.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;
.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

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§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker

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and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

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§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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SECTION 00 73 13 - SUPPLEMENTARY GENERAL CONDITIONS A201-2017

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2017. 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

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
4. ADMINISTRATION OF THE CONTRACT
5. SUBCONTRACTORS
6. CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7. CHANGES IN THE WORK
8. TIME
9. PAYMENTS AND COMPLETION
10. PROTECTION OF PERSONS AND PROPERTY
11. INSURANCE AND BONDS
12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT
15. CLAIMS AND DISPUTES

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ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

Strike the last sentence of Section 1.1.1 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 Section:

"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."

1.1.8 INITIAL DECISION MAKER

Strike the last sentence of Section 1.1.8 in its entirety and add the following to the end of the remaining sentence:

" and certify termination of the Agreement under Section14.2.2."

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1.1 Insert "if possible" at the end of the second sentence.

Add the following Sections:

"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."

"1.2.5The 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."

"1.2.6The 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

Strike Section 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

NOT FOR BIDDING

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."

Strike Section 1.5.2 in its entirety.

1.7 DIGITAL DATA USE AND TRANSMISSION

Strike Section 1.7 in its entirety and replace with the following:

"The parties shall agree upon protocols governing transmission and use of Instruments of Service or any other information or documentation in digital form."

1.8 BUILDING INFORMATION MODELS USE AND RELIANCE

Strike Section 1.8 in its entirety.

ARTICLE 2: OWNER

2.2 EVIDENCE OF THE OWNERS FINANCIAL ARRANGEMENTS

Strike Section 2.2 in its entirety.

2.3 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.3.3 Strike 2.3.3 in its entirety.

2.3.4 Add the following sentence at the end of the paragraph:

"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."

Strike Section 2.3.6 in its entirety and replace with the following:

"2.3.6The Contractor shall be furnished free of charge (1) electronic set of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling."

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2.5 OWNER'S RIGHT TO CARRY OUT THE WORK

Add ", except as outlined in Section 3.15" after the reference to "Article 15" at the end of the last sentence of the Section.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.2 Add "and Owner" after "report to the Architect" in the second sentence.

3.2.4 Strike "subject to Section 15.1.7" in the second sentence.

3.2.4 Strike the third sentence.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Sections:

"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, or as otherwise identified by the specifications. 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 Sections:

"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 Architect & Owner 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 having been completely cured, dried and/or otherwise made satisfactory to receive this Work.

NOT FOR BIDDING

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 Sections:

"3.5.3 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 warranty."

"3.5.4 Defects appearing during the period of warranty 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 warranty will have elapsed."

"3.5.5 Upon notification by the Owner of a defect covered by the Contractor's warranty, the Contractor shall respond within 4 hours of the notification."

"3.5.6 In addition to the General Warranty there are other warranties 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 warranties will commence at the same time as the General Warranty."

"3.5.7 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."

3.8 ALLOWANCES

Add the following Section:

"3.8.1.1 For costs to be covered under a project allowance, (included in the schedule of values) the Contractor shall submit a summary of those costs anticipated and an Allowance Access Authorization Form to the Architect and Owner, reflecting the projected costs. The Allowance Access Authorization Form must be signed by the Owner prior to initiating any work associated with the allowance."

3.10 CONTRACTOR'S CONSTRUCTION AND SUBMITTAL SCHEDULES

3.10.1 Add "estimated" after "and the" and before "date of" in the second sentence.

3.10.2 Strike "and thereafter as necessary to maintain a current submittal schedule" in the first sentence.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Sections:

"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,

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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 the conformed contract 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 Upon completion of the work noted in 3.11.2 the contractor shall schedule a meeting with the Architect/Engineer and Owner to review the final record drawings and closeout documents prior to submission. After this meeting the Contractor shall make adjustments per the review, and submit one (1) original markup and (2) copies of the red line drawings (as-built conditions, to the Owner and one (1) print to the Architect. In addition, attach one complete set of the as-built documents to each of the Operating and Maintenance Instructions/Manuals. The Contractor will include (2) USB drives, each containing all "red line drawings (as-built) and Closeout Documents properly tabbed in accordance with closeout requirements as defined elsewhere in the contract documents."

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.10.2 Strike "If the Contract Documents require" from the beginning of the sentence.

3.12.10.2 Strike "to" between "professional" and certify" and replace with "shall".

3.17 Insert "indemnify and" between "shall" and "hold" in the second sentence.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

4.2.7 Strike the first sentence 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."

4.2.7 Strike the second sentence 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 Section:

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

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

ARTICLE 5: SUBCONTRACTORS

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

5.2.3 Strike Section 5.2.3 in its entirety and replace with the following:

"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."

5.2.4 Strike Section 5.2.4 in its entirety and replace with the following:

"The Contractor may not substitute any Subcontractor listed in its Bid unless the Contractor complies with the requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4. Failure to comply with this requirement shall subject the Contractor to a penalty as outlined in Section 5.2 of the Owner's General Requirements."

Add the following Section:

"5.2.5 The Contractor shall comply and shall ensure all Subcontractors comply with all requirements for drug testing as set forth in TITLE 19 LABOR DELAWARE ADMINISTRATIVE CODE 4000 Office of Management and Budget 4100 Division of Facilities Management **4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects."**

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

6.1.1 Strike "and waiver of subrogation" from the end of the second sentence.

6.1.4 Strike Section 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

6.2.3 Strike "shall" and replace with "may" in the second sentence.

ARTICLE 7: CHANGES IN THE WORK

(SEE ARTICLE 7: CHANGES IN WORK IN THE STATE OF DELAWARE DIVISION OF FACILITIES MANAGEMENT GENERAL REQUIREMENTS)

7.2 CHANGE ORDERS

Add the following Sections:

"7.2.2 In addition to the above:

NOT FOR BIDDING

7.2.2.1 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.

7.2.2.2 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 subcontractor's work.

7.2.2.3 Where the Third Tier Contractor is going to be completing the additional work, the Third-Tier contractor will be allowed a markup of fifteen percent (15%) overhead and profit on changes order work above and beyond the direct costs stated previously. To this amount, the Subcontractor will be allowed a markup not to exceed seven and one-half percent (7.5%) on the Third-Tier Contractor's work and the General Contractor will be allowed a markup not to exceed seven and one-half percent (7.5%) of the amount of the Subcontractor's markup.

7.2.2.4 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.

7.2.2.5 These markups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc."

7.3.4.1 Strike "and other employee costs approved by the Architect" after "worker's compensation insurance,"

7.3.4.4 Add "work attributable to the" before "change" at the end of the sentence.

7.4 MINOR CHANGES IN THE WORK
Add "unless such changes are approved" at the end of the third sentence.

ARTICLE 8: TIME

8.2 PROGRESS AND COMPLETION

8.2.1 Add the following Section:

"8.2.1.1 Refer to Project Specifications Section SUMMARY OF WORK for Contract time requirements."

8.2.2 After "by the Contractor" strike "and" and insert "to".

8.2.4 Add the following Section:

"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

NOT FOR BIDDING

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

Add the following Section:

"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."

Strike Section 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 Section 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 Section:

"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 Sections:

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

"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 1.5% of the initial contract amount."

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Strike Section 9.3.1 in its entirety and replace with the following:

"At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values for completed portions of the Work. The application shall be notarized, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage."

Add the following Sections:

"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."

NOT FOR BIDDING

"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 Subsections 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

9.6.1 Strike Section 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."

9.6.8 Strike "Provided the Owner has fulfilled its payment obligations under the Contract Documents," in the first sentence.

9.7 FAILURE OF PAYMENT

Strike Section 9.7 in its entirety and replace with the following:

"If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within fourteen days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within thirty days after the date established in the Contract Documents, the amount certified by the Architect, then the Contractor may, upon thirty additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents."

9.8 SUBSTANTIAL COMPLETION

9.8.3 At the end of Section 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 Strike "shall" and insert "may" in the second sentence.

NOT FOR BIDDING

9.8.5 Insert "1/2 of the" after "make payment of" in the second sentence.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 Strike the first sentence and replace with the following (the remainder of the Section remains as written):
"The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use authorized by public authorities having jurisdiction over the Project."

9.10.2 Strike "to remain in force after final payment is currently in effect" after "required by the Contract Documents" and replace with "shall remain in force until final payment is completed" in the first sentence.

9.10.4.4 Strike "if permitted by the Contract Documents,"

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Sections:

10.1.1 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 Section:

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.

10.2.5 Strike the second sentence in its entirety.

10.3 HAZARDOUS MATERIALS AND SUBSTANCES

10.3.3 Strike Section 10.3.3 in its entirety.

10.3.4 Insert "hazardous" in the last sentence after "handling of such" .

NOT FOR BIDDING

10.3.6 Strike Section 10.3.6 in its entirety.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S INSURANCE AND BONDS

11.1.1 Strike "Owner" from the third sentence.

11.2 OWNER'S LIABILITY INSURANCE

Strike 11.2 in its entirety, except that in the case of school projects in which case Section 11.2 shall remain.

11.3 WAIVERS OF SUBROGATION

Delete Section 11.3 in its entirety

11.4 LOSS OF USE, BUSINESS INTERRUPTION, AND DELAY IN COMPLETION INSURANCE

Delete Section 11.4 in its entirety

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.2.2 AFTER SUBSTANTIAL COMPLETION

Add the following Section:

"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 non-conforming work and that required under contract including any damage to the structure."

12.2.2.1 Strike all references to "one year" or "one-year" and replace with "two years".

12.2.2.2 Strike "one-year" and replace with "two years".

12.2.2.3 Strike "one-year" and replace with "two years".

12.2.5 Strike "one-year" and replaced with "two years".

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Strike the last sentence.

NOT FOR BIDDING

13.4 TESTS AND INSPECTIONS

13.4.1 Strike the last sentence and replace with the following:

"The Owner shall pay for tests, inspections, or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor."

13.5 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" and replace with "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month."

Insert the following Section:

"13.6 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

13.6.1 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

14.1 TERMINATION BY THE CONTRACTOR

14.1.1.4 Insert ", upon the Contractors' request," after "furnish to the Contractor".

14.1.3 Strike "and profit on Work not executed, and" after "as well as reasonable overhead" and replace with ", profit, and reasonable"

14.3 SUSPENSION BY OWNER FOR CONVENIENCE

14.3.2 Strike "Adjustment of the Contract Sum shall include profit".

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

14.4.3 Strike Section 14.4.3 in its entirety and replace with the following:

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

ARTICLE 15: CLAIMS AND DISPUTES

15.1 CLAIMS

15.1.2 TIME LIMITS ON CLAIMS

NOT FOR BIDDING

Strike the last sentence.

15.1.3 NOTICE OF CLAIM

Strike all references to "21" and replace with "45".

15.1.5 CLAIMS FOR ADDITIONAL COSTS

Strike the first sentence and replace with the following:

"Contractor shall not proceed to execute any portion of the Work that is subject to the Claim without prior approval of the costs or method of payment for the costs associated with the Claim as determined by the Architect and approved by the Owner."

15.1.7 WAIVER OF CLAIMS FOR CONSEQUENTIAL DAMAGES

Strike Section 15.1.7 in its entirety.

15.2 INITIAL DECISION

15.2.1 Strike "and binding dispute resolution" in the fourth sentence and replace with "or any and all remedies at law or in equity".

15.2.5 Strike Section 15.2.5 in its entirety and replace with the following:

"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 any or all remedies at law or in equity."

15.2.6 Strike Section 15.2.6 and its sub-Sections in their entirety.

15.3 MEDIATION

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

15.3.2 Strike ", shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement," in the first sentence.

15.3.2 Strike all references to "binding dispute resolution" and replace with "any or all remedies at law and in equity".

15.3.3 Strike Section 15.3.3 in its entirety.

15.4 ARBITRATION

Strike Section 15.4 and its Subsections in their entirety.

END OF SECTION

NOT FOR BIDDING

SECTION 00 73 43 PREVAILING WAGE RATES

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 318-2769

Mailing Address:
252 Chapman Road
Suite 210
Newark, DE 19702

Located at:
252 Chapman Road
Suite 210
Newark, DE 19702

PREVAILING WAGES FOR **BUILDING CONSTRUCTION** EFFECTIVE MARCH 13, 2026

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	30.70	37.78	55.01
BOILERMAKERS	91.87	46.61	68.52
BRICKLAYERS	68.29	68.29	68.29
CARPENTERS	64.06	64.06	52.30
CEMENT FINISHERS	96.91	68.92	53.44
ELECTRICAL LINE WORKERS	61.02	52.34	39.90
ELECTRICIANS	86.87	86.87	86.87
ELEVATOR CONSTRUCTORS	121.73	86.57	109.37
GLAZIERS	88.42	88.42	76.04
INSULATORS	71.54	71.54	71.54
IRON WORKERS	79.33	79.33	79.33
LABORERS	59.65	59.65	59.65
MILLWRIGHTS	91.00	91.00	73.10
PAINTERS	61.53	61.53	61.53
PILEDRIVERS	93.37	52.83	42.72
PLASTERERS	40.06	40.06	29.69
PLUMBERS/PIPEFITTERS/STEAMFITTERS	82.05	85.29	78.26
POWER EQUIPMENT OPERATORS	85.29	85.29	85.29
ROOFERS-COMPOSITION	36.41	31.28	33.64
ROOFERS-SHINGLE/SLATE/TILE	24.68	29.36	23.08
SHEET METAL WORKERS	87.84	87.84	87.84
SOFT FLOOR LAYERS	63.69	63.69	50.43
SPRINKLER FITTERS	77.63	77.63	77.63
TERRAZZO/MARBLE/TILE FNRS	73.75	73.75	84.10
TERRAZZO/MARBLE/TILE STRS	81.93	81.93	93.27
TRUCK DRIVERS	58.41	36.83	28.66

CERTIFIED: 8/26/2026 BY: Selina Crossland Jr
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) 318-2769.

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

PROJECT: 2-26-92 WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT, New Castle County

NOT FOR BIDDING

PREVAILING WAGE DEBARMENT LIST

The following contractors have been debarred for violations of the prevailing wage law 29Del.C. §6960 or other applicable State statutes.

Therefore, no public construction contract in this State shall be bid on, awarded to, or received by contractors and individuals on this list for a period of (3) three years from the date of the judgment or as deemed by a court of competent jurisdiction.

Contractor	Address	Date of Debarment
Mullen Brothers, Inc. and Daniel Mullen, individually	3375 Garnett Road, Boothwyn, PA 19060	Indefinite/ Civil Contempt
State Contractors Corporation, and Jose Oscar Rivera, individually	13004 Hathaway Drive Silver Spring, MD 20906	Indefinite/ 19 Del.C. 2374(f)
Green Granite and Jason Green, individually	604 Heatherbrooke Court Avondale, PA 19311	Indefinite/ Civil Contempt
Pro Image Landscaping, Inc. and Owner(s) individually	23 Commerce Street Wilmington, DE 19801 and/or 2 Cameo Road Claymont, DE 19703	Indefinite/19 Del.C. §108 & 10 Del.C. 542(c)
Liberty Mechanical, LLC and Owner(s), individually	2032 Duncan Road Wilmington, DE 19801	Indefinite/ 19 Del.C. 2374(f)
Integrated Mechanical and Fire Systems Inc. and Allison Sheldon, individually	4601 Governor Printz Boulevard Wilmington, DE 19809	Indefinite/19 Del.C. §108 & 10 Del.C. 542(c)
ACH 1, INC.	873 Salem Church Road Newark, DE 19702	Indefinite/19 Del.C.6960

Updated: July 6, 2022

NOT FOR BIDDING

00 73 44 - RELEASE FORM FOR ELECTRONIC FILES

OWNER: Red Clay Consolidated School District
PROJECT: Warner Elementary School Roof Replacement
LIST OF DRAWINGS:
USAGE FEE: $0.00 DATE:

Definitions:
All electronic information and other instruments of service provided by BSA+A and its consultants, 954 Justison Street, Wilmington, DE 19801, which include everything transmitted on electronic storage media, from a website, or via the Internet, is known as the Data. The Recipient is the undersigned firm or individual requesting the Data.

Terms:

In accepting and utilizing the Data, the Recipient agrees with the following Terms:

1. The General Contractor/Construction Manager, and every subcontractor using the Data shall each return one signed copy of this Release Form to BSA+A.
2. DISTRIBUTION AND COORDINATION: The Recipient will not distribute the Data to any other firm or individual, except for the Recipient's consultants or subcontractors. If BSA+A issues an update or change in the Data during the course of the project, the General Contractor/Construction Manager is responsible for distribution and coordination. Transfer of electronic data does not include subsequent updates and revisions
2. USE: The Data will be used only for the specific project and owner listed above. None of the Data will be used for any other project or purpose, at this or any other site. Indicia/Title Block may be removed at the discretion of the design professional. The
3. OWNERSHIP: Copyright and ownership of the Data are not transferred to the Recipient, or to any other party. BSA+A and/or Owner retain all rights to the Data.
4. ACCURACY: Design data is never perfect. The information is not guaranteed to be accurate. The method of data transfer cannot be guaranteed to be error-free, durable, or compatible with the Recipient's hardware, software or output systems. Any defects discovered by the Recipient shall be reported to BSA+A. **Contractors and subcontractors are not relieved of their normal responsibilities to independently check, coordinate & verify information and dimensions, and to familiarize themselves thoroughly with the project. The electronic data received should not be relied upon for existing building conditions, which must be verified as required.**
5. Electronic data **(REVIT 2025 Model and AutoCAD 2025 Files)** shall be provided for use as background plans only. Contractor shall be responsible for verification of all dimensions and revisions. Contractor shall not have, copy or reproduce details, elevations, sections, schedules or other similar data.
6. Neither BSA+A nor its consultants are not to be held liable for any damages attributable to the use of the Data, or changes and additions made to the Data by you or your consultants or subcontractors. The Undersigned agrees, to the fullest extent permitted by law, to indemnify and hold BSA+A and its consultants harmless from any damage, liability or cost, including reasonable attorney's fees and costs of defense, arising from any changes made by anyone other than the Firm or from any reuse of the drawings and data without the prior written consent of BSA+A and its consultants.
7. This agreement shall be governed by the laws of Delaware.
8. The Undersigned agrees to make payment of _____ processing fee for each consultant's electronic files to BSA+A prior to release of any electronic media release.

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GENERAL CONTRACTOR, CONSTRUCTION MANAGER, OR SUBCONTRACTOR:

Print Clearly:

Company:_____

Name:_____

Address:_____

_____

Phone:_____**Email:**_____

Signed_____**Date:**_____

NOT FOR BIDDING

SECTION 00 81 13 - GENERAL REQUIREMENTS

TABLE OF ARTICLES

1. GENERAL
2. OWNER
3. CONTRACTOR
4. ADMINISTRATION OF THE CONTRACT
5. SUBCONTRACTORS
6. CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS
7. CHANGES IN THE WORK
8. TIME
9. PAYMENTS AND COMPLETION
10. PROTECTION OF PERSONS AND PROPERTY
11. INSURANCE AND BONDS
12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT

NOT FOR BIDDING

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

NOT FOR BIDDING

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 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."

NOT FOR BIDDING

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

3.13 During the contract Work, the Contractor and each Subcontractor, shall implement an Employee Drug Testing Program in accordance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects". "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

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 requires, 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

NOT FOR BIDDING

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.

NOT FOR BIDDING

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.

5.1.6 The Contractor may employ additional Subcontractors on the jobsite only after submitting a copy of the Subcontractor's Employee Drug Testing Program to the Owner for approval. A Contractor or Subcontractor shall not commence work until the Owner has concluded its

NOT FOR BIDDING

review and determined that the submitted Employee Drug Testing Program complies with OMB Regulation 4104.

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

NOT FOR BIDDING

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 prevailing wage rates plus a maximum multiplier of 1.35 times DPE. For example, if the prevailing wage rate is $50/hour, the DPE would be $67.50/hour (50 x 1.35).

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:

7.3.3.1 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.

7.3.3.2 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 subcontractor's work.

7.3.3.3 Where the Third Tier Contractor is going to be completing the additional work, the Third-Tier contractor will be allowed a markup of fifteen percent (15%) overhead and profit on changes order work above and beyond the direct costs stated previously. To this amount, the Subcontractor will be allowed a markup not to exceed seven and one-half percent (7.5%) on the Third-Tier Contractor's work and the General Contractor will be allowed a markup not to exceed seven and one-half percent (7.5%) of the amount of the Subcontractor's markup.

7.3.3.4 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.

7.3.3.5 These markups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc.

NOT FOR BIDDING

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.

NOT FOR BIDDING

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.

NOT FOR BIDDING

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 previously unknown hazardous material such as PCBs, asbestos, etc. is encountered on the project. The Owner will arrange

NOT FOR BIDDING

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 to the closeout documents to be submitted at the end of the project.

10.2.1 Any activities with the potential to disturb lead-based materials should be performed by the Contractor in accordance with OSHA regulations pertaining to Lead in Construction, 29 CFR 1926.62, Lead.

10.2.1.1 The Contractor shall notify the Owner in the event they encounter previously unknown material that they suspect may contain "lead". The Owner will arrange with a qualified specialist for identification and testing and advise the Contractor of the results. In the case that testing identifies potential lead based materials, the contractor shall continue performance of the work that has the potential to disturb associated in accordance with OSHA regulations pertaining to Lead in Construction, 29 CFR 1926.62, Lead.

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 must be provided directly to the Owner 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.

NOT FOR BIDDING

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, may 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		
	$1,000,000	for each occurrence
	$3,000,000	aggregate
Property Damage	$1,000,000	for each occurrence
	$3,000,000	aggregate

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

Bodily Injury		
	$1,000,000	for each occurrence
	$3,000,000	aggregate
Property Damage	$1,000,000	for each occurrence
	$3,000,000	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.

NOT FOR BIDDING

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.

NOT FOR BIDDING

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 by 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 OR SUSPENSION OF THE 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

NOT FOR BIDDING

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."

END OF SECTION

NOT FOR BIDDING

EMPLOYEE DRUG TESTING REPORT FORM
Period Ending:_____

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds maintain testing data that includes but is not limited to the data elements below.

Project Number: _____

Project Name: _____

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____
_____
_____

Number of employees who worked on the job site during the report period: _____

Number of employees subject to random testing during the report period: _____

Number of Negative Results _____ Number of Positive Results _____

Action taken on employee(s) in response to a failed or positive random test:
_____
_____
_____

Date: _____

This form is not required to be submitted to the Owner. Included as a reference to show information required to be maintained by the Contractor. The Owner shall have the right to periodically audit all Contractor and Subcontractor test results at the Contractor's or Subcontractor's offices (or by other means to make the data available for inspection by the Owner).

NOT FOR BIDDING

EMPLOYEE DRUG TESTING
REPORT OF POSITIVE RESULTS

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds to notify the Owner in writing of a positive random drug test.

Project Number: _____

Project Name: _____

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____
_____
_____

Name of employee with positive test result: _____

Last 4 digits of employee SSN: _____

Date test results received: _____

Action taken on employee in response to a positive test result:
_____
_____
_____

Authorized Representative of Contractor/Subcontractor: _____
(typed or printed)

Authorized Representative of Contractor/Subcontractor: _____
(signature)

Date: _____

This form shall be sent by mail to the Owner within 24 hours of receipt of test results.

Enclose this test results form in a sealed envelope with the notation "Drug Testing Form – DO NOT OPEN" on the face thereof and place in a separate mailing envelope.

NOT FOR BIDDING

WARNER ELEMENTARY SCHOOL ROOF REPLACEMENT
801 W 18th St., Wilmington, DE 19802
Red Clay Consolidated School District (RCSD)
RCSD Project No. 2-27-13

AFFIDAVIT OF CRAFT TRAINING COMPLIANCE

We, the contractor, hereby certify that we and all applicable subcontractors will abide by the contractor and subcontractor craft training requirements outlined below for the duration of the contract. Craft training must be provided by a contractor and/or subcontractor for each craft on a project for which there are Delaware Department of Labor approved and registered training programs or, if the contractor and/or subcontractor meets the requirements under Title 29, Chapter 69, Section 6960A.(b)(1)c.1.-3., payment may be made in accordance with Title 29, Chapter 69, Section 6960A.(b)(1)d. A list of crafts for which there are approved and registered training programs is maintained by the Delaware Department of Labor and can be found at:
https://laborfiles.delaware.gov/main/det/apprenticeship/Pre_RAP_Programs.pdf
If you have questions regarding craft training programs, please submit all questions in writing to the Delaware Department of Labor at: apprenticeship@delaware.gov. ***This Affidavit of Craft Training Compliance must be submitted prior to contract execution***.

In accordance with Title 29, Chapter 69, Section 6960A.(a)(1), a contract relating to a public works project under § 6962 of Title 29 must include a craft training program for each craft in the project if at the time the contractor executes a public works contract, all of the following apply:

a. A project meets the prevailing wage requirement under Section 6960 of Title 29.
b. The contractor employs 10 or more total employees.
c. The project is not a federal highway project, except for the project under Section 6962(c)(11) of Title 29.
d. There is an apprenticeship program for a craft in the project on the list of crafts under Section 204(b)(2) of Title 19.

Pursuant to Title 29, Chapter 69, Section 6960A.(a)(2), ***a contractor must commit that all subcontractors provide craft training*** if paragraph (a)(1) of this section applies to the subcontractor. Failure to provide required craft training or payment on the project may subject the successful contractor and/or subcontractor(s) to penalties as outlined in Title 29, Chapter 69, Section 6960A.(d)(1)-(3).

Craft(s): _____

Contractor Name: _____

Contractor Address: _____

_____

_____

Contractor Program Registration Number(s) _____
On this line also indicate whether DE, Other State (identify) or US Registration Number

Or

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☐ **A payment has been made in the amount established under Section 204(b)(2)b.2. of Title 19, for the craft into the Delaware Department of Labor's Apprenticeship and Training Fund.**

Or

☐ **Craft Training requirements are not applicable because:**

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

State of Delaware)
) ss:
County of _____)

Before me, a notary public, in and for said county and state, personally appeared, _____, who acknowledged to me that she/he did execute the foregoing instrument on behalf of _____.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this ____ day of _____ 20___.

_____
Notary Public
Commission Expires _____

THIS PAGE MUST BE SIGNED AND NOTARIZED TO BE CONSIDERED.

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SECTION 01 00 00 - GENERAL REQUIREMENTS

PART 1 - GENERAL

A. The purpose of this section is to supplement the construction documentation prepared by the Project Architect. Since site conditions do vary from site to site, the General Contractor (hereinafter referred to as "Contractor") agrees that he has visited the proposed site for this project and that his price includes all work necessary to complete the scope as intended on the drawings and as required to obtain all required certificates of occupancy.

B. Specific direction, details documented on the Construction Plans prepared by the Project Architect shall take precedence over this specification should any ambiguity exits between the two.

C. Contractor shall notify Owner or Owner's authorized representative prior to making any changes, alterations or revisions from the contract plans or specifications. It is the Contractor's responsibility to received written approval from Owner prior to making any changes. Changes made without written approval may be reversed by Owner at Contractor's cost.

D. The Contractor shall be responsible for all permits and payment of fees, including individual building, individual trade permits (mechanical, electrical sprinkler etc.) taxes, etc., and for obtaining all required certificates for occupancy. The Owner shall assist the contractor in securing inspections, however it is ultimately the Contractor's responsibility to secure both Intermediate Life Safety reviews and inspection and final occupancy approval from Authorities Having Jurisdiction (AHJ) in accordance with the project schedule. All contractors and subcontractors shall have business licenses as required by the governing local jurisdiction.

E. All work shall be substantially completed on or before the date for in the Contract Documents ("Construction Completion Date"), unless extended in writing by change order or mutual agreement between the Owner and Contractor. Notwithstanding the condition of the Work, the Work shall not be deemed to be substantially complete until such time that Contractor presents Owner with a Certificate(s) of Occupancy or other evidence acceptable to the owner of the approval of the Work by the governing bodies having jurisdiction.

F. Contractor to submit to Owner/Owner's representative cuts, samples product literature and or shop drawings for all building materials, millwork, fixtures, hardware, mechanical and electrical equipment, design drawings and finishes prior to installation. Approval of submittals is to confirm general compliance with the project specifications and plans and does not relieve the contractor from complying with the contract documents or applicable codes.

G. Additional work approved by Owner due to a change in the scope of work as described in the construction documents, shall contain a fee for contractor's profit and overhead in accordance with the supplementary conditions.

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H. Contractor to submit to Owner a list of all proposed subcontractor's prior to the commencement of work. Mechanical and electrical contractors must be approved prior to final contract award. Owner shall have the right of final approval of a subcontractor's and the right to review details of contractor's and sub-contractor's bids, proposals, estimates, etc. Contractor to provide a detailed CPM based schedule which shall include not only contractor's activities but all related project activities required for the successful completion of the project. The schedules shall be coordinated with any schedules or other time restraints identified as part of the bidding package. The schedule shall be updated as project conditions require or at the request of the owner's representative.

I. Owner shall have the right, at Owner's cost, to hire qualified third party Consultants/Engineers ("Consultants") to review the quality, consistency, and workmanship of any or all of the completed work, and Contractor agrees to cooperate with Consultants. If Consultant determines and documents that the work performed by Contractor or Subcontractor's does not conform to the plans or specifications or the work does not meet applicable governmental codes, building codes or general building standards, Contractor agrees to pay for the cost of said review and repair, replace or otherwise complete remedial work as required.

J. Prior to the commencement of construction, Contractor shall submit an executed, recordable Waiver of Liens covering the work of the contractor and all subcontractors. All subcontracts written by the contractor shall acknowledge that a Waiver of Liens has been recorded for the project. At project completion and submitted with the final billing. Releases of Liens shall be provided by the contractor and all major subcontractors. Owner shall not be obligated to pay any amount not covered by a release of liens.

K. In all projects special consideration shall be given to the following air quality/cleanliness items:

1. If new return duct systems are used to condition construction space prior to final occupancy then they shall also be covered with filter media and maintained/replace as needed. Equipment warranties or other applicable warranties shall not begin prior to substantial completion.

L. The Contractors shall visit and examine the premises so as to fully understand all of the existing conditions pertaining to their work.

M. The Owner reserves the right to designate the order in which the Contractors shall proceed with any and all portions of the work. Work shall be coordinated so as not to interfere with the business of the Owner. No additional work shall be started without the approval of the building's Owner.

N. The Contractors shall comply with all Federal, State and Municipal Laws and Ordinances and shall give all notices and obtain all permits necessary for the work, and shall pay all cost of fees for same. The Contractors shall familiarize themselves with the rules of all boards, or departments having jurisdiction and with the work shown on the plans. They shall notify the Owner, if in their opinion any work is omitted or if any work or material shown or specified is not in accordance with good practice or these rules.

O. All noise, dirt and dust shall be kept at an absolute minimum and comply with Hospital Policies. All areas shall be left broom clean at the end of each day's operations. Floors

NOT FOR BIDDING

shall be protected with "Sisalcraft", or similar paper, wherever alteration work might damage the floor covering.

P. In the event that any portion of the building is occupied before other areas begin construction, temporary partitions shall be erected by all applicable Contractors before the start of new work and removed by the Contractors at the completion of the work. All Contractors shall submit to the Owner in writing all provisions planned for maintaining ease of access and any “Interim Life Safety Measures” required, and acquire approval from local authorities for interior life safety measures.

Q. All work shall be completed during normal working hours, unless otherwise specified. If additional work is directed to be completed on premium time, the additional cost of authorized overtime work shall be subject to reimbursement by the Owner, shall be only the actual amounts earned by such craftsmen and supervisors who are directed to work on premium time, and shall include such regular taxes and withholdings as are customary, plus a mark up. A list of craftsmen and supervisor hourly rate will be submitted as a part of the Contract Package.

R. The Sub-Contractors shall obtain and maintain the insurances in accordance with Owner’s requirements:

1. General Liability: Comprehensive form, premises operations, products/completed operations, contractual insurance, broad form property damage, independent Contractors, personal injury with limits in amount as specified by Owner for combined single limit for each occurrence.
2. Automobile Liability: Comprehensive form, with limits as specified by Owner for single limit for each occurrence (bodily injury and property damage combined).
3. Workmen's Compensation Insurance as required by the state(s) in which the contract is to be performed and employer's liability insurance with limits for accident, disease-policy limit, and disease-each employee, as specified by Owner.
4. Excess Liability, in the Umbrella Form and on an Occurrence Basis, with limits for combined single unit for each occurrence, as specified by Owner.

V. Work to be done shall be all inclusive and any work not specifically mentioned but reasonably implied shall be included. This includes any patch and paintwork necessary.

W. The handling and storage of all welding materials, acetylene and oxygen tanks, burners, etc. if required for the execution of work, shall be subject all times to the approval of the Owner's representative. The Contractor shall provide standby fire extinguishers and all the equipment mentioned herein shall be removed at the end of each working period.

X. Storage of Flammable Materials:

1. Gasoline, etc. cannot be stored in the building.
2. Oil base paints, varnish, etc., is limited to 20 gallons stored in approved storage cabinets or in a 1 hour rated storeroom with a 4-inch high liquid tight sill at the entry door.

Y. Handling and storage of welding materials are subject to the following conditions and the approval of the Owner’s representative.

NOT FOR BIDDING

1. The Contractor shall obtain a welding permit from all governing agencies applicable.
2. Work area shall be kept free of all combustible material.
3. Fire retardant tarpaulins are acceptable and shall be used.
4. All welding and cutting equipment shall be kept outdoors.
5. If acetylene and oxygen tanks are required indoors, they shall be kept as far from the actual work location as possible.
6. All welding and cutting equipment shall, whenever practical, be removed from the building daily.
7. All equipment such as cables, hoses, regulators, etc., shall be in good condition.
8. A fire watch furnished by the Contractors, consisting of at least one man with no other assigned duties, shall be posed at all times to stand by and observe area for any potential hazards while welding or cutting is being done.
9. The fire watch shall be equipped with suitable personal eye protection and fire extinguishers as follows:

Work Area	Type Extinguishers	No. Required
Equipment Spaces	CO_2 (15 lb.)	2
Other Spaces	Water (2-1/2 gal.)	1
	CO_2 (15 lb.)	1

10. All extinguishers shall be furnished by the Contractors.
11. Fire watch shall be provided during and for 30 minutes after operations end for the day. Fire watch must be maintained during short breaks and for 30 minutes at the start of long breaks in the work operations. An inspection of the work area shall be made 1/2 hour after the fire watch ends.

Z. The Contractor shall keep the building free from rubbish and dirt. No rubbish or materials shall be allowed to accumulate in the building, on the property, or on the street or sidewalk.

AA. The Contractor shall take all necessary precautions for the safety of the employees on the work site and shall comply with all applicable provisions of federal, state, or municipal safety laws to prevent accidents or injury on or about the property.

BB. Security Regulations:

1. All persons employed on or visiting the site of the work will be required to observe the Owner's security regulations and must be identified by proper credentials furnished by Owner.
2. Passes for entry to the building will be issued by the Owner to a designated list of supervisory personnel. All working in the building will be required to wear an identification badge furnished by the Owner and prominently displayed.

CC. The date of final acceptance for each phase of construction shall be that date upon which the Owner occupies the completed area, and the punch list, as built drawings, maintenance manuals, agreements, instructions, diagrams, spare parts lists and parts, warranties, bonds, etc. are signed off as complete and in the Owner possession.

NOT FOR BIDDING

DD. The Contractors shall maintain a set of contract drawings, specifications and shop drawings of the appropriate package and mark same to show the actual installation where the installation varies from the work as originally shown. Mark sets with red pencil. Use other colors to distinguish between variations in separate categories of the work. Upon completion of the work submit above to the Owner.

EE. The Constructor shall maintain on the site a stamped permit set of drawings in addition to all construction permits, made available the contract for inspection by building officials and other applicable municipalities required to inspect the site and construction.

FF. Execution of all work, in particular work involving existing utilities, shall be carefully scheduled with the Owner and shall be undertaken in a manner to minimize disruption of normal operation of the facility and the welfare of the occupants. Scheduling and planning shall be subject to the approval of the Architect and the Owner.

GG. The Contractors are to refer to AIA Document A201-2017, General Conditions of the Contract for Construction – 2017 Edition. This document and the Owner's Policies shall be applicable to this project.

HH. The Contractors shall be responsible for incorporating into the contract scope all general conditions and special conditions included, or in the contract scope. The Contractor shall be responsible for resolving any contradictory or conflicting items appearing in this section or in the contract documents, by requesting in writing a resolution to be provided by the Architect and Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

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SECTION 01 10 00 - 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. Work by Owner.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.
8. Miscellaneous provisions.

B. Related Requirements:

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

1.3 PROJECT INFORMATION

A. Project Identification: Warner Elementary School Roof Replacement

1. Project Location: 801 W 18TH St., Wilmington, DE 19802

2. Owner's Representative: Marcin Michalski. Director of Facilities

B. Architect: BSA+A, 954 Justison Street, Wilmington, DE 19801

1.4 WORK COVERED BY CONTRACT DOCUMENTS

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

1. Roof removal to deck, roof replacement, roof recovery.

B. Type of Contract:

NOT FOR BIDDING

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

1.5 WORK BY OWNER

A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

B. The owner will be responsible for any asbestos or hazardous materials testing or abatement discovered during the demolition phase, or if required by Regulatory agencies.

1.6 COORDINATION

A. Contractor shall be responsible to coordinate their work with the work of others, including, but not limited to, the preparation of general coordination drawings, diagrams and schedules, and control of site utilization, from the beginning of activity, through project close-out and warranty periods.

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

1. Limits: Confine construction operations to areas within the Contract limits any additional areas where work is permitted by owner.
2. Driveways, Walkways and Entrances: Keep driveway, loading areas**,** and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Coordinate with school administration to schedule deliveries to minimize use of driveways and entrances by construction operations.

1.7 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy Project site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

NOT FOR BIDDING

1.8 WORK RESTRICTIONS

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

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

B. On-Site Work Hours: Limit work in conjunction with the existing surrounding building to normal business working hours of 6:30 a.m. to 4:30 p.m., Monday through Friday, unless otherwise indicated.

1. Weekend Hours: Must be arranged in advance.
2. Early Morning Hours: Provide 72 hours' notice.
3. Hours for Utility Shutdowns: Must be arranged in advance.

C. Contractor is responsible for having a competent project superintendent/foreman on-site during all work performed under its contract. In the event the Contractor has non-English speaking employees or subcontractors on the project, they shall have a superintendent or foreman on site, at all times, who speaks English and can communicate with Contractor's employees. Should the Contractor fail to meet this requirement, at any time, The Owner may direct all Work to stop until the proper supervision is on site. The Contractor will be responsible for maintaining the project work schedule and make up at its own expense, any delay to the Schedule resulting from the work stoppage.

D. Nonsmoking site: Smoking, use of tobacco products and e-cigarettes is not permitted anywhere on the job site and school property. Violators of this policy are to be placed on notice for the first offense and removed from the job site with a second offense.

E. Fire arms, ammunition, explosives, etc. are prohibited from anywhere on the property. Contractor employees, subcontractors or contract workers violating this policy are to be immediately removed from the site. Law enforcement official may be notified.

F. Controlled Substances: Use or possession of controlled substances or illegal drugs is prohibited on the property. Contractor employees, subcontractors or contract workers violating this policy are to be immediately removed from the site. Law enforcement official may be notified.

1. All public works contracts (paid) with public funds must include provisions requiring the contractor, its agents and employees to implement (a) mandatory drug testing program(s) for all employees or agents working on the job site in non-clerical positions. Provisions governing mandatory drug testing shall be incorporated into all public works contracts…" "The rules governing the administration of such tests by the contractor shall be promulgated by the Director of the Office of Management and Budget." [in accordance with 29Del.C.§6908(a)(b)

NOT FOR BIDDING

G. Employee Identification: The contractor will work with the school district to implement an employee badge program during the project. Employees of contractor, sub contractors, and suppliers are to be prepared to provide identification at all times while on school property including project area, other areas of the school, exterior open and parking areas.

1. Maintain list of approved screened personnel with Owner's representative.

H. Interaction or Photography of school employees, staff, students, or guests are prohibited. Violators are to be immediately removed from the construction site for the duration of the project.

I. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

J. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

K. Radios are not permitted to be operated while students are in the building (see work restrictions). Radios are permitted after students leave and while administration is occupying the building, but volume is to be carefully monitored to not disturb school occupants.

1.9 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.

NOT FOR BIDDING

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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 01 11 00 – SUMMARY OF WORK OFCI PRODUCTS

PART 1 – GENERAL

1.1 OWNER-FURNISHED, CONTRACTOR-INSTALLED (OFCI) PRODUCTS

A. The Owner will furnish certain products and equipment for installation by the Contractor, referred to as Owner-Furnished, Contractor-Installed (OFCI) products.

B. OFCI items may include but are not limited to:

1. Door hardware.
2. Mechanical equipment.
3. Plumbing products.
4. Electrical products.
5. Generators & transfer switches.

C. OFCI Products will be delivered to the Project Site F.O.B. Jobsite by the OFCI Product Vendors and unloaded at the site by the Contractor.

D. The Owner shall:

1. Provide the Architect/Engineer with contact information for the OFCI Product Vendors.
2. Make payments to the OFCI Product Vendors based on the Project-specific types and quantities of OFCI Products.
3. Arrange for product guarantees and warranties.

E. The OFCI Product Vendor shall:

1. Coordinate with the Architect/Engineer to develop a final list of the Project-specific quantities and types of OFCI Products.
2. Update OFCI Product pricing based on the finalized list of products and the requirements of the contractual agreement with the Owner.
3. Provide submittals to the Architect/Engineer for each OFCI Product.
4. Coordinate with the Contractor to meet the delivery requirements for OFCI Products to meet the overall Project schedule.
5. Assist the Contractor with pre-installation and installation requirements, start-up, and training.
6. Provide guarantees and warranties to the Owner.

F. Architect/Engineer shall:

1. Review and return shop drawings, product data, and samples provided by the OFCI Product Vendor.
2. Deliver necessary reviewed shop drawings, product data, and samples to the Contractor.
3. Assist the Contractor with pre-installation and installation requirements, start-up, and training.

G. The Contractor shall:

1. Designate required delivery dates for each OFCI Product in the Construction Schedule.
2. Schedule delivery of OFCI Products with the Product Vendor.
3. Receive, unload, and store OFCI Products delivered to the site.

NOT FOR BIDDING

4. Handle products at the site including offloading, uncrating, disposal of crating material, and storage in accordance with the manufacturer's instructions. The Contractor is responsible for handling, storing, and protecting OFCI Products from delivery through beneficial occupancy completion.
5. Complete and submit an Equipment Receipt Verification Form for each OFCI Product.
6. Notify the Owner of any defects or discrepancies discovered upon receipt or during installation.
7. Repair or replace OFCI Products damaged as a result of the Contractor's operations at the Contractor's expense.
8. Provide all labor, equipment, and materials necessary for proper and complete installation.
9. Schedule and perform product start-up in accordance with specific Product requirements. The Contractor is not responsible for any OFCI Product Vendor costs associated with start-up; however, the Contractor is responsible for all other costs, including Vendor return trips due to improper installation or scheduling delays.

1.2 COORDINATION

A. The Contractor shall coordinate with the Owner regarding access requirements and storage locations for OFCI Products. The Contractor is responsible for providing temporary storage facilities as required.

B. The Contractor shall coordinate all OFCI Product deliveries with the OFCI Product Vendor. The Contractor shall assume that OFCI Product deliveries will be made in truckload lots and shall be responsible for any costs associated with Less-Than-Truckload deliveries.

END OF SECTION

NOT FOR BIDDING

01 13 00 – SUMMARY OF WORK – CONSTRUCTION PHASING AND OCCUPANCY REQUIREMENTS

PART 1.1 – GENERAL

A. Work under this Contract shall be coordinated with Red Clay Consolidated School District (RCCSD) to accommodate building occupancy, custodial operations, and school calendar constraints.

B. The Contractor shall sequence and schedule the Work to maintain safe, clean, and orderly conditions at all times.

C. All work activities shall be subject to approval by the District's Facilities Director.

PART 1.2 – SUMMER WORK PERIOD (JUNE 11, 2026 – AUGUST 14, 2026

A. Building Occupancy

1. Only RCCSD custodial and administrative staff shall occupy the building during this period.

B. Access and Work Areas

1. The Contractor shall have access to all spaces within the building unless otherwise restricted by the District.

C. Furniture and Contents

1. RCCSD custodial staff shall relocate furniture and contents as required to support the Contractor's work schedule.
2. The Contractor shall coordinate work sequencing to allow custodial staff access for cleaning and furniture replacement as areas are completed.
3. It is also unreasonable to expect the custodial crew to clean an entire school building within a single week. Cleaning and turnover shall be phased, and accommodations shall be mutually agreed upon.

D. Work Hours

1. Flexible work hours are permitted Monday through Friday.
2. RCCSD custodial staff will support approved overtime work as required.
3. Weekend and holiday work shall be permitted only with prior approval by RCCSD staff and will be evaluated on a case-by-case basis.

PART 1.3 – SUMMER WORK CLOSE-OUT PERIOD (AUGUST 10, 2026 – AUGUST 14, 2026)

A. Demobilization

1. The Contractor shall remove all materials, equipment, debris, and temporary installations from spaces scheduled for occupancy.

B. Agency Approvals

NOT FOR BIDDING

1. The Contractor shall obtain all required inspections, approvals, and sign-offs from applicable agencies necessary for student and staff occupancy.

C. Final Cleaning and Restoration

1. RCCSD custodial staff shall complete final cleaning and replace furniture in remaining occupied spaces following Contractor demobilization.

PART 1.4 – SCHOOL YEAR WORK

A. Subject to approval by the Facilities Director, the Contractor may perform work in unoccupied and support spaces without interruption to normal school operations.

1. Unoccupied and support spaces are defined as mechanical, electrical and storage spaces that can be
accessed from the building exterior and all exterior work.

B. Work may be performed during weekends, holidays, and scheduled school vacations, subject to District approval.

C. The Contractor may, at their discretion, complete the following work during the school year:

1. Work in Library 033 provided the work is completed and the Owner can have beneficial occupancy in 4 weeks.
2. Work in Art Room 042 provided the work is complete and the Owner can have beneficial occupancy in 4 weeks.
3. Work in one set (boys & girls) multi-user toilet rooms at a time. The Owner must have beneficial occupancy of the set being renovated prior to starting work on another set.

If the Contractor elects to complete any of the above work during the school year, the Contractor and
the District shall jointly develop a work schedule that is safe and does not adversely affect instructional time or school operations.

D. Any work proposed to occur in occupied spaces during the school year shall be fully coordinated and approved by the District **no later than August 10, 2026**.

E. Boilers must be operational from October 31st until May 1st. Chillers must remain operational from May 1st until the last day teachers occupy the building and from first day teachers occupy the building until October 31st.

PART 1.5 – SUMMER WORK 2027 (IF REQUIRED)

A. If additional summer work is required, the Contractor shall assume a construction schedule similar to Summer 2026.

B. Specific dates and constraints for Summer 2027 work will be established by the District in Fall 2026.

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C. All work is to be substantially complete, with beneficial occupancy provided, on or before August 9, 2027. Punch list, close-out and final completion to be within 60 calendar days of substantial completion.

END OF SECTION

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SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements due to unknown conditions or to defer selection of actual materials and equipment and/or installation to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

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 Sections include the following:

1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
2. Division 1 Section "Unit Prices" for procedures for using unit prices.
3. Division 1 Section "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.
4. Divisions 2 through 16 Sections for items of Work covered by allowances.

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.

NOT FOR BIDDING

1.4 SUBMITTALS

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

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

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

1.5 COORDINATION

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

1.6 LUMP-SUM ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials selected by Architect or specified herein and shall include taxes, freight, and delivery to Project site.

B. Related costs for Supervision, field operation and temporary facilities; general overhead; profit; bond premiums; and taxes. costs are part of the Contract Sum.

1.7 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.

1.8 UNUSED MATERIALS

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

1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

NOT FOR BIDDING

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

Allowance No. 1 - $50,000. Include in base bid an allowance for use as directed by the Owner for unforeseen conditions, scope adjustments, or Owner-requested work.

END OF SECTION

NOT FOR BIDDING

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ALLOWANCE AUTHORIZATION

Project:

Architect: **Project No.**

Contractor:

AAA No.: **Initiation Date:**

The Allowance is allocated as follows:

Total original Contract Allowance was:	$
Amount of Contract Allowance Access previously authorized:	$
Adjusted Contract Allowance prior to this authorization is:	$
The amount of available Allowance will Decrease by this Access Authorization:	$
The remaining Contract Allowance, after this Access Authorization will be:	$

Recommended by:
Architect

By (Signature): _____
Date: _____

Accepted by:
Contractor

By (Signature): _____
Date: _____

Approved by:
Owner

By (Signature): _____
Date: _____

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SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 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.
2. Section 014000 "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to 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.

1.4 PROCEDURES

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

B. Measurement and Payment: 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.

NOT FOR BIDDING

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price 1: Replacement of unsuitable wood substrate/sheathing.

1. Description: During roof removal, wood roof sheathing is to be inspected. Any material showing signs of damage that will affect the roof installation or warranty is to be reported to the owner and architect for replacement
2. Unit of Measurement: Square foot of replacement with ¾" preservative-treated plywood, min. 24"X24" repair

B. Unit Price 2: Replacement of unsuitable perimeter wood blocking.

1. Description: During roof removal, perimeter wood blocking and nailers at roof edges are to be inspected. Any material showing signs of damage or deterioration that will affect the roof installation or warranty is to be reported to the owner and architect for replacement.
2. Unit of Measurement: Board foot of replacement with preservative-treated wood blocking.

END OF SECTION

NOT FOR BIDDING

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:
   1. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
   2. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

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

   1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
   2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 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 facsimile of form provided in Project Manual.
   2. Documentation: Provide the following as applicable to show compliance with requirements for substitutions:

      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.

NOT FOR BIDDING

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 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 seven 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 specified product if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 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.

NOT FOR BIDDING

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

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 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. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Requested substitution provides sustainable design characteristics that specified product provided for achieving LEED prerequisites and credits.
c. Substitution request is fully documented and properly submitted.
d. Requested substitution will not adversely affect Contractor's construction schedule.
e. Requested substitution has received necessary approvals of authorities having jurisdiction.
f. Requested substitution is compatible with other portions of the Work.
g. Requested substitution has been coordinated with other portions of the Work.
h. Requested substitution provides specified warranty.
i. 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 unless otherwise indicated.

C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the commencement of the Work. Requests received after that time may be either considered or rejected at discretion of Architect.

1. 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:

a. 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.

NOT FOR BIDDING

b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Requested substitution provides sustainable design characteristics that specified product provided for achieving LEED prerequisites and credits.
e. Substitution request is fully documented and properly submitted.
f. Requested substitution will not adversely affect Contractor's construction schedule.
g. Requested substitution has received necessary approvals of authorities having jurisdiction.
h. Requested substitution is compatible with other portions of the Work.
i. Requested substitution has been coordinated with other portions of the Work.
j. Requested substitution provides specified warranty.
k. 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.

PART 3 - EXECUTION (Not Used)

END OF SECTION

NOT FOR BIDDING

SUBSTITUTION REQUEST

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: [] New product [] 2-5 years old [] 5-10 yrs 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 [] _____

NOT FOR BIDDING

SUBSTITUTION REQUEST

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 01330.
[] Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
[] Substitution rejected - Use specified materials.
[] Substitution Request received too late - Use specified materials.

Signed by: Date:

Additional Comments: [] Contractor [] Subcontractor [] Supplier [] Manufacturer [] A/E [] _____

_____

_____

_____

_____

_____

_____

NOT FOR BIDDING

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Requirements:

1. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 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."

1.4 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 time specified in Proposal Request or 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

NOT FOR BIDDING

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." or forms acceptable to owner and / or Architect.

B. Contractor-Initiated 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 Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. 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" or form acceptable to Owner and / or Architect.

1.5 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Division 01 Section "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 Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

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

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1.7 CONSTRUCTION CHANGE DIRECTIVE

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

1. Construction 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 Construction 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

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SECTION 01 29 00 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:
1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
3. Division 01 sustainable design requirements Section for administrative requirements governing submittal of cost breakdown information required for LEED documentation.

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. Coordinate 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.
b. Submittal schedule.
c. Items required to be indicated as separate activities in Contractor's construction schedule.

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.

NOT FOR BIDDING

3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.
4. Sub-schedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide sub-schedules showing values coordinated with each element.
5. Sub-schedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide sub-schedules showing values coordinated with the scope of each design services contract as described in Division 01 Section "Summary."

B. Format and Content: Use 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 schedule of values consistent with format of AIA Document G703.
3. 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. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

        1) Labor.
        2) Materials.
        3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.

    a. Include separate line items under Contractor and principal subcontracts for LEED documentation and other Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.

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

NOT FOR BIDDING

6. 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. If required, include evidence of insurance.

7. 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.
8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
9. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
10. 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.

11. 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 following the initial 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 Times: Submit Application for Payment to Architect by the 30th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

    1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.

D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

NOT FOR BIDDING

E. Application for Payment Forms: Use forms provided by Owner for Applications for Payment. Sample copies are included in Project Manual.

F. Application for Payment Forms: Use forms acceptable to Architect and Owner for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.

G. 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 for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

H. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

I. Transmittal: Submit three 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.

J. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

NOT FOR BIDDING

2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

K. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

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

L. 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. LEED submittal for project materials cost data.
4. Contractor's construction schedule (preliminary if not final).
5. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
6. Products list (preliminary if not final).
7. LEED action plans.
8. Schedule of unit prices.
9. Submittal schedule (preliminary if not final).
10. List of Contractor's staff assignments.
11. List of Contractor's principal consultants.
12. Copies of building permits.
13. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
14. Initial progress report.
15. Report of preconstruction conference.
16. Certificates of insurance and insurance policies.
17. Performance and payment bonds.
18. Data needed to acquire Owner's insurance.

M. Application for Payment at Substantial Completion: After Architect issues 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.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

NOT FOR BIDDING

N. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. Evidence that claims have been settled.
7. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
8. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

NOT FOR BIDDING

AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:

PROJECT: sample

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.

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Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are in US dollars.
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		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)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00 %	0.00	0.00
	GRAND TOTAL	$0.00	$0.00	$0.00	$0.00	$0.00	0.00 %	$0.00	$0.00

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SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. General coordination procedures.
2. Coordination drawings.
3. Requests for Information (RFIs).
4. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:
1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
4. Division 01 Section "General Commissioning Requirements" for coordinating the Work with Owner's Commissioning Authority.

1.3 DEFINITIONS

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

1.4 INFORMATIONAL SUBMITTALS

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

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

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B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different 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 to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, 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 other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities 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.

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3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after the execution of the Agreement.

1. Conduct the conference to review responsibilities and personnel assignments.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress, including the following:
    a. Tentative construction schedule
    b. Critical work sequencing and long-term lead items.
    c. Designation of key personnel and their duties.
    d. Lines of communication.
    e. Procedures for processing field decisions and Change Orders.
    f. Procedures for RFI’s.
    g. Procedures for testing and inspecting.
    h. Procedures for processing Applications for Payment.
    i. Distribution of the Contract Documents.
    j. Submittal Procedures.
    k. Preparation of Record Documents.

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l. Us of the premises and existing buildings.
m. Work restrictions.
n. Working hours.
o. Owner's occupancy requirements.
p. Responsibility for temporary facilities and controls.
q. Procedures for moisture and mold control.
r. Procedures for disruptions and shutdowns.
s. Construction waste management and recycling.
t. Parking availability.
u. Office, work, and storage areas.
v. Equipment deliveries and priorities.
w. First aid.
x. Security.
y. Progress cleaning.

4. Reporting: Record and distribute minutes of the meeting to each party present and to other parties requiring information.

C. Progress Meetings: Conduct progress meetings at biweekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. 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 meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. 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) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Progress cleaning.
10) Quality and work standards.
11) Status of correction of deficient items.

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12) Field observations.
13) Status of RFIs.
14) Status of proposal requests.
15) Pending changes.
16) Status of Change Orders.
17) Pending claims and disputes.
18) Documentation of information for payment requests.

4. Reporting: Record and distribute minutes of the meeting to each party present and to other parties requiring information.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 01 32 00 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's construction schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Special reports.

B. Related Requirements:

1. Division 01 Section "Multiple Contract Summary" for preparing a combined Contractor's construction schedule.
2. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
3. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

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 Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.

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C. 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.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time belongs to Owner.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF electronic file.

B. Startup construction schedule.

1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.
4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.

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F. Construction Schedule Updating Reports: Submit with Applications for Payment.

G. Daily Construction Reports: Submit at weekly intervals.

H. Material Location Reports: Submit at weekly intervals.

I. Site Condition Reports: Submit at time of discovery of differing conditions.

J. Special Reports: Submit at time of unusual event.

K. Qualification Data: For scheduling consultant.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including work stages.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

1.6 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, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

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PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. 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.

B. Activities: Treat each story or separate area as a separate numbered activity for each main 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. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

a. HVAC / Mechanical Equipment.

3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
4. Startup and Testing Time: Include no fewer than **15** days for startup and testing.
5. 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.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Subcontract awards.
b. Submittals.
c. Purchases.
d. Mockups.
e. Fabrication.
f. Sample testing.
g. Deliveries.
h. Installation.
i. Tests and inspections.
j. Adjusting.
k. Curing.
l. Building flush-out.
m. Startup and placement into final use and operation.

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8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

    a. Structural completion.
    b. Temporary enclosure and space conditioning.
    c. Permanent space enclosure.
    d. Completion of mechanical installation.
    e. Completion of electrical installation.
    f. Substantial Completion.

C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion**.**

D. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Division 01 Section "Payment Procedures" for cost reporting and payment procedures.

E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 STARTUP CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within seven 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 for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

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2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 30 days of date established for commencement of the Work. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.4 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, including presence of rain or snow.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (see special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

20. Material stored prior to previous report and remaining in storage.
21. Material stored prior to previous report and since removed from storage and installed.
22. Material stored following previous report and remaining in storage.

B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

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2.5 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day(s) 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. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.

1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before 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. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

C. Distribution: Distribute copies of approved schedule to Architect**,** Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

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SECTION 01 32 33 - 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. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.
5. Web-based construction photographic documentation.

B. Related Requirements:

1. Division 01 Section "Unit Prices" for procedures for unit prices for extra photographs.
2. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
3. Division 01 Section "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
4. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
5. Division 31 Section "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.
1. Format: High Resolution, in unaltered original files, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
2. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.

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d. Name of Contractor.
e. Date photograph was taken.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
g. Unique sequential identifier keyed to accompanying key plan.

1.4 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.5 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in High Resolution JPG format.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified individual to take construction photographs.

B. 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. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Digital Images: High Resolution JPEG, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

D. Web-Based Image Access: Password-protected access for Project team administered by Contractor, providing current image access and archival image access by date and time, with images downloadable to viewer's device.

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E. Periodic Construction Photographs: Take photographs as necessary to document the construction progress.

F. Architect-Directed Construction Photographs: From time to time, Architect will instruct photographer about number and frequency of 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.

G. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents. Architect will inform photographer of desired vantage points.

H. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

    a. Special events planned at Project site.
    b. Immediate follow-up when on-site events result in construction damage or losses.
    c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    d. Substantial Completion of a major phase or component of the Work.
    e. Extra record photographs at time of final acceptance.
    f. Owner's request for special publicity photographs.

END OF SECTION

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SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
5. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

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1.4 ACTION SUBMITTALS

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

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.

1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.

    a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    b. Digital Drawing Software Program: The Contract Drawings are available in Autocad, Release 2010.
    c. Contractor shall execute a data licensing agreement in the form of Agreement included in Project Manual.
    d. Digital data drawing files will be made available via email(s) to the contractor.
    e. The following digital data files will by furnished for each appropriate discipline:

        1) Floor plans.
        2) Reflected ceiling plans.
        3) MEP plans.

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B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

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

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on 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 10 working 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 10 working 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 15 working days for initial review of each submittal.

5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 10 working days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Construction Manager.
    e. Name of Contractor.
    f. Name of subcontractor.
    g. Name of supplier.
    h. Name of manufacturer.

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i. 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., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

j. Number and title of appropriate Specification Section.
k. Drawing number and detail references, as appropriate.
l. Location(s) where product is to be installed, as appropriate.
m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.

a. Transmittal Form for Paper Submittals: Use AIA Document G810.
b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:

1) Project name.
2) Date.
3) Destination (To:).
4) Source (From:).
5) Name and address of Architect.
6) Name of Construction Manager.
7) Name of Contractor.
8) Name of firm or entity that prepared submittal.
9) Names of subcontractor, manufacturer, and supplier.
10) Category and type of submittal.
11) Submittal purpose and description.
12) Specification Section number and title.
13) Specification paragraph number or drawing designation and generic name for each of multiple items.
14) Drawing number and detail references, as appropriate.
15) Indication of full or partial submittal.
16) Transmittal number**,** numbered consecutively.
17) Submittal and transmittal distribution record.
18) Remarks.
19) Signature of transmitter.

E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

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1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.

    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software acceptable to Owner**,** containing the following information:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name of Construction Manager.
    e. Name of Contractor.
    f. Name of firm or entity that prepared submittal.
    g. Names of subcontractor, manufacturer, and supplier.
    h. Category and type of submittal.
    i. Submittal purpose and description.
    j. Specification Section number and title.
    k. Specification paragraph number or drawing designation and generic name for each of multiple items.
    l. Drawing number and detail references, as appropriate.
    m. Location(s) where product is to be installed, as appropriate.
    n. Related physical samples submitted directly.
    o. Indication of full or partial submittal.
    p. Transmittal number**,** numbered consecutively.
    q. Submittal and transmittal distribution record.
    r. Other necessary identification.
    s. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:

    a. Project name.
    b. Number and title of appropriate Specification Section.
    c. Manufacturer name.
    d. Product name.

F. Options: Identify options requiring selection by Architect.

G. Deviations and Additional Information: 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 identification information as related submittal.

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H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Post electronic submittals as PDF electronic files directly to Architect's FTP site specifically established for Project.

    a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Submit electronic submittals via email as PDF electronic files.

    a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

3. Action Submittals: Submit four paper copies of each submittal unless otherwise indicated. Architect, will return two copies.
4. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

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 published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

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a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.
c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:

a. PDF electronic file.

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**,** unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
3. Submit Shop Drawings in the following format:

a. PDF electronic file.

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:

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a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of applicable Specification Section.
e. Specification paragraph number and generic name of each item.

3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for 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 three sets of Samples. Architect will retain two 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 three sets of paired units that show approximate limits of variations.

E. Product Schedule: 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 indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

    a. PDF electronic file.

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F. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

G. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

H. Application for Payment and Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

K. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

L. LEED Submittals: Comply with requirements specified in Division 01 sustainable design requirements Section.

M. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

N. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

O. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

P. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

Q. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

R. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

S. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

T. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation

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of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

U. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

V. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

W. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

X. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

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1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: 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. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, 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. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

1. Not Reviewed.
2. Approved as Submitted.
3. Approved as Noted.
4. Revise and Resubmit.
5. Rejected.

B. 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.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the Architect without action.

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RED CLAY CONSOLIDATED SCHOOL DISTRICT

SECTION 01 35 13 - CONTRACTOR EMPLOYEE BACKGROUND CHECKS AND SCHOOL SECURITY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. This Section establishes the requirements for registering, screening, and obtaining District authorization for contractor and subcontractor personnel assigned to perform Work on District property.
B. The Contractor shall administer and coordinate compliance for its own employees and employees of subcontractors and lower-tier subcontractors. The Contractor shall not permit an individual to enter the site to perform Work until the District has confirmed that individual is approved for access.
C. Employee clearance requirements apply to personnel assigned to perform on-site Work. Suppliers, delivery personnel, and short-term visitors shall comply with the visitor check-in and identification requirements in Paragraph 3.2.

1.2 RELATED REQUIREMENTS

A. Section 00 21 13 – Instructions to Bidders; Section 01 00 00 – General Requirements; Section 01 10 00 – Summary; Section 01 35 23 – Safety Program. Coordinate references and eliminate duplicative or inconsistent provisions.

1.3 REQUIRED CLEARANCES AND DISTRICT APPROVAL

A. Prior to performing on-site Work, each covered individual shall complete: (1) entry into the District vendor portal; (2) Delaware Child Protection Registry (CPR) clearance request; and (3) IdentoGO fingerprint-based criminal background check registration and processing.
B. Completion of registration or an appointment alone shall not constitute approval to enter the site. The District shall determine and communicate access approval. The Contractor shall allow adequate lead time for clearance processing.
C. Screening decisions and confidential results are administered by District Human Resources. The Contractor shall not request that employees transmit their CPR or criminal-history results to the Architect or construction project staff. Results are sent directly to the District through the applicable State of Delaware process, as described by District HR.

1.4 EMPLOYEE REGISTRATION PROCEDURE

A. Contractor shall enter the name of each employee requiring clearance into the District vendor portal: https://forms.gle/1zPMWu311LiaNnJg9. Coordinate the same process for all subcontractor and lower-tier subcontractor employees.
B. Maintain an up-to-date roster of personnel proposed for on-site Work and coordinate with the District’s designated representative to confirm which individuals are approved. Do not include confidential criminal-history or CPR results on the site roster.

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1.5 CHILD PROTECTION REGISTRY

A. Each covered individual shall follow the Delaware Child Protection Registry Consent Form and portal instructions in Attachment 1. The employee may complete the process individually, or the Contractor may elect to register and complete the process on behalf of employees in accordance with District HR instructions. The Contractor is not required to register its company solely for this purpose.
B. CPR portal: https://childprotectionregistry.delaware.gov/. The consent form identifies the requesting agency as Red Clay Consolidated School District, Department of Human Resources, Agency ID 352, Agency Contact ID 83134.
C. The CPR instructions require a completed consent form, portal submission and applicable payment. A request must be within 90 days of the signature date to be processed. The attached instructions advise allowing 10 business days for results; this is guidance, not a guaranteed completion time.
D. The Contractor shall ensure the CPR request is configured so the District receives or can access the results as directed by District HR. The individual procedures describe agency-sharing fields; employees shall follow the attached directions and current HR instructions.

1.6 FINGERPRINT-BASED CRIMINAL BACKGROUND CHECK

A. Each covered employee shall register for an IdentoGO appointment using https://uenroll.identogo.com and the District-specific service code 27RY95 (Red Clay District – Public School Employment), as shown in Attachment 2. The service code shall be used only for the District-designated purpose.
B. Employees shall bring a valid, unexpired photo identification document accepted by IdentoGO (see Attachment 2). Where the registration name differs from identification, bring applicable original or certified name-linking documentation. Employees without Internet access may schedule by calling 866-761-8069.

1.7 SITE ACCESS AND PERSONNEL CHANGES

A. Contractor shall verify District authorization before assigning personnel to the site. Replace or remove any individual not authorized by the District; a pending clearance is not authorization.
B. Submit newly assigned and replacement personnel through the same process before they begin on-site Work. Coordinate employee badges, identification and entry procedures with the District, and maintain the approved-personnel list required by Section 01 10 00.
C. All personnel shall comply with the District’s security, identification, and conduct rules while on school property. The District may deny or revoke site access consistent with applicable requirements.

1.8 COSTS AND COORDINATION

A. The Contractor and/or its Subcontractors shall be responsible for payment of all fees and costs associated with the employee background check and clearance requirements of this Section for their respective employees, including employees of lower-tier subcontractors. Such costs include, without limitation, Delaware Child Protection Registry request fees, IdentoGO fingerprinting and criminal background check fees, registration or processing fees, and related administrative and coordination expenses. All such costs shall be included in the Contract Sum. No additional compensation shall be due from the Owner for compliance with these requirements. The Contractor shall remain responsible for ensuring compliance with this Section by all Subcontractors and lower-tier Subcontractors.

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B. Direct procedural questions to the District's designated Human Resources contact through the Owner. The Architect shall not adjudicate clearance eligibility.

PART 2 – PRODUCTS

2.1 NOT USED

PART 3 – EXECUTION

3.1 IMPLEMENTATION

A. Before mobilization, identify the Contractor representative responsible for employee screening coordination and provide the District with the proposed personnel roster. Submit additions sufficiently in advance of the intended start date.
B. Confirm site access status with the District before allowing personnel to report for Work. Enforce all District-issued identification and access instructions throughout construction.
C. Failure to obtain clearance or timely approval shall not, by itself, relieve the Contractor of its obligations under the Contract Documents.

3.2 SUPPLIERS, DELIVERY PERSONNEL, AND SHORT-TERM VISITORS

A. Suppliers, delivery personnel, and short-term visitors entering school property shall report to the school's main office upon arrival, complete the District's visitor check-in procedures, and obtain a visitor identification badge.
B. Visitor identification badges shall be prominently displayed at all times while on school property.
C. Suppliers, delivery personnel, and short-term visitors shall comply with all applicable District security and site access requirements.
D. The Contractor shall advise its suppliers, delivery personnel, and short-term visitors of these requirements before their arrival.

Attachment 1 – Delaware Child Protection Registry Consent Form and Individual Procedures (2-page HR attachment).
Attachment 2 – Red Clay District IdentoGO Fingerprint Service Code Form (1-page HR attachment).

END OF SECTION

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ATTACHMENT 1 – DELAWARE CHILD PROTECTION REGISTRY

DELAWARE CHILD PROTECTION REGISTRY CONSENT FORM
Web Portal

Request must be within 90 days of signature date in order to be processed

PART I - APPLICANT INFORMATION

Name (Last*, First*, Middle):

Other Name(s) used:

Social Security #:

Date of Birth (mm/dd/yyyy)*:

Gender*:

Race:

Ethnicity: (Hispanic/Non-Hispanic)

Address (Street, City, State, Zip):

Are you on the Delaware Child Protection Registry for any substantiated cases of child abuse/neglect? Yes ☐ No ☐

If yes, explain:

I hereby authorize The Delaware Department of Services for Children, Youth and Their Families to provide the below named requester with all substantiated cases of child abuse or neglect concerning me that are active on the Delaware Child Protection Registry. I further release the Delaware Department of Services for Children, Youth and Their Families, its officers and employees from any and all claims arising out of or in any way connected to the release or dissemination of any information concerning me.

SIGN

Signature:

Date:

Parent/Guardian Signature (If applicant is under the age of 18)

PART II - REQUESTER INFORMATION

Check one option below and complete required information*:

1. ☐ Agency Request – Agency Name*: **Red Clay Consolidated School District; Department of Human Resources Agency ID# 352; Agency Contact# 83134**

2. ☐ Individual Request - Self

* Mandatory

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Individual Procedures - Delaware Child Protection Registry (CPR) Request Web Portal

Delaware child abuse and neglect checks must be requested through the Department of Services for Children, Youth and Their Families (DSCYF), Child Protection Registry Request Web Portal.

Individuals need to download and complete the consent form found on the CPR Portal homepage, then register on the CPR Portal to submit a CPR request and obtain their completed CPR results. You should only register one time unless advised otherwise by DSCYF staff.

Registration -To register on the CPR Portal, go to childprotectionregistry.delaware.gov/

1. Click **New Individual Registration**. The INDIVIDUAL REGISTRATION FORM will appear:
2. Complete all required * fields.
3. Read the conditions for requesting access to the Delaware Child Protection Registry Portal. When you accept and agree to the conditions, click the box beside I ACCEPT AND AGREE.
4. Click **Register**. If all required information is completed, the screen should turn white, and then a notice will appear to **Check your email regarding the status of your registration**.
5. Check your email for a **Welcome to the Delaware Child Protection Registry Portal** notice. It will contain your Agency ID number and User Name. If this email is not received within 5 days of registration, call the Criminal History Unit (CHU) at 302-892-4525. You will need to provide your assigned ID number and the date registered.
6. Read the entire email, click on large link.
7. Enter new password, confirm password, click **Change Password**. Keep your User Name and Password for future CPR Portal access.
8. Click **CLICK HERE TO CREATE NEW CPR REQUEST**. Note: If you are sharing your results with an agency, the Requesting Agency ID number and the Requesting Agency Contact ID number are required for each agency. The Agency Contact can provide this information. Follow the procedures below to share your results.
9. Complete all required* fields (additional fields can be completed for a more extensive search of the child protection registry), click **CONFIRM**. Request is in "PENDING" Status.
10. Follow instructions on page for **How to upload completed consent form and complete submission**. In **Notes and Attachment** section, click **Upload Files** to upload the completed CPR consent form.
11. Message across middle of screen "Upload Files", click **Done**.
12. Message at top of page - **1 file was added to the Child Protection Registry**.
13. Top right side of page, click **Review and Save**.
14. Click **Save**.
15. Message at top of page - **CPR request successfully submitted**. Request is under "CONTINGENT PAYMENT REQUESTS", needing payment to submit.
16. To view CPR request status or make CPR request payment, click at top of page **Click here to create an additional CPR Request, view CPR requests status, make CPR request payment**.

Optional Procedures for An Individual Sharing CPR Results with An Agency

1. Individual completes **New Individual Registration** by following the **Individual Procedures** above.
2. Individual obtains Agency ID number and Agency Contact ID number from the agency that they are sharing their results with and enters this information in the appropriate fields at the bottom of the **Create New CPR Request** page. By entering this information, you are allowing the Agency Contact to view and print the results of the CPR request. An individual can share results with up to five agencies by adding the Requesting Agency ID and Requesting Agency Contact ID for each agency when making a **New CPR Request**. This must be done prior to clicking Save and submitting payment. If this information is not entered on the **Create New CPR Request** page, the individual will be given a final opportunity to enter this information on the **Review and Save** page. This information cannot be entered once the request is saved.
3. On the CPR consent form, check box 3, "Individual Request – Share Results with Requesting Agency," and then list below the name of each agency you are sharing the results with.

Payment for CPR Request

1. Click "CONTINGENT PAYMENT REQUESTS" tab.
2. Under CPR Record Name column, click box to left of name. A check mark will appear in the box.
3. Click Proceed to Payment.
4. Complete all required * fields, click Continue.
5. Click Confirm, Modify or Exit. Clicking confirm will attempt to make payment. After payment validation, request moves under "SUBMITTED REQUESTS" tab.

CPR Results

1. Allow 10 business days to receive a **Child Protection Registry Notification** email informing you that CPR results are available on the CPR Portal. Click email link to login CPR Portal.
2. Click the "COMPLETED REQUESTS" tab.
3. In the CPR Letter column, click download to view and print results letter. Results will be available on the CPR Portal for six months.

Questions may be directed to: DSCYF.CHU.Portal@delaware.gov

U:\DMSS\CHU\CPR\Web Portal\Procedures\Individual Procedures - Delaware Child Protection Registry (CPR) Web Portal – 8-10-2021

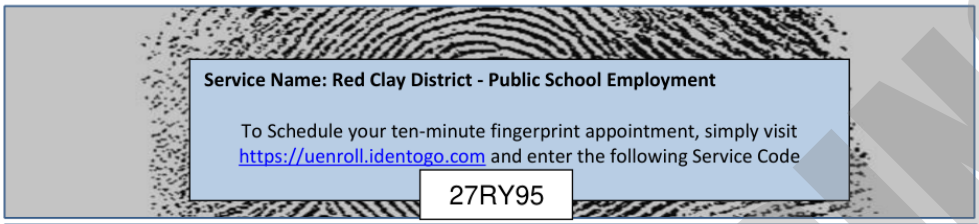
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ATTACHMENT 2 – IDENTOGO FINGERPRINT SERVICE CODE FORM

Red Clay District - USE ONLY

IdentoGO

Fingerprint Service Code Form



Service Name: Red Clay District - Public School Employment

To Schedule your ten-minute fingerprint appointment, simply visit https://uenroll.identogo.com and enter the following Service Code

27RY95

Service Code is unique to your hiring/licensing agency. ***Do not use this code for another purpose.***

Please bring one of the identification documents from the list below to your enrollment appointment. Identification must be valid, not expired, and contain a photograph of the applicant.

- Driver's License issued by a State or outlying possession of the U.S.
- Driver's License PERMIT issued by a State or outlying possession of the U.S.
- Driver's License PAPER/TEMPORARY issued by a State or outlying possession of the U.S.
- Enhanced Driver's License (EDL)
- Commercial Driver's License issued by a State or outlying possession of the U.S.
- Commercial Driver's License PERMIT issued by a State or outlying possession of the U.S
- ID card issued by a federal, state, or local government agency or by a Territory of the United States
- Enhanced Tribal Identification Card (for federally recognized U.S. tribes)
- Department of Defense Common Access Card
- Uniformed Services Identification Card (Form DD-1172-2)
- U.S. Military Identification Card
- U.S. Coastguard Merchant Mariner Card
- Military Dependent's Identification Card
- U.S. Passport
- Foreign passport
- Permanent Resident Card or Alien Registration Receipt Card (Form I-551)
- Employment Authorization Card/Document (I-766) that contains a photograph
- Canadian Driver's License
- Foreign Driver's License (Mexico and Canada Only)
- U.S. Visa issued by the U.S. Department of Consular Affairs for travel to or within, or residence within, the United States

Name Linking Documents (only needed if name on identification does not match name in registration):

- Original or Certified Copy of a Court Ordered Name Change Document (to include marriage certificates and divorce decrees)

Don't have access to the Internet? You can still schedule an appointment by calling **866.761.8069.**

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SECTION 01 35 23 - SAFETY PROGRAM

1. GENERAL

1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety activities and programs in connection with the Work.

1.2 Contractor shall be responsible for the safety of its personnel.

1.3 Hard hats and safety glasses must be worn by all personnel on the jobsite, except in contractor's administrative office/trailer. All equipment must comply with OSHA standards. All job site personnel shall wear long pants, shirts (no tank tops) and work boots.

2. SAFETY PROGRAM

2.1 Prior to commencing the Work, the Contractor shall submit to the (1) electronic copy and (1) bound copy of its safety program and one (1) copy of MSDS information in a 2" ringed notebook. One paper copy of the safety program and MSDS will be retained by the Construction Manager in the field office.

2.2 The safety program shall outline those hazards peculiar to the Contractor's Work, and the steps to be taken to eliminate or reduce the risk of injury or loss due to those hazards**. The program shall be site specific.** Contractor shall implement and enforce its safety program, which is in accordance with all OSHA, Federal, State and local laws.

2.3 Contractor shall designate a qualified Safety Supervisor to implement the safety program. Unless otherwise approved by the Owner, the Safety Supervisor shall be the Contractor's field Superintendent/Foremen.

2.4 Contractor shall hold weekly safety toolbox talks with all of its employees. The Contractor shall designate a responsible, capable person to conduct these meetings.

3. SUBSTANCE ABUSE POLICY STATEMENT

The Owner is committed to providing a safe work site environment for its employees and Contractors' employees. The Owner does not condone or permit employees and Contractors' employees to use or be under the influence of drugs or alcohol while they are on the work site. The Policy is as follows:

3.1 It is a violation Contractors' employees to use, possess, sell, trade, or otherwise engage in the use of illegal drugs and alcohol.

3.2 It is a violation for Contractors' employees to report to work while influenced by illegal drugs or alcohol.

3.3. It is a violation for Contractors' employees to use prescription drugs illegally (i.e. to use prescription drugs that have not been legally obtained) and to use prescription drugs in a manner other than the prescribed intentions.

3.4 Contractors' employees who are taking medication, which is prescribed by their physician, are expected to discuss potential side effects with their prescribing physician, as it relates to the work requirements.

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Violations of this policy will require disciplinary action. If any Contractors' employees are observed or suspected of being influenced by drugs or alcohol, they will be instructed to stop work and may be required to leave the work site.

4. EXECUTION

4.1 Contractor shall comply with all applicable federal, state and local laws, regulations and orders relating to occupational safety and health, and related procedures, and shall, to the extent permitted by law, indemnify and hold Owner and Architect, and their respective directors, officers, or agents and employees, harmless from any and all liability, public or private, penalties, contractual or otherwise, losses, damages, costs, attorney's fees, expenses, causes of action, claims or judgments resulting from a claim filed by anyone in connection with the aforementioned acts, or any rule, regulation or order promulgated thereunder, arising out of the Contractor's Work, this Agreement or any subcontract executed in prosecution of the Work. Contractor further agrees in the event of a claim of violation of any such laws, regulations, orders or procedures arising out of or in any way connected with the performance of this agreement, Owner may immediately take whatever action is deemed necessary by Owner and/or Architect to remedy the claim or violation. Any and all costs or expenses paid or incurred by Owner and/or Architect in taking such action shall be borne by Contractor, and may be deducted from any payments due Contractor.

4.2 The Contractor agrees to (1) take all necessary steps to promote safety and health on the job site; (2) cooperate with Owner and/or Architect in preventing and eliminating safety and health hazards: (3) train, instruct and provide adequate supervision to ensure that its employees are aware of, and comply with, applicable Federal and State safety and health laws, standards, regulations and rules, safe healthful work practices and all applicable safety rules, regulations and work practices and procedures (4) not create any hazards or expose any of its employees, employees of the Owner and/or Architect or employees of Contractors to any hazards; and (5) where the Contractor is aware of the existence of a hazard not within its control, notify the Owner/ Architect of the hazard as well as warn exposed persons to avoid the hazard.

4.3 The Contractor's Superintendent or Safety Supervisor shall immediately, verbally report, and promptly thereafter confirm in writing to the Owner and Architect any unsafe conditions or practices that are observed, or violations of job safety which are not within the Contractor's control.

4.4 Contractors shall immediately, verbally report, and promptly thereafter confirm in writing, to the Owner and Architect any unsafe practices or conditions that are observed which are not under the Contractor's control.

4.5 The Contractor's Superintendent or Safety Supervisor shall insure that adequate first aid supplies are available, and that personnel are qualified to administer first aid/CPR, as required by State and/or Federal regulations.

4.6 Contractor shall promptly notify Owner and Architect of any personal injury requiring medical treatment of any of the Contractor's employees at the Project site; or of significant damage to property arising in connection with Contractor's performance, as promptly as possible after the occurrence of such injury or damage. Within forty-eight hours of such occurrence, Contractor shall furnish to Owner and Architect a complete written report of such injury or damage.

NOT FOR BIDDING

4.7 Contractor certifies that the forgoing terms shall be made applicable to all Contractors' suppliers, materialmen or anyone furnishing labor and/or materials to the site.

4.8 The Contractor shall continue to educate his job Safety Supervisor or Superintendent of their responsibilities, which shall include:

1. Instructing workers and subcontractors under its supervision in safe work practices and work methods at the time they are given work assignments.

2. Ensuring that its workers and subcontractors have and use the proper protective equipment and suitable tools for the job.

3. Continuously checking to see that no unsafe practices or conditions are allowed to exist on any part of his job.

4. Acquainting its workers and subcontractors with all applicable safety requirements and seeing that they are enforced.

5. Setting a good example for his workers.

6. Making a complete investigation of accidents to determine facts necessary to take corrective action.

7. Holding weekly "tool box" safety meetings with his men to:

   a. Discuss observed unsafe work practices or conditions including a review of current safety report.

   b. Review the accident experience of his crew and discuss correction of accident causes.

   c. Encourage safety suggestions from his men.

8. Seeing that prompt medical treatment is administered to an injured employee.

9. Correcting or reporting immediately to job superintendent any observed unsafe conditions, practices or violations of job security.

10. Making all reports required by these Contract Documents in a full and timely fashion.

5. SAFETY MEETINGS

5.1 The Contractor's Project Manager or Superintendent shall attend weekly or biweekly supervisory job meetings. The first topic of these meetings will be job site safety. The weekly safety reports will be reviewed and violations must be corrected immediately. Contractors will be encouraged to participate in the on-going jobsite safety.

6. TOOL BOX SAFETY MEETINGS

6.1 The Contractor shall schedule weekly "tool box" safety sessions to be held by his job safety supervisor or superintendent for all of his employees.

6.2 A member of the Contractor's management staff shall periodically attend "tool box" safety sessions to evaluate their effectiveness and offer any appropriate suggestions for

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improvement.

7. REPORTS

7.1 Contractors shall report all accidents or injuries on a timely basis in accordance with all applicable regulations.

7.2 Contractors shall promptly complete an accident investigation report of all accidents.

7.3 A record of all "tool box" safety sessions shall be made.

8. FALL PROTECTION PROCEDURES

8.1 Contractor is responsible, in accordance with federal, state, local laws and regulations including OSHA. to provide and enforce their own site specific fall protection program and equipment. The following fall protection procedures shall be enforced by all Contractors as a minimum standard.

All workers on walking/working surfaces with unprotected sides or edges six feet (6') or higher above the next lower level must be protected from falls by the use of guardrail systems, net systems, fall arrest systems or control access zone programs. It is intended that when fall protection is required, it is required 100% of the time. All contractors are reminded that relevant industry regulations require that contractors comply with the following standards.

1. Workers constructing or working near leading edges must be protected.

2. Workers on the face of formwork or reinforcing steel must be protected at a height of 6 feet (6') or greater.

3. Scaffolds shall be guarded at 6 feet (6') above next lower level.

4. Brick layers performing overhand bricklaying and related work six feet (6') or higher above lower levels must be protected from falls.

5. Roofers must comply with OSHA standards for roof work.

6. The Contractor's controlled access zone plan shall be included in their site-specific safety program and shall be submitted prior to the start of work. Contractors are responsible for assuring programs are OSHA compliant.

7. Guidelines for Residential Construction or any interpretations will not be accepted in lieu of 1926 Standards.

8.2 Contractor shall provide its own fall protection. Fall protection may be provided by guardrail systems, net systems, or personal fall arrest systems. All fall protection systems must comply with OSHA standards.

8.3 Stepladders, exposed to shafts or edges of the building, greater than six feet (6') above the next lower level, must be tied off or otherwise secured. Employee must wear fall protection, i.e. harness/lanyard.

8.4 The Safety Cable System shall not be altered or removed without a written request submitted

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to the Project Manager with a copy to the Field Manager. It shall be the responsibility of each and every Contractor that is removing or altering the Safety Cable System to maintain the fall protection safety provided by the safety cable and not leave the area unprotected. Each and every Contractor shall be responsible to re-install the Safety Cable System immediately after work is completed. Each and every Contractor shall be responsible to re-install the Safety Cable System in accordance to OSHA standards.

8.5 Fall protection will be enforced for Structural Steel Erectors.

1. As for a Contractor engaged in structural steel erection, the Contractor is specifically advised that structural steel erectors shall comply with all protection requirements for all work at a height of six feet (6') or greater above the next lower level, 100 percent of the time, by any of the following means.

   a. Standard guardrail system.

   b. Personal Fall Arrest System (PFAS) – full body harness with shock absorbing lanyard. Maximum free fall distance permitted, with lanyard and lanyard attachment shall not exceed six feet (6'). Anchor point must be capable of supporting five thousand pounds. Perimeter guard cables or alignment cables may not be used for anchor points.

   c. Access to work area shall be provided by ladders. There shall be sufficient number of ladders available to reduce the amount of "beam walking." When it is absolutely necessary to traverse a beam, 100% fall protection must be utilized.

   d. Steel erection Contractors must, at all times, be able to certify in writing that each of his employees has been properly trained in both OSHA fall protection standards and the Contractor's site specific project fall protection procedures.

   e. Prior to the erection of the steel, the Contractor shall meet with the Project Manager and Safety Representatives to review and document site specific procedures.

END OF SECTION

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SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

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

C. Related Requirements:
1. Divisions 02 through 33 Sections for specific test and inspection requirements.

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 constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified

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installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to 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.

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1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data : For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.

D. Testing Agency Qualifications: 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.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

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D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. 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 reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical 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.

NOT FOR BIDDING

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.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

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.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

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1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. 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 329; 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.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and Commissioning Authority, 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.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

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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. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain 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.

6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed unless otherwise indicated.

L. Integrated Exterior Mockups: Construct integrated exterior mockup according to approved Shop Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

M. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections in Divisions 02 through 33.

1.9 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. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. 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.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

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4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/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.

F. 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.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.

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7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

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.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: 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 reviews 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. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

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B. Maintain log at Project site. Post changes and revisions 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 or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

NOT FOR BIDDING

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

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B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

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

AA	Aluminum Association, Inc. (The) www.aluminum.org	(703) 358-2960
AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.transportation.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists www.aatcc.org	(919) 549-8141
ABAA	Air Barrier Association of America www.airbarrier.org	(866) 956-5888
ABMA	American Bearing Manufacturers Association www.abma-dc.org	(202) 367-1155
ACI	American Concrete Institute www.concrete.org	(248) 848-3700

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ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association (Now part of CPA)	
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)	
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts, Inc. www.aosaseed.com	(405) 780-7372

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APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA EWS	APA - The Engineered Wood Association; Engineered Wood Systems (See APA - The Engineered Wood Association)	
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)	
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWCI	Association of the Wall and Ceiling Industry www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (Now WCMA)	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWPA	American Wood Protection Association	(205) 733-4077

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	(Formerly: American Wood Preservers' Association) www.awpa.com	
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BICSI	BICSI, Inc. www.bicsi.org	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee www.bissc.org	(866) 342-4772
BWF	Badminton World Federation (Formerly: IBF - International Badminton Federation) www.internationalbadminton.org	6-03-9283 7155
CCC	Carpet Cushion Council www.carpetcushion.org	(610) 527-3880
CDA	Copper Development Association www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(613) 230-9263
CEA	Consumer Electronics Association www.ce.org	(866) 858-1555 (703) 907-7600
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462

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CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CRRC	Cool Roof Rating Council www.coolroofs.org	(866) 465-2523 (510) 485-7175
CPA	Composite Panel Association www.pbmdf.com	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet and Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSA	Canadian Standards Association	(800) 463-6727 (416) 747-4000
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Cast Stone Institute www.caststone.org	(717) 272-3744
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association	(800) 294-3462

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	www.eima.com	(770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee www.ejdc.org	(703) 295-5000
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association (Electrostatic Discharge Association) www.esda.org	(315) 339-6937
ETL SEMCO	Intertek ETL SEMCO (Formerly: ITS - Intertek Testing Service NA) www.intertek.com	(800) 967-5352
FIBA	Federation Internationale de Basketball (The International Basketball Federation) www.fiba.com	41 22 545 00 00
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation) www.fivb.ch	41 21 345 35 35
FM Approvals	FM Approvals LLC www.fmglobal.com	(781) 762-4300
FM Global	FM Global (Formerly: FMG - FM Global) www.fmglobal.com	(401) 275-3000
FMRC	Factory Mutual Research (Now FM Global)	
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. www.floridaroof.com	(407) 671-3772
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council www.fsc.org	49 228 367 66 0
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GRI	(Part of GSI)	

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GS	Green Seal www.greenseal.org	(202) 872-6400
GSI	Geosynthetic Institute www.geosynthetic-institute.org	(610) 522-8440
HI	Hydraulic Institute www.pumps.org	(973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (Now CSA International)	
IBF	International Badminton Federation (Now BWF)	
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IEST	Institute of Environmental Sciences and Technology www.iest.org	(847) 255-1561
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510

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ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
ISO	International Organization for Standardization www.iso.ch	41 22 749 01 11
	Available from ANSI www.ansi.org	(202) 293-8020
ISSFA	International Solid Surface Fabricators Association www.issfa.net	(877) 464-7732 (702) 567-8150
ITS	Intertek Testing Service NA (Now ETL SEMCO)	
ITU	International Telecommunication Union www.itu.int/home	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association (Now part of CPA)	
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association, Inc. www.maplefloor.org	(888) 480-9138
MFMA	Metal Framing Manufacturers Association, Inc. www.metalframingmfg.org	(312) 644-6610
MH	Material Handling (Now MHIA)	
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937 (604) 298-7578
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.	(703) 281-6613

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	www.mss-hq.com	
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6591
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(800) 797-6623 (281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAGWS	National Association for Girls and Women in Sport www.aahperd.org/nagws/	(800) 213-7193, ext. 453
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCAA	National Collegiate Athletic Association (The) www.ncaa.org	(317) 917-6222
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(262) 248-9094
NCTA	National Cable & Telecommunications Association www.ncta.com	(202) 775-2300
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (269) 488-6382
NFHS	National Federation of State High School Associations www.nfhs.org	(317) 972-6900

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NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association) www.nofma.com	(901) 526-5016
NOMMA	National Ornamental & Miscellaneous Metals Association www.nomma.org	(888) 516-8585
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736 (540) 751-0930
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)	
NWWDA	National Wood Window and Door Association (Now WDMA)	
OPL	Omega Point Laboratories, Inc. (Now ITS)	
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300

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PDCA	Painting & Decorating Contractors of America www.pdca.com	(800) 332-7322 (314) 514-7322
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute http://pgi-tp.ce.uiuc.edu	(217) 333-3929
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America) www.landcarenetwork.org	(800) 395-2522 (703) 736-9666
PTI	Post-Tensioning Institute www.post-tensioning.org	(602) 870-7540
RCSC	Research Council on Structural Connections www.boltcouncil.org	
RFCI	Resilient Floor Covering Institute www.rfci.com	(301) 340-8580
RIS	Redwood Inspection Service www.redwoodinspection.com	(888) 225-7339 (415) 382-0662
SAE	SAE International www.sae.org	(877) 606-7323 (724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(877) 294-5424 (516) 294-5424
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)	
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIA	Security Industry Association www.siaonline.org	(866) 817-8888 (703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)	

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SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association www.smacentral.org	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers www.smpte.org	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPRI	Single Ply Roofing Industry www.spri.org	(781) 647-7026
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWRI	Sealant, Waterproofing, & Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. (Now TCNA)	
TCNA	Tile Council of North America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TMS	The Masonry Society	(303) 939-9700

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	www.masonrysociety.org	
TPI	Truss Plate Institute, Inc. www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrasssod.org	(800) 405-8873 (847) 649-5555
TRI	Tile Roofing Institute www.tileroofing.org	(312) 670-4177
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USAV	USA Volleyball www.usavolleyball.org	(888) 786-5539 (719) 228-6800
USGBC	U.S. Green Building Council www.usgbc.org	(800) 795-1747
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association www.wcmanet.org	(212) 297-2122
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 297-2109
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WIC	Woodwork Institute of California (Now WI)	

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WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 570-5441
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

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

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

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers www.usace.army.mil	(202) 761-0011
CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce www.commerce.gov	(202) 482-2000
DOD	Department of Defense http://.dodssp.daps.dla.mil	(215) 697-6257
DOE	Department of Energy www.energy.gov	(202) 586-9220
EPA	Environmental Protection Agency www.epa.gov	(202) 272-0167
FAA	Federal Aviation Administration	(866) 835-5322

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	www.faa.gov	
FCC	Federal Communications Commission www.fcc.gov	(888) 225-5322
FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(800) 488-3111
HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-4000
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999
PBS	Public Buildings Service (See GSA)	
PHS	Office of Public Health and Science www.osophs.dhhs.gov/ophs	(202) 690-7694
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department www.state.gov	(202) 647-4000
TRB	Transportation Research Board http://gulliver.trb.org	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

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

NOT FOR BIDDING

ADAAG	Americans with Disabilities Act (ADA)	(800) 872-2253
	Architectural Barriers Act (ABA)	(202) 272-0080
	Accessibility Guidelines for Buildings and Facilities Available from U.S. Access Board www.access-board.gov	
CFR	Code of Federal Regulations	(866) 512-1800
	Available from Government Printing Office	(202) 512-1800
	www.gpoaccess.gov/cfr/index.html	
DOD	Department of Defense Military Specifications and Standards	(215) 697-2664
	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
DSCC	Defense Supply Center Columbus (See FS)	
FED-STD	Federal Standard (See FS)	
FS	Federal Specification	(215) 697-2664
	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
	Available from Defense Standardization Program www.dps.dla.mil	
	Available from General Services Administration	(202) 619-8925
	www.gsa.gov	
	Available from National Institute of Building Sciences	(202) 289-7800
	www.wbdg.org/ccb	
FTMS	Federal Test Method Standard (See FS)	
MIL	(See MILSPEC)	
MIL-STD	(See MILSPEC)	
MILSPEC	Military Specification and Standards	(215) 697-2664

NOT FOR BIDDING

	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
UFAS	Uniform Federal Accessibility Standards	(800) 872-2253
	Available from Access Board	(202) 272-0080
	www.access-board.gov	

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

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation www.dca.ca.gov/bhfti	(800) 952-5210 (916) 574-2041
CCR	California Code of Regulations www.calregs.com	(916) 323-6815
CPUC	California Public Utilities Commission www.cpuc.ca.gov	(415) 703-2782
TFS	Texas Forest Service Forest Resource Development http://txforestservice.tamu.edu	(979) 458-6650

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

NOT FOR BIDDING

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 01 10 00 Summary for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

A. General: Charges for installation, use, and removal of temporary facilities shall be included in the Contract Sum unless otherwise indicated.

B. Water and Sewer Service from Existing System: 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. Contractor is responsible for disconnecting hoses and verifying water is turned off at water source locations. Where hose bibbs and valves are normally secured, Contractor shall verify they are secured at the end of the workday.

C. Electric Power Service from Existing System: Power will be available on site for contractor use. Contractor will be responsible for all power usage charges.
1. The contractor is responsible for providing any additional power, or higher voltages not available from on-site power. This can be provided by metered temporary power, or on-site generator.

1.4 INFORMATIONAL SUBMITTALS

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

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

NOT FOR BIDDING

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field Offices, General: Field office is not required. Contractor will be responsible for providing on-site location for access to drawings and submittals

B. Storage and Fabrication areas or structures: Provide secure storage areas or structures to accommodate materials and equipment for construction operations.
   1. Coordinate location of storage areas with Owner.
      a. Do not affect fire lane access.
      b. Do not affect general access to site.
   2. Obtain approval and coordinate location of long-term storage with owner

C. Provide temporary toilets for use until permanent facilities are installed.
   1. Coordinate location with current tenant to not affect fire lane access, or general access to site, or access/egress from occupied space
   2. Contractor is responsible for securing and maintenance of temporary facilities.
      a. Arrange for regular emptying and cleaning of facility.
      b. Ensure security of toilet at the end of the workday.

D. Contractor will be permitted use of new facilities after final connections to water and sewer are complete
   1. Contractor is responsible for maintenance and final cleaning or new toilet rooms for turning over to owner

E. Provide temporary drinking water and wash facilities for use of construction personnel.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Provide land line or reliable cellular service phone on site for communication with architect, owner and others associated with the project in a timely manner

PART 3 - EXECUTION

3.1 PARKING AND LAYDOWN SPACE

A. Parking: Parking for contractors, subcontractors and suppliers shall only be in areas identified on drawings.

B. Staging, storage, and construction lay down space shall be only in areas identified on drawings or as otherwise coordinated with Owner.

C. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

NOT FOR BIDDING

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.

3.2 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. The existing security fencing is to remain. The contractor is responsible for the providing locks and security of the job site and equipment during the construction. The owner is to be provided with keys to the lock.

B. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

C. Barricades, Warning Signs, covered walkways etc. to protect persons and property
1. Contractor is responsible for repair of any vehicles or equipment owned and not owned by the school caused by work associated with this project including damage during deliveries

END OF SECTION

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SECTION 01 52 00 - CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

1. GENERAL

1.1 DESCRIPTION

1. Contractor shall provide all temporary facilities throughout the construction period unless otherwise indicated in the Contract Documents.

2. Contractor shall pay all costs for providing, maintaining and removing of all temporary facilities unless otherwise indicated in the Contract Documents.

2. FACILITIES

2.1 TEMPORARY SANITATION FACILITIES

1. The Contractor will need to provide temporary toilet facilities. You will not have access toilets, or sinks outside the project area. The contractor will be responsible for delivery, dumping and removal of the temporary toilets.

2 Contractor will maintain sanitary facilities in a sanitary and clean condition at all times.

2.2 TEMPORARY WATER

1. Contractor will be permitted to use on site water IN THE PROJECT AREA for all uses.
   a. Ensure that all water sources (hose bibbs, faucets, etc.) are shut off at the conclusion of day's activities and at other times when water is not being utilized
   b. Contractor is responsible for repair or replacement of hose bibbs, faucets, etc. damaged during the construction process

2.3 TEMPORARY TELEPHONES

1. Contractor is responsible for its own phones and fax machines.

2.4 FIRE PROTECTION

1. Contractor shall provide fire extinguishers as required by OSHA regulations for its work.

2. Fire extinguishers shall be Multi-Purpose (ABC) dry chemical, UL labeled.

2.5 ACCESS ROADS AND PARKING AREAS

1. Access to site is via Owner's existing roads and parking lots. Contractor must keep all roads and parking areas clean and free of debris.

2. The Owner will determine, with the Contractor, where contractor's parking will occur on site. The owner will determine the required access to the project area. Once identified, all access to the project area for the contractor and all subcontractors is to be through this

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assigned entrance(s)

3. Access to project area may at times require access through owner public and occupied corridors. The contractor is responsible for proper clean up and maintenance of these area from damage, or debris from the construction area

2.6 STORAGE AREAS

1. The Owner will assign storage areas on the site. Storage areas are extremely limited and will be assigned in a manner which will best facilitate the work.

2. All combustible or flammable materials must be safely stored in a secured area in strict accordance with regulations, codes and laws enforced by local, State or Federal agencies, whichever is the most stringent.

2.7 FIRST AID STATION

1. Contractor is responsible to provide and maintain first aid station for all personnel.

2.8 SECURITY

1. No security will be provided.

2. All safety and security measures shall be the responsibility of the Contractor. These measures shall include but are not limited to the provision of secured storage for tools, construction equipment, and materials and equipment scheduled for installation in the building.

2.9 FIELD OFFICE AND STORAGE TRAILERS

1. The contractor will have use of area within the project site for a field office. Contractor is to provide tables, chairs, reference tables and all equipment (phone, fax, etc) necessary to meetings and review sessions.

2. The Contractor will be responsible for providing all on-site storage required for materials and equipment.

2.10 TEMPORARY POWER AND LIGHTING

1. The contractor will have permission to use outlets and other power sources in the project area. Contractor is responsible to monitoring the power usage and use care to not overload existing circuits and will be responsible for resetting breakers as necessary. Contractor will be responsible for damage causes by overloading or improper use of the poser

2.11 TEMPORARY HEAT

1. The project area is in a Currently conditioned space. Contractor will be responsible for providing temporary conditioning after existing units have been remove

NOT FOR BIDDING

3 EXECUTION

1. Contractor shall provide any other Temporary Facilities and services that it requires and which are not specifically identified above.
2. The contractor will be responsible for obtaining any permits and all fees associated with temporary utilities and facilities
3. Contractor shall install all temporary facilities in accordance with applicable codes.
4. Contractor shall maintain temporary facilities for which it is responsible throughout the construction period.
5. Contractor shall remove all temporary facilities for which it is responsible when they are no longer required or when the Owner directs the removal of same.
6. Contractor shall repair all damage to the Project Site caused by the installation of its temporary facilities.

END OF SECTION

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SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:
1. Division 01 Section "Substitution Procedures" for requests for substitutions.
2. Division 01 Section "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

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1.4 ACTION SUBMITTALS

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

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. 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 seven days of receipt of additional information or documentation, whichever is later.

    a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, 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 and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

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

C. Storage:

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

1.7 PRODUCT WARRANTIES

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

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

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

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

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

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

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

NOT FOR BIDDING

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. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

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C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the 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)

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SECTION 01 62 00 - MATERIAL AND EQUIPMENT

1. GENERAL CONDITIONS

1.1 The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions, if any) and Division 1 as appropriate apply to the Work specified in this Section.

1.2 Where work is to be executed under Separate Prime Contracts, the provisions of this Section apply to each Contract.

2. REQUIREMENTS INCLUDED

2.1 All materials and equipment incorporated into the Work shall:

1. be new;
2. conform to applicable specifications and standards; and
3. comply with size, make, type and quality specified, or as specifically approved in writing by the Architect.

2.2 Manufactured and Fabricated Products shall conform to the following requirements:

1. Designed, fabricated and assembled in accord with the best engineering and shop practices.
2. Manufactured like parts of duplicate units to standard sizes and gauges, to be interchangeable.
3. Two or more items of the same kind shall be identical, by the same manufacturer.
4. Products shall be suitable for service conditions.
5. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

2.3 Contractor shall not use materials or equipment for any purpose other than that for which it is designated or is specified.

2.4 Materials removed form existing structures shall not be reused in the completed work unless specifically indicated or specified.

2.5 For materials and equipment specifically indicated or specified to be reused in the Work:

1. Contractor shall use special care on removal, handling storage and reinstallation, to assure proper function in the completed Work.
2. Arrange for transportation, storage and handling of products which require off-site storage, restoration or renovation. Pay all costs for such work.

NOT FOR BIDDING

3. MANUFACTURER'S INSTRUCTIONS

3.1 When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, Contractor shall obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Architect.

1. Maintain one set of complete instructions at the job site during installation and until completion.

3.2 Contractor shall handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, Contractor shall consult with Architect for further instructions.

2. Contractor shall perform work in accord with manufacturer's instructions. Contractor shall not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

4. TRANSPORTATION AND HANDLING

4.1 Contractor shall arrange deliveries of Products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver Products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

2. Contractor shall immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.

4.2 Contractor shall provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

5. STORAGE AND PROTECTION

5.1 Contractor shall store Products in accord with manufacturer's instructions, with seals and labels intact and legible.

1. Contractor shall store Products subject to damage by the elements in weathertight enclosures.

2. Contractor shall maintain temperature and humidity within the ranges required by manufacture's instructions.

5.2 Exterior Storage

1. Contractor shall store fabricated Products above the ground, on blocking or skids, to prevent soiling or staining. Cover Products which are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.

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2. Contractor shall store loose granular materials in a well-drained area on soiled surfaces to prevent mixing with foreign matter.

5.3 Contractor shall arrange storage in a manner to provide easy access for inspection. Contractor shall make periodic inspections of stored Products to assure that Products are maintained under specified conditions, and free from damage or deterioration.

5.4 Contractor shall store flammable materials so as to prevent contact with flames and fire. Conform with manufacturer's recommendations and local laws. Pay particular attention to storage of:

1. Roof insulation.

2. Roofing materials, including solvents.

3. Paint materials.

4. Cleaning and other solvents.

5. Fuels.

5.5 Protection after Installation:

1. Contractor shall provide substantial coverings as necessary to protect installed Products from damage from traffic and subsequent construction operations. Remove when no longer needed.

6. SUBSTITUTIONS AND PRODUCT OPTIONS

6.1 Product List.

1. Within 30 days after Contract Date, Contractor shall submit to Architect a complete list of major products proposed to be used, with the name of the manufacturer and the installing Contractor.

6.2 Contractor's Options.

1. For Products specified only by reference standard, Contractor shall select any Product meeting that standard.

2. For Products specified by naming several Products or manufacturers, Contractor shall select any one of the Products or manufacturers named which complies with the specifications.

3. For Products specified by naming one or more Products or manufacturers and "or equal", Bidders must, during the bidding period, submit a request for substitutions for any Product or manufacturer not specifically named. See provisions in Paragraph 1.6.3.

4. For Products specified by naming only one Product and manufacturer, there is no option; and Contractor shall provide the precise Product specified.

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6.3 Substitutions.

1. Until a date no later than ten (10) days before the date Bids are due, Architect will consider written requests from bidders for substitution of Products. Architect will review requests and will notify Bidders in an Addendum if the requested substitution is acceptable.

2. Should the Bidder desire a substitution, it shall submit a separate request for each Product, supported with complete data, with drawings and samples as appropriate, including:

    1. Comparison of the qualities of the proposed substitution with that specified.

    2. Changes required in other elements of the Work because of the substitution.

    3. Effect on the construction schedule.

    4. Cost data comparing the proposed substitution with the Product specified.

    5. Any required license fees or royalties.

    6. Availability of maintenance service, and source of replacement materials.

3. Architect, in its sole discretion, shall be the judge of the acceptability of the proposed substitution.

4. A request for a substitution constitutes a representation that Bidder:

    1. has investigated the proposed Product and determined that it is equal to or superior in all respects to that specified;

    2. will provide the same warranties or bonds for the substitution as for the Product specified;

    3. will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects; and

    4. waives all claims for additional costs, under his responsibility, which may subsequently become apparent.

6.4 Architect will review requests for substitutions with reasonable promptness, and notify Bidders, in writing, of the decision to accept or reject the requested substitution. Any decision to accept a substitution must be confirmed in an Addendum issued during the bidding period in order to be valid. Oral approvals will not be binding.

END OF SECTION

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SECTION 01 64 00 - OWNER-FURNISHED CONTRACTOR-INSTALLED PRODUCTS (OFCI)

PART 1 - GENERAL

1.01 SUMMARY:

A. This Section specifies the requirements for products and equipment furnished by the Owner and installed by the Contractor as part of the Work.

B. Refer to Section 01 11 00 "Summary of Work" for general responsibilities related to Owner-Furnished, Contractor-Installed (OFCI) Products.

1.02 OWNER-FURNISHED, CONTRACTOR-INSTALLED (OFCI) PRODUCTS:

A. The following products will be furnished by the Owner and installed by the Contractor:

1. Hollow Metal, Wood & Storefront Door Hardware
2. Mechanical Products
3. Plumbing Products
4. Electrical Products
5. Generators and Transfer Switches

B. The Vendor's contact information for the OFCI Products is as follows:

1. Door Hardware - Hollow Metal, Wood & Storefront Doors:

Precision Door & Hardware, LLC
201 Ruthar Drive, Suite 2
Newark, DE 19711
Contact:
Maggie Greco
c. 815.991.6730

mgreco@pdoor.com

2. Mechanical Products:

TriState HVAC Equipment, LLC
Union Hill Industrial Park
One Resource Drive
West Conshohocken, PA 19428
Contacts:
Ed Ciechon
c. 610.389.5616
eciechon@tristatehvac.com
Rick StVincent
302.236.0109
rstvincent@tristatehvac.com

3. Plumbing Products:

Provided by RCCSD

4. Electrical Products:

Graybar Electric Company, Inc.
1520 Bobali Drive

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Harrisburg, PA 17104
Contact:
Kyle Blose
o. 717.260.6745
c. 717.439.7433
kyle.blose@graybar.com

5. Generators and Transfer Switches:
Graybar Electric Company, Inc.
1520 Bobali Drive
Harrisburg, PA 17104
Contact:
Kyle Blose
o. 717.260.6745
c. 717.439.7433
kyle.blose@graybar.com

C. OFCI Products are further identified in the Drawings and Technical Specifications.

1.03 FIELD SURVEY AND COORDINATION FOR OWNER-FURNISHED MECHANICAL EQUIPMENT:

A. General:
1. Mechanical equipment identified as Owner-Furnished, Contractor-Installed (OFCI) shall be furnished by the Owner and installed by the Renovations Contractor. The Renovations Contractor shall be responsible for performing field surveys of existing conditions and providing complete and accurate field information required by the Owner, Architect/Engineer, and Owner's equipment vendor to properly configure and release the OFCI mechanical equipment for fabrication.

B. Timing:
1. Promptly following Notice to Proceed, and prior to the Owner's release of affected equipment for fabrication, the Renovations Contractor shall perform a detailed field survey at each location receiving OFCI mechanical equipment. Coordinate the survey among the Renovations Contractor, mechanical subcontractor, electrical subcontractor, controls subcontractor, and other affected trades. Within 14 calendar days after Notice to Proceed, or earlier when required by the OFCI Procurement Schedule, the Renovations Contractor shall complete and submit the required field surveys. Field surveys shall be completed sufficiently in advance of the Owner's required equipment-release date to permit incorporation of verified field conditions into the final equipment configuration.

C. Scope of Field Survey:
1. Field verification shall include, as applicable, the following:
a. Existing equipment manufacturer, model number, physical dimensions, orientation, and configuration.
b. Equipment handing required so heating and cooling coil connections properly coordinate with existing piping configurations.
c. Existing piping sizes, locations, elevations, connection arrangements, valve locations, and direction of approach to the equipment.
d. Existing equipment voltage, phase, frequency, circuit characteristics,

NOT FOR BIDDING

disconnecting means, and electrical connection locations.

e. Existing supply-air, return-air, outdoor-air, exhaust-air, and other duct sizes, locations, orientations, and connection configurations.
f. For unit ventilators and similar equipment, existing return-air and outdoor-air arrangements, wall openings, louvers, plenums, duct connections, and related existing construction.
g. Requirements for end panels, filler panels, sub-bases, equipment bases, trim pieces, transition pieces, and other accessories necessary to properly interface the new OFCI equipment with existing construction.
h. For replacement duct coils and similar equipment, existing duct dimensions, airflow direction, coil orientation, piping connection locations (if required), existing equipment power source (if required), available service and removal clearances, and requirements for duct transitions or modifications.
i. Building access limitations, including doors, corridors, stairs, elevators, ceiling heights, equipment-room openings, and other restrictions affecting delivery and installation.
j. For equipment available either factory assembled or in sections, verify whether the equipment can be delivered and installed as a single assembly or shall be furnished in sections for field assembly.
k. Available installation, service, maintenance, coil-pull, filter-removal, and equipment-removal clearances.
l. Existing controls and control-device locations and configurations affecting connection to the new equipment.
m. Other existing conditions affecting the configuration, manufacture, delivery, installation, connection, operation, or maintenance of the OFCI mechanical equipment.
n. For rooftop replacement equipment, verify existing curb dimensions, curb configuration, equipment footprint, roof opening, required equipment adapter, service connection locations, and other existing conditions necessary to coordinate the permanent replacement equipment with the curb and roofing work indicated in the Contract Documents.

D. Field Survey Documentation:
   1. Prepare and submit a field survey report for each affected OFCI mechanical equipment item. Include field measurements, nameplate data, sketches where necessary to clearly document existing configurations, and identification of required equipment handing, accessories, sectionalization, connections, and other configuration information. SEE FIELD SURVEY REPORT DOCUMENT AT THE END OF THIS SECTION.

E. Coordination with Owner and OFCI Vendor:
   1. Submit the field survey reports to the Architect/Engineer and Owner for use in coordinating the OFCI equipment with the Owner's equipment vendor. The Renovations Contractor shall promptly respond to requests for clarification of field information required to complete the equipment configuration and release.

F. Discrepancies:
   1. Where field conditions differ from the Contract Documents, or where the Renovations Contractor identifies a condition requiring clarification or modification of the proposed equipment configuration, notify the Architect/Engineer and Owner in writing before the Owner releases the affected equipment for fabrication. Provide measurements, photographs, sketches, and other

NOT FOR BIDDING

information necessary to evaluate the condition.

G. Contractor Responsibility:
   1. The Renovations Contractor shall be responsible for the accuracy and completeness of field measurements and existing-condition information furnished by the Contractor and its subcontractors. Costs and delays resulting from inaccurate, incomplete, or omitted field information provided by the Renovations Contractor shall not constitute a basis for additional compensation or extension of Contract Time.

H. Vendor Direction:
   1. The Renovations Contractor and its subcontractors shall not direct the Owner's equipment vendor to change equipment selections, configurations, accessories, or fabrication requirements without written authorization from the Owner.

I. Installation Coordination:
   1. Field verification does not relieve the Renovations Contractor of its responsibility to coordinate installation of OFCI equipment with existing construction, new construction, related trades, utility connections, controls, access requirements, and the requirements of the Contract Documents.

1.04 DELIVERY, STORAGE, AND HANDLING:

A. Owner Responsibilities:
   1. Provide the Renovations Contractor with a final list of the OFCI Products that will be provided by each OFCI Product Vendor.

B. Renovations Contractor Responsibilities:
   1. Coordinate delivery of OFCI Products to the jobsite or to an approved staging location with the OFCI Vendor.
   2. Receive, unload, and verify delivery of all OFCI Products based on the final list provided by the Owner.
   3. Inspect for damage or missing components and report discrepancies to the Owner within 24 hours.
   4. Securely store items in clean, dry, and protected conditions, in accordance with the manufacturer’s instructions. The Renovations Contractor shall provide and pay for temporary storage if required.
   5. Be responsible for safekeeping from delivery through Final Completion.

1.05 INSTALLATION:

A. Except for work specifically assigned to the Roofing Contractor for existing rooftop equipment located within areas of roof replacement, the Renovations Contractor shall install all OFCI Products in accordance with the Contract Documents. Work associated with raising, temporarily resetting, permanently resetting, reconnecting, and restoring existing rooftop equipment affected by roof replacement shall be performed under the Roofing Contract as indicated in the Contract Documents.

B. The Renovations Contractor shall provide all materials, accessories, fasteners, and labor required for complete installation, including: - Mounting supports and anchors. - Final utility connections (if not otherwise noted). - Finish integration, patching, and touch-ups as required.

C. The Renovations Contractor shall coordinate with their trades, the Architect, and the Owner’s representatives to ensure timely, complete, and compliant installation.

D. Rooftop Mechanical Equipment:
   1. For OFCI rooftop mechanical equipment located within areas of roof

NOT FOR BIDDING

replacement, the Roofing Contractor shall be responsible for curb extensions and modifications required to raise the existing roof curb or equipment support to the elevation required by the new roofing system, including associated roof-side work, flashing, and weatherproofing, as indicated in the Contract Documents.

2. The Renovations Contractor shall be responsible for equipment adapter curbs or adapters required specifically to accommodate differences between the permanent replacement equipment and the existing or modified roof curb, including differences in equipment footprint, opening size, configuration, or connection arrangement.
3. The Renovations Contractor shall coordinate the permanent replacement equipment and required adapter with the curb elevations, dimensions, and conditions established by the roofing work.
4. Work described in this Paragraph applies only to rooftop equipment located within areas of roof replacement. For rooftop equipment located in areas where the roof is not being replaced, the Renovations Contractor shall be responsible for the complete installation and coordination of the OFCI equipment unless specifically indicated otherwise in the Contract Documents.

1.06 WARRANTY:

A. Notwithstanding the general warranty commencement provisions, the warranty period for all mechanical, electrical, and plumbing (MEP) systems, including but not limited to HVAC units, control systems, boilers, chillers, air handling equipment, generators, and transfer switches shall begin on the date of Final Completion of the respective system(s). Final Completion shall include successful start-up, testing, adjustment, balancing, training, and fully functional operation as demonstrated by test reports and approved by the Owner or the Owner's representative. If occupancy occurs prior to Final Completion, the warranty for MEP systems shall be deferred until all such activities are complete. This clause shall supersede any conflicting language regarding warranty commencement tied to Substantial Completion.

B. Delivery and installation of OFCI Products shall be integrated into the overall construction schedule and sequencing of work.

C. The Renovations Contractor shall schedule coordination and/or pre-installation meetings as necessary to ensure proper interface between OFCI Products and other building systems.

NOT FOR BIDDING

RED CLAY CONSOLIDATED SCHOOL DISTRICT
OFCI MECHANICAL EQUIPMENT FIELD SURVEY REPORT

Project:	
Contractor:	
Mechanical Subcontractor:	
Electrical Subcontractor:	
Survey Date:	

EQUIPMENT IDENTIFICATION

Equipment Tag / ID:		**Room / Location:**	
Equipment Type:		**Existing Manufacturer:**	
Existing Model No.:		**Existing Serial No.:**	
OFCI Vendor:		**Proposed Equipment Tag:**	

EXISTING EQUIPMENT / FIELD CONDITIONS

Existing overall dimensions (L x W x H):	
Equipment orientation / handing:	
Available installation and service clearances:	
Removal / replacement access route and restrictions:	
Can new equipment be delivered as one piece?	☐ Yes ☐ No If No, identify required sectionalization below.
Sectionalization / field assembly requirements:	
End panels / filler panels required:	☐ No ☐ Yes – Describe / quantity:
Sub-base / equipment base required:	☐ No ☐ Yes – Type / height / dimensions:
Other trim, transitions, or accessories required:	

PIPING / COIL CONNECTIONS

Heating coil connection handing / location:	
Cooling coil connection handing / location:	
Existing supply piping size / location / elevation:	
Existing return piping size / location / elevation:	
Valve / control valve arrangement:	
Condensate drain size / location:	
Coil pull / service clearance available:	
Required changes or special configuration:	

DUCTWORK / AIR CONNECTIONS

Supply-air duct size / location / orientation:	
Return-air duct size / location / orientation:	
Outdoor-air duct size / location / orientation:	
Exhaust-air duct size / location / orientation:	
Existing RA / OA plenum configuration:	
Wall opening / louver dimensions and configuration:	
Airflow direction:	
Duct coil opening / existing duct dimensions:	

ELECTRICAL / CONTROLS

Existing voltage / phase / frequency:	
Circuit / breaker information:	
Existing disconnect type / rating / location:	
Electrical connection location on existing equipment:	
Controls / BAS interface and connection location:	
Other electrical / controls conditions affecting OFCI unit:	

PHOTOGRAPHS / SUPPORTING DOCUMENTATION

Existing equipment nameplate photographed:	☐ Yes ☐ No Photo No.:

DISCREPANCIES / REQUIRED ACTION

Conditions consistent with Contract Documents:	☐ Yes ☐ No
Clarification required from Architect/Engineer:	☐ No ☐ Yes
OFCI equipment configuration requires coordination:	☐ No ☐ Yes
Description / RFI reference / required action:	

END OF SECTION

NOT FOR BIDDING

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

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

B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For professional engineer.

B. Certificates: Submit certificate signed by professional engineer certifying that location and elevation of improvements comply with requirements.

C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

NOT FOR BIDDING

D. Certified Surveys: Submit two copies signed by professional engineer.

E. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Division 01 sustainable design requirements Section.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, 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; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

NOT FOR BIDDING

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. 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 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

NOT FOR BIDDING

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by 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.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Pre-installation Conferences: Include Owner's construction personnel at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction personnel 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. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

a. Use containers intended for holding waste materials of type to be stored.

NOT FOR BIDDING

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

NOT FOR BIDDING

E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 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.

END OF SECTION

NOT FOR BIDDING

SECTION 01 73 29 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:

1. Division 01 Section "Selective Structure Demolition" for demolition of selected portions of the building.
2. Divisions 2 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
3. Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least **10** days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the Work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

NOT FOR BIDDING

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. **Architect's** Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 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 operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. **Operating elements include the following:**

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. Detention or electronic security systems.

C. 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.

D. 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.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

NOT FOR BIDDING

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place 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 in-place 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 in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to **prevent** interruption to occupied areas.

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 in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

NOT FOR BIDDING

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. **Concrete and Masonry**: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

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.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, 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 in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

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END OF SECTION

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SECTION 01 74 19 - 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. Mechanical, hand-separation, or a combination of both procedures, are used to recover recyclable materials.

H. Universal waste components (UWC) are as follows: electric motors, PCB ballasts, non PCB ballasts, capacitors, contactors, circuit breakers, elemental and liquid mercury containing articles, transformers, lead acid batteries, fluorescent light bulbs, and all HID light bulbs.

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

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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.

1.5 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:

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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.

1.6 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.

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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

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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.

3.5 UNIVERSAL WASTE DIVERSION

A. Remove all universal waste from fixtures, panels, and related devices for proper diversion and reclamation.

B. Store all universal waste in containers provided by contact person within facilities operations.

C. Store all universal waste in a secured location and request periodic removal from assigned contact person.

D. Exemption: electric motors, circuit breakers, transformers and lighting contactors are exempt from this provision provided the contractor chooses to salvage or reuse the components.

E. No identified universal waste will be discarded into the waste stream.

END OF SECTION

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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)

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SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

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

B. Related Requirements:

1. Division 01 Section "Photographic Documentation" for submitting final completion construction photographic documentation.
2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
4. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
5. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 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.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

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1.4 MAINTENANCE MATERIAL SUBMITTALS

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

1.5 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 Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. 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. Obtain Owner's signature for receipt of submittals.

5. Submit test/adjust/balance records.
6. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
7. 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.

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5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "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.

1.6 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 Division 01 Section "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.

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1.7 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. Use CSI Form 14.1A.

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.

1.8 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.

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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 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 Division 01 Section "Temporary Facilities and Controls." Prepare written report.

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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

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SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. 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 Requirements:

1. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
2. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.
2. Number of Copies: Submit copies of record Drawings as follows:

a. Final Submittal:
1) Submit PDF electronic files of scanned record prints and three set(s) of prints.
2) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.

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

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individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding 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. Record data as soon as possible after obtaining it.
c. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
3. Refer instances of uncertainty to Architect for resolution.
4. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.

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. Format: Annotated PDF electronic file **with comment function enabled**.
3. Record Digital Data Files: Organize digital data 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 digital data 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.

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1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Specifications as annotated PDF electronic file.

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 Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as annotated PDF electronic file

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.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

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 revisions to project record documents as they occur; do not wait until 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.

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SECTION 01 79 00 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

B. Related Requirements:

1. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

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1. Identification: On each copy, provide an applied label with the following information:

    a. Name of Project.
    b. Name and address of videographer.
    c. Name of Architect.
    d. Name of Construction Manager.
    e. Name of Contractor.
    f. Date of video recording.
2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
3. At completion of training, submit complete training manual(s) for Owner's use prepared and bound in format matching operation and maintenance manuals.

1.5 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.

D. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.6 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

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C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Operations manuals.
    c. Maintenance manuals.
    d. Project record documents.
    e. Identification systems.
    f. Warranties and bonds.
    g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

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a. Startup procedures.
b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

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PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Division 01 Section "Operations and Maintenance Data."

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
2. Owner will furnish an instructor to describe Owner's operational philosophy.
3. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION

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SECTION 02 41 13 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

B. Related Sections include the following:

1. Division 1 Section "Summary" for use of premises, phasing, and Owner-occupancy requirements.
2. Division 1 Section "Temporary Facilities and Controls" for temporary construction and environmental protection measures for selective demolition operations.

1.3 DEFINITIONS

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

B. Remove and Salvage: Detach items from existing construction. Save, protect, and restore ready for reuse, unless noted to be delivered to Owner.

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

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

1.4 MATERIALS OWNERSHIP

A. Owner will have right of first refusal to all salvaged materials. Owner will tag all items to be removed and delivered to Owner prior to notice to proceed with demolish activities.

B. All equipment, materials, and items removed shall remain the property of the Owner, if desired; equipment, material and items not desired to be reused or retained by the Owner shall be removed from the site by the Contractor. The Owner’s Representative will designate which equipment, materials and items will be retained.

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C. Items and materials noted “to be salvaged” or “Owner’s surplus” shall remain the property of the Owner. Contractor shall obtain receipt of proof of delivery to Owner designated secure storage.

D. Documentation: Where condition of salvaged materials or adjoining construction may be subject to dispute or might be misconstrued as damage caused by selective demolition operations, document existing conditions prior to start of demolition or removal.

1.5 SUBMITTALS

A. Pre-demolition Photographs or Videotapes: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

B. Submit for record only plans and sequence for temporary shoring at least 15 days prior to start of work.

1.6 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

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

C. Notify Owner’s Representative of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: Hazardous materials may be present in existing construction to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous materials **will be removed by Owner concurrent with the start of the Work.**
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
3. 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.

E. On site storage or sale of removed items or materials not intended for reuse on project is not permitted.

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

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions.
   1. Correlate with requirements indicated to determine extent of selective demolition required.
   2. Prior to selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, record existing conditions by use of photographs, and make permanent records of measurements, materials, and construction details required to make exact reproductions.

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

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

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

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services and Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

B. Service and System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services, mechanical systems, and electrical systems serving areas to be selectively demolished.

   1. Owner will arrange to shut off indicated services and systems when requested by Contractor.
   2. If services and systems necessary for Owner's operations must be interrupted, provide temporary services and systems bypassing areas of service interruption before proceeding with selective demolition in types and capacities required to maintain Owner's operations as acceptable to governing authorities.
   3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

      a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall after systems have been deactivated, drained, and capped as appropriate.

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3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 PROTECTION

A. Provide temporary barricades and other forms of protection for people from operations.

B. Provide protective measures as required to provide free and safe passage to and from occupied portions of building.

C. Erect temporary covered passageways as required by authorities having jurisdiction.

D. Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or work to remain.

E. Protect existing finish work to remain from damage.

F. Protect floors with suitable coverings when necessary.

G. Construct temporary insulated solid dustproof partitions where required to isolate noisy or dirt-and-dust-generating construction activities from Owner-occupied areas. Equip partitions with dustproof doors and security locks if required.

H. Provide temporary weather protection after removal of existing exterior construction until new construction in in place to ensure no water leakage or damage occurs to structure or building interiors.

I. Remove protections at completion of work.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction or as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. DO NOT CUT STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL OF ARCHITECT.

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3. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
5. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
6. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

B. Reuse of Building Elements: Do not demolish building elements beyond what is indicated on Drawings without Architect's approval.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until reuse or delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.
6. Remove and turn over to Owner all existing building dedication plaques.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify 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. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner’s Representative, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations after selective demolition operations are complete.

F. Roofing: Remove no more existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight. Refer to Division 7 Section for roofing requirements.

G. Air-Conditioning Equipment: Where indicated, remove equipment without releasing refrigerants.

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3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

NOT FOR BIDDING

SECTION 04 01 20.63 - BRICK MASONRY REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Masonry materials.
2. Mortar materials.
3. Manufactured repair materials.

B. Related Requirements:
1. Section 04 01 20.64 "Brick Masonry Repointing" for repointing existing brickwork.
2. Section 07 92 00 "Joint Sealants" for joint sealants, joint fillers, and sealant-joint preparation for repaired masonry.

1.2 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed.

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

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner or storage as indicated.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage; prepare for reuse; and reinstall where indicated.

D. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

E. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of bricks to freezing and thawing.

1.3 SEQUENCING AND SCHEDULING

A. Work Sequence: Perform brick masonry repair work in the following sequence, which includes work specified in this and other Sections:

1. Remove plant growth.
2. Inspect masonry for open mortar joints and point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
3. Remove paint.
4. Clean masonry.

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5. Repair masonry, including replacing existing masonry with new masonry materials.
6. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
7. Where water repellents are to be used on or near masonry work, delay application of these chemicals until after pointing and cleaning.

B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks in accordance with "Brick Masonry Patching" Article. Patch holes in mortar joints according to Section 040120.64 "Brick Masonry Repointing."

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include recommendations for product application and use.
3. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of replacement bricks on the structure, showing relation of existing and new or relocated units.
2. Show provisions for expansion joints or other sealant joints.
3. Show provisions for flashing, lighting fixtures, conduits, and weep holes as required.
4. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

C. Samples for Initial Selection: For the following:

1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 1/2 inch (13 mm) wide, set in aluminum or plastic channels.

    a. Have each set contain a close color range of at least six Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
    b. Submit with precise measurements on ingredients, proportions, gradations, and source of colored sands from which each Sample was made.

2. Sand Types Used for Mortar: Minimum 8 oz. (240 mL) of each in plastic screw-top jars.
3. Patching Compound: Submit sets of patching compound Samples in the form of plugs (patches in drilled holes) in sample units of masonry representative of the range of masonry colors on the building.

    a. Have each set contain a close color range of at least six Samples of different mixes of patching compound that matches the variations in existing masonry when cured and dry.

4. Include similar Samples of accessories involving color selection.

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D. Samples for Verification: For the following:

1. Each type of brick unit to be used for replacing existing units. Include sets of Samples to show the full range of shape, color, and texture to be expected. For each brick type, provide straps or panels containing at least four bricks. Include multiple straps for brick with a wide range.
2. Each type of patching compound in the form of briquettes, at least 3 inches (75 mm) long by 1-1/2 inches (38 mm) wide. Document each Sample with manufacturer and stock number or other information necessary to order additional material.
3. Accessories: Each type of accessory and miscellaneous support.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For brick masonry repair specialist.

1.6 QUALITY ASSURANCE

A. Brick Masonry Repair Specialist Qualifications: Engage an experienced brick masonry repair firm to perform Work of this Section. Firm is to have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repair work.

1. Field Supervision: Brick masonry repair specialist firm is to maintain experienced full-time supervisors on Project site during times that brick masonry repair work is in progress.
2. Brick Masonry Repair Workers: When bricks are being patched, at least one worker per crew should be trained and certified by manufacturer of patching compound to apply its products performing the work of brick repairs.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver bricks to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.

B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

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F. Handle bricks to prevent overstressing, chipping, defacement, and other damage.

1.8 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit brick masonry repair work to be performed in accordance with product manufacturers' written instructions and specified requirements.

B. Temperature Limits: Repair brick masonry only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for masonry repair unless otherwise indicated:

1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for seven days after repair.

D. Hot-Weather Requirements: Protect masonry repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated.

E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain brick units from single source.

B. For exposed masonry units and cementitious mortar components, obtain each color and grade from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

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1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.3 MASONRY MATERIALS

A. Masonry Materials: Face brick, required to complete brick masonry repair work.

1. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork

a. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.

2. Brick Matching Architect's Sample: Units with colors, color variation within units, surface texture, and physical properties that match Architect's sample. Match existing units in size and shape.

a. For Architect's sample that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range rather than brick that matches an individual color within that range.

3. Special Shapes:

a. Provide molded, 100 percent solid shapes for applications where core holes or "frogs" could be exposed to view or weather when in final position and where shapes produced by sawing would result in sawed surfaces being exposed to view.
b. Provide specially ground units, shaped to match patterns, for arches and where indicated.
c. Mechanical chopping or breaking brick, or bonding pieces of brick together by adhesive, are unacceptable procedures for fabricating special shapes.

B. Building Brick: ASTM C62, of same vertical dimension as face brick, for masonry work concealed from view.

1. Grade SW where in contact with earth.
2. Grade SW or Grace MW for concealed backup.

2.4 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; white where required for color matching of mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested in accordance with ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Masonry Cement: ASTM C91/C91M.

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1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. Cemex S.A.B. de C.V.
   b. Essroc.
   c. Hanson Brick and Tile;Lehigh Hanson.
   d. Holcim (US) Inc.
   e. Lafarge North America Inc.
   f. QUIKRETE.

D. Mortar Cement: ASTM C1329/C1329M.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. Lafarge North America Inc.

E. Mortar Sand: ASTM C144.
1. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
2. Exposed Mortar: Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.

F. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
1. Natural and synthetic iron oxides, alkali stable, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.
2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. Davis Colors.
   b. LANXESS Corporation.
   c. Solomon Colors, Inc.

G. Water: Potable.

2.5 MANUFACTURED REPAIR MATERIALS

A. Brick Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching brick masonry.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. Cathedral Stone Products, Inc..
   b. Conproco Corporation.
   c. Edison Coatings, Inc.

2. Use formulation that is vapor and water permeable (equal to or more than the brick), exhibits low shrinkage, has lower modulus of elasticity than bricks being repaired, and develops high bond strength to all types of masonry.

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3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
4. Formulate patching compound in colors and textures to match each brick being patched. Provide sufficient number of colors no fewer than three to enable matching of the color, texture, and variation of each unit.

2.6 ACCESSORY MATERIALS

A. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.

B. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

1. Surface Preparation: Use coating requiring no better than SSPC-SP 2, "Hand Tool Cleaning" surface preparation in accordance with manufacturer's literature or certified statement.

C. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could leave residue on surfaces.

2.7 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

C. Do not use admixtures in mortar unless otherwise indicated.

D. Mixes: Mix mortar materials in the following proportions:

1. Rebuilding (Setting) Mortar by Volume: ASTM C270, Proportion Specification, 1 part portland cement, 1 part lime, and 6 parts sand.

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2. Pigmented, Colored Mortar: Add mortar pigments to produce exposed, setting (rebuilding) mortar of colors required.

E. ACCESSORY MATERIALS

1. Sealant: Single-Component Nonsag Urethane Sealant
2. Products:
   a. Sika Corporation, Inc.; Sikaflex - 15LM.
   b. Tremco; Vulkem 921.
   c. Tremco; Vulkem 931.
3. Type and Grade: S (single component) and NS (nonsag).
4. Class: 50 100/50.
5. Use Related to Exposure: NT (nontraffic).
6. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O

F. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) O (open-cell material) B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturers for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.

Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

G. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could leave residue on surfaces.

H. PAINT FOR STRUCTURAL STEEL
1. Top Coat: Lead- and chromate-free, modified polyamidoamine epoxy paint: Tnemec Series 135 Chembuild or approved equal.
2. Primer: Same as Top Coat.

NOT FOR BIDDING

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrate conditions with specialist present, for compliance with approved mockup requirements for brick units, repair methods, products, and other conditions affecting performance of the Work.

3.2 PREPARATION

A. General: Comply with each manufacturer's written instructions for protecting people, motor vehicles, surrounding buildings, masonry areas not to be cleaned, nonmasonry surfaces, landscaping, equipment, and other surfaces that could be injured or harmed by such Work.

1. Provide temporary protective covers over pedestrian walkway areas and at points of entrance and exit for people, motor vehicles, and equipment that must remain during duration of repairing procedures.
2. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant.
3. Temporarily protect all open joints to prevent intrusion of washing waters into the wall structure or building interior.
4. Remove all extraneous items no longer in use on face of surface unless indicated to remain. Where not indicated, obtain approval with Architect.

3.3 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

3.4 MASONRY REPAIR, GENERAL

A. Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 20 ft. (6 m) away by Architect.

3.5 ABANDONED ANCHOR REMOVAL

A. Remove abandoned anchors, brackets, wood nailers, and other extraneous items no longer in use unless indicated to remain.

1. Remove items carefully to avoid spalling or cracking masonry.
2. Notify Architect before proceeding if an item cannot be removed without damaging surrounding masonry. Do the following where directed:

NOT FOR BIDDING

a. Cut or grind off item approximately 3/4 inch (20 mm) beneath surface and core drill a recess of same depth in surrounding masonry as close around item as practical.
b. Immediately paint exposed end of item with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.

3. Patch hole where each item was removed unless directed to remove and replace bricks.

3.6 BRICK REMOVAL AND REPLACEMENT

A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated or are to be reused. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

1. When removing single bricks, remove material from center of brick and work toward outside edges.

B. Support and protect remaining masonry that surrounds removal area.

C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition. Coordinate with new flashing, reinforcement, and lintels, which are specified in other Sections.

D. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.

E. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
3. Store brick for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.

F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.

G. Replace removed damaged brick with other removed brick in good condition, where possible, or with new brick matching existing brick. Do not use broken units unless they can be cut to usable size.

H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

1. Maintain joint width for replacement units to match existing joints.
2. Use setting buttons or shims to set units accurately spaced with uniform joints.

I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67/C67M initial rates of absorption

NOT FOR BIDDING

(suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.) Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
2. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.7 BRICK MASONRY PATCHING

A. Patch the following bricks unless another type of repair or replacement is indicated:

1. Bricks indicated to be patched.
2. Bricks with holes.
3. Bricks with small areas of deep deterioration. Patch deep deteriorations measuring more than 3/4 inch (19 mm) in least dimension and more than 1/4 inch (6 mm) deep.

B. Remove and replace existing patches where indicated.

C. Patching Bricks:

1. Remove loose material from masonry surface. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to be patched and is at least 1/4 inch (6 mm) thick, but not less than recommended in writing by patching compound manufacturer.
2. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of brick.
3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
4. Rinse surface to be patched and leave damp, but without standing water.
5. Brush-coat surfaces with slurry coat of patching compound in accordance with manufacturer's written instructions.
6. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than 1/4 inch (6 mm) or more than 2 inches (50 mm) thick. Roughen surface of each layer to provide a key for next layer.
7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of brick. Shape and finish surface before or after curing, as determined by testing, to best match existing brick.
8. Keep each layer damp for 72 hours or until patching compound has set.
9. Remove and replace patches with hairline cracks or that show separation from brick at edges, and those that do not match adjoining brick in color or texture.

NOT FOR BIDDING

3.8 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.9 FIELD QUALITY CONTROL

A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

3.10 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property.

B. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

END OF SECTION

NOT FOR BIDDING

2. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
3. Remove paint.
4. Clean masonry.
5. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
6. Repair masonry, including replacing existing masonry with new masonry materials.
7. Rake out mortar from joints to be repointed.
8. Point mortar and sealant joints.
9. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
10. Where water repellents are to be used on or near masonry work, delay application of these chemicals until after pointing and cleaning.

C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks Patch holes in mortar joints in accordance with "Repointing" Article.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include recommendations for product application and use.
3. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of repointing work on the structure.
2. Show provisions for expansion joints or other sealant joints.
3. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

C. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by **1/2 inch** wide, set in aluminum or plastic channels.

    a. Have each set contain a close color range of at least **six** samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
    b. Submit with precise measurements on ingredients, proportions, gradations, and source of colored sands from which each Sample was made.

2. Sand Type Used for Pointing Mortar: Minimum 8 oz. of each in plastic screw-top jars.
3. Sealant materials.
4. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For the following:

NOT FOR BIDDING

1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches (150 mm) long by **1/4 inch (6 mm)** wide, set in aluminum or plastic channels.

    a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

2. Sealant materials.
3. Accessories: Each type of accessory and miscellaneous support.

1.6 INFORMATIONAL SUBMITTALS

A. Preconstruction Test Reports: For existing bricks and mortar.

B. Quality-control program.

C. Qualification Statements: For brick masonry repointing specialist and testing service.

1.7 QUALITY ASSURANCE

A. Brick Masonry Repointing Specialist Qualifications: Engage an experienced brick masonry repointing firm to perform work of this Section. Firm is to have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repointing work.

1. Field Supervision: Brick masonry repointing specialist firms are to maintain experienced full-time supervisors on Project site during times that brick masonry repointing work is in progress.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.

1.8 MOCKUPS

A. Prepare mockups of brick masonry repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Repointing: Rake out joints in two separate areas, each approximately 36 inches (900 mm) high by 48 inches (1200 mm) wide for each type of repointing required, and repoint one of the areas.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations by Change Order.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

NOT FOR BIDDING

1.9 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Owner will engage a qualified testing agency to perform preconstruction testing on masonry units as follows:

1. Provide test specimens as indicated and representative of proposed materials and existing construction.
2. Existing Brick: Test each type of existing brick indicated for repointing in accordance with testing methods in ASTM C67/C67M for compressive strength, 24-hour cold-water absorption, five-hour boil absorption, saturation coefficient, and initial rate of absorption (suction). Carefully remove **five** existing units from locations designated by Architect. Take testing samples from these units.
3. Existing Mortar: Test in accordance with ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength.
4. Temporary Patch: As directed by Architect, provide temporary materials followed by permanent repairs at locations from which existing samples were taken.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

D. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.11 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed in accordance with product manufacturers' written instructions and specified requirements.

B. Temperature Limits: Repoint mortar joints only when air temperature is between 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:

1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients and existing masonry walls to produce temperatures between 40 and 120 deg F (4 and 49 deg C).

NOT FOR BIDDING

2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for seven days after pointing.

D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial shade and wind breaks and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of material for repointing brick masonry (cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; **white** where required for color matching of mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested in accordance with ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Masonry Cement: ASTM C91/C91M.

D. Mortar Cement: ASTM C1329/C1329M.

E. Mortar Sand: ASTM C144.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.

F. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

G. Water: Potable.

H. MORTAR MIXES

I. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

NOT FOR BIDDING

1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that retains its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

J. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's written approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

K. Do not use admixtures in mortar unless otherwise indicated.

L. Mixes: Mix mortar materials in the following proportions:

1. Pointing Mortar by Volume: ASTM C270, Proportion Specification, 1 part portland cement, 1 part lime, and 6 parts sand. Add mortar pigments to produce mortar colors required.
2. Pointing Mortar by Type: ASTM C270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to masonry cement. Add mortar pigments to produce mortar colors required.]
3. Pointing Mortar by Property: ASTM C270, Property Specification, Type N unless otherwise indicated; with cementitious material limited to masonry cement. Add mortar pigments to produce mortar colors required.
4. Conduct a preconstruction laboratory testing per ASTM C780 to establish proper mortar mix proportions.

2.3 ACCESSORY MATERIALS

A. Sealant Materials:

1. Sealant manufacturer's standard elastomeric sealant(s) of base polymer and characteristics in accordance with applicable requirements in Section 079200 "Joint Sealants."

B. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

PART 3 - EXECUTION

3.1 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.

NOT FOR BIDDING

2. Keep wall area wet below pointing work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

B. Remove gutters and downspouts and associated hardware adjacent to masonry and store during masonry repointing. Reinstall when repointing is complete.

1. Provide temporary rain drainage during work to direct water away from building.

3.2 MASONRY REPOINTING, GENERAL

A. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from **50 ft. (15 m)** away by Architect.

3.3 REPOINTING

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.
2. Joints indicated as sealant-filled joints.
3. Joints at locations of the following defects:

a. Holes and missing mortar.
b. Cracks that can be penetrated 1/4 inch (6 mm) or more by a knife blade 0.027 inch (0.7 mm) thick.
c. Cracks **1/8 inch (3 mm)**or more in width and of any depth.
d. Hollow-sounding joints when tapped by metal object.
e. Eroded surfaces 1/4 inch (6 mm) deep or deeper.
f. Deterioration to point that mortar can be easily removed by hand, without tools.
g. Joints filled with substances other than mortar.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, in accordance with procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of **2 times joint width and not less than that required to expose sound, unweathered mortar**. Do not remove unsound mortar more than **2 inches (50 mm)** deep; consult Architect for direction.
2. Remove mortar from brick and other masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of brick or other masonry units or widen joints. Replace or patch damaged brick or other masonry units as directed by Architect.

D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

NOT FOR BIDDING

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than **3/8 inch (9 mm)** until a uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.
3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than **3/8 inch (9 mm)**. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

F. Pointing with Sealant: Comply with Section 07 92 00 "Joint Sealants" and as follows:

1. After raking out, keep joints dry and free of mortar and debris.
2. Clean and prepare joint surfaces. **Prime joint surfaces unless sealant manufacturer recommends against priming.** Do not allow primer to spill or migrate onto adjoining surfaces.
3. Fill sealant joints with specified joint sealant.

    a. Install cylindrical sealant backing beneath the sealant. Where space is insufficient for cylindrical sealant backing, install bond-breaker tape.
    b. Install sealant using only proven installation techniques that ensure that sealant is deposited in a uniform, continuous ribbon, without gaps or air pockets, and with complete wetting of the joint bond surfaces equally on both sides. Fill joint flush with surrounding masonry and matching the contour of adjoining mortar joints.
    c. Install sealant as recommended in writing by sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead:

        1) Fill joints to a depth equal to joint width, but not more than 1/2 inch (13 mm) deep or less than 1/4 inch (6 mm) deep.

    d. Tool sealant to form smooth, uniform beads, slightly concave. Remove excess sealant from surfaces adjacent to joint.
    e. Do not allow sealant to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces, particularly rough textures. Remove excess and spillage of sealant promptly as the work progresses. Clean adjoining surfaces by the means necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes, as demonstrated in an approved mockup.

G. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

NOT FOR BIDDING

3.4 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage qualified testing agency to perform tests and inspections. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.

B. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

C. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION

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SECTION 05 51 33 METAL LADDERS

PART 1 GENERAL

1.01 SECTION INCLUDES
- A. Prefabricated ladders.

1.02 REFERENCE STANDARDS
- A. 29 CFR 1910.23 - Ladders; Current Edition.
- B. 29 CFR 1926.1053 - Ladders; Current Edition.
- C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.
- D. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- E. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- F. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- G. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements; 2008 (Reaffirmed 2018).
- H. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings; 2018, with Editorial Revision.
- I. ASTM B85/B85M - Standard Specification for Aluminum-Alloy Die Castings; 2018, with Editorial Revision.
- J. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- K. ASTM B210/B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes; 2019a.
- L. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire; 2019.
- M. AWS D1.2/D1.2M - Structural Welding Code - Aluminum; 2014, with Errata (2020).
- N. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.03 SUBMITTALS
- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2 PRODUCTS

2.01 MATERIALS - ALUMINUM
- A. Extruded Aluminum: ASTM B211/B211M, 6063 alloy, T6 temper.
- B. Sheet Aluminum: ASTM B209/B209M, 5052 alloy, H32 or H22 temper.
- C. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.

NOT FOR BIDDING

D. Aluminum-Alloy Bars: ASTM B211/B211M, 6061 alloy, T6 temper.
E. Aluminum-Alloy Sand Castings: ASTM B26/B26M.
F. Aluminum-Alloy Die Castings: ASTM B85/B85M .
G. Bolts, Nuts, and Washers: Stainless steel.
H. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

2.02 PREFABRICATED LADDERS

A. Prefabricated Ladder: Welded metal unit complying with ANSI A14.3; factory fabricated to greatest degree practical and in the largest components possible.
   1. Components: Manufacturer's standard rails, rungs, treads, handrails. returns, platforms and safety devices complying with the requirements of the MATERIALS article of this section.
   2. Materials: Aluminum; ASTM B211/B211M 6063 alloy, T52 temper.
   3. Finish: Mill finish aluminum.
   4. Manufacturers:
      a. Industrial Ladder & Scaffolding, Inc.: www.anyladder.com/#.
      b. O'Keeffe's Inc; Model : www.okeeffes.com/#.
      c. Precision Ladders, LLC; Fixed Alumnium Wall Ladder: www.precisionladders.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 Fixed wall mounted ladder with platform.

A. Basis of Design O'Keeffe's Inc; Model 503A:
   1. 1-1/4″ patented deeply serrated square rungs
   2. Non-spark, high strength 6061-T6 alloy rungs and 6063-T5 alloy extrusions
   3. Rungs capable of withstanding 1,500 lb. load
   4. Off-floor Mounting Bracket with 7″ backset.

B. Basis of Design O'Keeffe's Inc; Model 501 Heavy Duty Tubular Rail:
   1. 1-1/4″ patented deeply serrated square rungs
   2. Non-spark, high strength 6061-T6 alloy rungs and 6063-T5 alloy extrusions
   3. Rungs capable of withstanding 1,500 lb. load
   4. Off-floor Mounting Bracket with 7″ backset.
   5. Extendable safety post accessory.
   6. Landing Platform accessory

2.04 FINISHES - ALUMINUM

A. Exterior Aluminum Surfaces: Class I natural anodized.
B. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils (0.018 mm) thick.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
C. Obtain approval prior to site cutting or making adjustments not scheduled.

NOT FOR BIDDING

END OF SECTION

NOT FOR BIDDING

SECTION 06 10 26 – ROOFING ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Rooftop equipment bases and support curbs.
2. Roof wood blocking and nailers.
3. Fasteners.
4. Isolation barrier membrane.

1.3 REFERENCES

A. American Lumber Standard Committee (ALSC)

1. Voluntary Product Standard PS 20-20, American Softwood Lumber Standard.

B. American Society of Mechanical Engineers (ASME)

1. ASME B18.2.1 - 2012, Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series).
2. ASME B18.6.1 - 1981, Wood Screws (Inch Series).

C. ASTM International (ASTM)

1. ASTM A307-21, Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.
2. ASTM A563/A563M–21a, Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric).
3. ASTM E488/E488M-18, Standard Test Methods for Strength of Anchors in Concrete Elements.
4. ASTM F593-17, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
5. ASTM F594 - 09(2020), Standard Specification for Stainless Steel Nuts.

D. American Wood Protection Association (AWPA)

1. Standard M4-21, Standard for the Handling, Storage, Field Fabrication and Field Treatment of Preservative-Treated Wood Products.
2. Standard U1-20, User Specification for Treated Wood.

NOT FOR BIDDING

E. FM Global

1. FM Global Property Loss Prevention Data Sheet 1-49, latest edition, Perimeter Flashing.

1.4 DEFINITIONS

A. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) or greater but less than 5 inches nominal (114 mm actual) in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. NLGA: National Lumber Grades Authority.
3. SPIB: The Southern Pine Inspection Bureau.
4. WCLIB: West Coast Lumber Inspection Bureau.
5. WWPA: Western Wood Products Association.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product, including but not limited to the following. Indicate component materials and dimensions and include construction and application details.

1. Products receiving a waterborne treatment: Include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
2. Wood-Preservative-Treated Materials: Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
3. Miscellaneous Lumber
4. Fasteners
5. Isolation Barrier Membrane

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: ALSC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency

NOT FOR BIDDING

certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by ALSC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1, Category UC3B for exterior construction not in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic, chromium, or ammonia.

B. After treatment, dry lumber in a kiln to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following.

1. Wood nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following

1. Blocking
2. Nailers.
3. Rooftop equipment bases and support curbs.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber and any of the following species.

1. Hem-fir (north); NLGA.
2. Mixed southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB, or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

NOT FOR BIDDING

2.4 PRESERVATIVE-TREATED PLYWOOD

A. Preservative Treatment by Pressure Process: AWPA U1, Use Category UC3b for exterior construction not in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic, chromium, or ammonia.

B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

C. Application: Treat items indicated on Drawings.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Provide all fasteners of Type 304 stainless steel.

B. Wood Screws for Attachment of Roof Blockings: Screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, torx or square drive, #10, length as require to provide minimum embedment of 1 ½" into substrate.

C. Screws for Attachment to Metal Deck: Self-drilling screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, torx or square drive, #10, 2 ½" length unless otherwise noted.

D. Screws for Attachment to Steel Angles or Framing: Self-drilling screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, torx or square drive, #12, minimum 2 ½" length unless otherwise noted.

E. Lag Bolts: ASME B18.2.1.

F. Bolts: Steel bolts complying with ASTM A 307, Grade A, with ASTM A 563 hex nuts and, where indicated, flat washers.

G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency. Anchor to expand by tightening or hammering a pin after inserting the anchor into a pre-drilled hole

1. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2

NOT FOR BIDDING

2.6 MISCELLANEOUS MATERIALS

A. Isolation Barrier Membrane: Self-adhering high-temperature sheet, minimum 15 mils thick, consisting of cross-laminated polyethylene film top surface laminated to layer of buytl adhesive, with release liner backing, cold-applied. Provide in roll width to match or exceed width of area to be protected. Provide primer when recommended by membrane manufacturer.
   1. Products: Subject to compliance with requirements, products that may be incorporated into the work include but are not limited to the following.
      a. Grace Construction products, a unit of W.R Grace & Co.: Vycor Pro.
      b. Equivalents meeting requirements.

B. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fir carpentry to other construction. Scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous isolation barrier membrane between wood and metal decking.

C. Sort and select lumber so natural characteristics will not interfere with installation or with attaching other materials to lumber. Use lumber in lengths required to minimize number of joints and optimize joint arrangement. Do not use materials with defects that interfere with function of member.

D. Apply field treatment to cut surfaces of preservative-treated lumber. Comply with AWPA M4.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

   1. Provide 1/2 inch vent space between each length of blocking.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

D. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with recommendations of FM Global Loss Prevention Data Sheet 1-49 and following.

NOT FOR BIDDING

1. Anchor bottom blocking to steel angles with minimum 3/8 inch stainless steel bolts with washers, at a maximum 24 inches on center.
2. Bottom blocking

    a. Attach with stainless steel self-drilling screws, penetrating metal decking at least one inch in two rows, spaced not more than 24 inches on center and within twelve inches of ends of blocking lengths.
    b. Provide isolation barrier membrane between deck and blocking at locations where bottom blocking is to be attached directly to metal decking.

        1) Install wrinkle free.
        2) Apply primer if required by membrane manufacturer.
        3) Use primer rather than nails for installing membrane at low temperatures. Overlap edges not less than 3 ½ inches.
        4) Roll laps with roller. Cover membrane within 14 days.

3. Attach subsequent blocking to bottom blocking with stainless steel screws, penetrating at least 1 ¼ inches in two rows, spaced not more than 24 inches on center and within twelve inches of ends of blocking lengths.
4. Outside building corners

    a. Subject to subparagraph below, locate fasteners not more than 12 inches on center and not more than 12 inches from corner.
    b. Decrease fastener spacing as required either to meet a minimum withdrawal force of 100 pounds per fastener or to comply with FM 1-49 recommendations.

END OF SECTION

NOT FOR BIDDING

SECTION 07 01 50.19 - PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes

1. Full tear-off of roof in sections as required by Contract scope.
2. Removal of base flashings.
3. Re-cover preparation of entire roof.

1.3 INFORMATIONAL SUBMITTALS

A. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

B. Provide fastener pull-out test report.

1.4 FIELD CONDITIONS

A. General

1. The descriptions of existing roofing systems below combine information from archival drawings, field observations, and Architect's discussions with previous roofing installers.
2. Verify existing systems in field.

B. Existing Roofing Systems

1. Roof A
    a. Roofing: EPDM.
    b. Insulation: Insulation approximate total thickness 2" inches.
    c. Structural roof deck: plywood
2. Roof B: N.I.C.
3. Roof C: New elastomeric silicone roof coating to be applied over existing construction to remain.
    a. Roofing: EPDM.
    b. Insulation: Tapered approximate total thickness varying from 3.5" inches to 7".
    c. Structural roof deck: steel deck
4. Roof D:
    a. Roofing: EPDM.
    b. Insulation: Insulation approximate total thickness 3.5" inches.
    c. Structural roof deck: Concrete

NOT FOR BIDDING

5. Roof E:
   a. Roofing: EPDM.
   b. Insulation: Insulation approximate total thickness 1.5" inches.
   c. Structural roof deck: 3” structural wood deck.
6. Roof F:
   a. Roofing: Asphalt Shingles.
   b. Insulation: Insulation approximate total thickness 1.5" inches.
   c. Structural roof deck: 3” structural wood deck
7. Roof G:
   a. Roofing: EPDM.
   b. Insulation: Tapered insulation approximate total thickness varying from 3.5" to 6.5” inches.
   c. Structural roof deck: structural steel deck.
8. Roof H: N.I.C.
9. Roof J: N.I.C.
10. Roof K: New elastomeric silicone roof coating to be applied over existing construction to remain.
    a. Roofing: EPDM.
    b. Insulation: Tapered approximate total thickness varying from 3.5" inches to 7”.
    c. Structural roof deck: 3” structural wood deck.
11. Roof L: N.I.C.
12. Roof M: N.I.C.

1.5 PERFORMANCE REQUIREMENTS

A. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

B. Include removal and temporary protection of existing rooftop equipment.

C. Limit construction loads on existing roof areas to 200 PSF for rooftop equipment wheel loads and 200 PSF for uniformly distributed loads.

D. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

   1. Remove only as much roofing in one day as can be made watertight in the same day.

E. Hazardous Materials: It is not expected that hazardous materials, such as asbestos-containing 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.
   2. Hazardous materials will be removed by Owner under a separate contract.

NOT FOR BIDDING

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION

3.1 PREPARATION

A. Verifications

1. Verify that rooftop utilities and service piping have been shut off before beginning the Work.
2. Test existing roof drains to verify that they are not blocked or restricted.
3. If live utilities or drain blockages are found, immediately notify Architect.

B. During removal operations, have sufficient and suitable materials on site to facilitate rapid installation of temporary protection in the event of unexpected rain.

3.2 ROOF TEAR-OFF

A. Existing Materials

1. Remove existing roofing system components down to the existing deck to remain.
    a. Built-up roofs, felts, membranes, recovery boards, roof insulation, and similar components.
    b. Base flashings, perimeter edge flashings, gravel stops, and flashings at pipes, curbs, mechanical equipment, and other penetrations.
    c. Counterflashings except as noted below or where noted to remain in Drawings.
    d. Expansion joint covers.
    e. Roof drains.
    f. Roof hatch (To be re-used).
    g. Wood blocking, curbs, and nailers except where noted to remain in Drawings.
    h. Fasteners attaching the components above to existing decks to remain.
2. Retain the following existing roofing system components in place.
    a. Metal counterflashings embedded in masonry parapets, except where as noted to receive new embedded counterflashings.

B. Roof drains

1. Do not remove an existing roof drain without installing a new drain in its place on the same day.
2. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.
    a. Before starting each day's work, install drain plugs specifically designed to prevent debris from entering or blocking roof drains and conductors.
    b. Maintain plugs in place while performing work.
    c. Remove drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
3. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.

NOT FOR BIDDING

3.3 DECK PREPARATION

A. Inspect deck after tear-off of roofing system.

B. Immediately notify Architect if any part of the existing deck shows conditions unsuitable for receiving new roofing or if structural integrity of deck is suspect. Do not proceed with installation until directed by Architect. Conditions warranting notification include but are not limited to the following.

1. Broken or loose fasteners are observed.
2. Deck shows evidence of rot or decay.
3. Deck otherwise feels or appears to be inadequately attached.

3.4 FASTENER PULL-OUT TESTING

A. Perform fastener pull-out tests according to SPRI FX-1. Submit test report to Architect and roofing manufacturer before installing new roofing system.

1. Obtain roofing manufacturer's approval to proceed with specified fastening pattern commensurate with pull-out test results.

3.5 DISPOSAL

A. Collect demolished materials and place in containers.

B. Promptly dispose of demolished materials.

1. Transport and legally dispose of demolished materials off site.
2. Do not allow demolished materials to accumulate on site.

C. Storage or sale of demolished items or materials on site is not permitted.

END OF SECTION

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DIVISION 07 01 50.61 - ELASTOMERIC SILICONE ROOF COATING FOR RESTORING SINGLE-PLY ROOFING MEMBRANES

PART 1 – GENERAL

1.1 SUMMARY

A. This specification provides a remedial coating system for application over pre-existing weathered EPDM Single-Ply Membrane Roofing Systems. The use is restricted to circumstances where the membrane is at least 45-mils, aged less than 25 years, and the surface is in sound condition but requires a renewal of the membrane surface due to the normal effects of aging and use.

B. The Elastomeric Silicone Roof Coating in this specification have a moderate rate of water vapor transmission and not recommended for use on cold storage or cryogenic structures. Such structures may have constant high-water vapor drive causing long-term accumulation of moisture in the insulation.

C. This specification is intended only as a guide for the development of a project specification. The suitability of this specification for a particular project must be determined by a qualified representative of the owner.

Conditions to check and corrections to consider are:

- The type of pre-existing system must be identified.
- All pre-existing membranes must be fully adhered or mechanically attached and intact
- The structural decking must be sound.

D. Adhesion tests are strongly recommended prior to bidding. A Coating Applicator that is licensed by the product manufacturer should perform wet and dry adhesion tests as instructed in product General Instructions GW-1-3 Adhesion Testing Procedures using the products listed in Section 2.2.

1.2 RELATED REQUIREMENTS

A. Section 06 10 26 "Roofing Rough Carpentry" for wood nailers, curbs, and blocking.
B. Section 07 62 00 - Sheet Metal Flashing and Trim: Counterflashings, reglets.
C. Section 07 71 00 - Roof Specialties: Roof edges to be included in roofing system warranty.
D. Section 07 71 29 – Manufactured Roof Expansion Joints.
E. Section 07 72 00 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.
F. Section 07 92 00 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

1.3 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. **PRODUCT DATA:**
Submit manufacturer's standard submittal package including specification, installation instructions, and general information for each waterproofing material.

C. **APPLICATOR QUALIFICATIONS:**
Submit current Letter of Good Standing from the specified waterproofing manufacturer.

NOT FOR BIDDING

D. **SUBSTRATE CONDITIONS:**

1. Applicator to present to owner a completed inspection report verifying substrate condition and any noted defects not specifically addressed in regard to the installation of the coating.
2. Surface shall be free from loose dirt, stone, debris, moisture, and shall be in stable condition. Any work on the area to receive this application shall be completed prior to the installation of the coating.
3. Applicator shall complete a substrate inspection prior to the start of the installation of the coating. The architect/owner and Applicator shall accept the substrate. Start of the work constitutes acceptance.

1.4 QUALIFICATIONS

A. Primary waterproofing materials shall be the products of a single manufacturer. Secondary materials shall be recommended by the primary manufacturer. The manufacturer shall have a minimum of ten (10) years' experience in the manufacturing of materials of this type.

B. Applicators shall have a minimum of five (5) years' experience in the application of waterproofing materials of the type specified. The Applicator shall possess a current Letter of Good Standing from the specified waterproofing manufacturer.

1.5 PRE-BID CONFERENCE:

A. Ten (10) working days prior to the bid opening there is to be a mandatory Pre-Bid Conference. Those not attending the Pre-Bid Conference will not be allowed to bid the project. All products considered an equal to the specified product or any changes in the scope of work, installation, or specifications must be presented at the Pre-Bid Conference. If a change in the specifications is accepted, it will be considered as an alternate and will be presented as a bid addendum issued five (5) working days prior to the bid opening. No other changes to the specification or bid documents will be accepted.

B. Materials other than those specified shall be submitted to the architect/owner for approval no later than ten
(10) days prior to the bid date. In requesting prior approval, it shall be necessary to submit:

1. A letter of certification, signed by an officer of the manufacturer, stating that the alternate material is equal to or better than the specified product.
2. Independent laboratory test data giving physical property values in comparison to the specified material.

C. **PRE-INSTALLATION CONFERENCE:**

Just prior to the commencement of the installation, meet at the jobsite with a representative of the coating manufacturer, Applicator, general contractor, architect, and other parties affected by this section. Review the methods and procedures, substrate conditions, scheduling, and safety.

1.6 DELIVERY, STORAGE AND HANDLING

A. Owner/owner's representative shall reject damaged or non-conforming materials. Rejected materials must be removed immediately from the job site.

B. Store the coating materials as recommended by the manufacturer and conforming to applicable safety regulatory agencies: town or city, state, and federal. Refer to all applicable data including, but not limited to: Safety Data Sheets, Product Data Sheets, product labels, and

NOT FOR BIDDING

specific instructions for personal protection.

1.7 Provide adequate ventilation, protection from hazardous fumes, and overspray potential to workers and associated trades in close proximity of the site application.

A. WARRANTY

B. Manufacturer warrants that the material supplied will meet or exceed physical properties as published. The Applicator guarantees that workmanship will be free of defects in coating application. Since performance of previously applied coatings is beyond the control of Manufacturer and Applicator, requests for additional warranty coverage shall be subject to prior approval by Manufacturer.

C. A twenty (20) YEAR labor and material warranty must be obtained through the manufacturer.

1.8 PROTECTION OF BUILDING AND OCCUPANTS:

A. All surfaces not to receive the coating specified shall be protected from overspray hazard, e.g., windows, doors, exterior surfaces and facades, parking lots, and vehicles. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture.

B. Applicator to post signs noting potential overspray hazard within 400 ft (121.90 m) of applications.

C. All air intake ventilation equipment shall be turned off to prevent fumes from entering building.

D. Surfaces damaged during application shall be restored at no expense to the owner.

E. No smoking signs to be posted as mandated by local fire officials.

F. SUBSTRATE: Proceed with work as specified only after substrate construction, preparation, and detail work has been completed.

G. EQUIPMENT: All equipment used during operations shall be located so as not to adversely affect the daily operations or endanger occupants, structure, or materials on-site. All spray equipment must be grounded during operations.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

1. Gaco, www.gaco.com – Manufactured by Amrize Building Envelope LLC.
   Other brands manufactured by Manufactured by Amrize Building Envelope LLC as noted.
2. Carlisle Roofing Systems, Inc: www.carlisle-syntec.com.
3. Versico, a division of Carlisle Construction Materials Inc: www.versico.com/sle.
4. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 MATERIALS

A. **CLEANER**:
Concentrated Cleaner

B. **PRIMER**:
Primer (Note: For New and aged single-ply)

C. **FLASHING**:

1.) Reinforcing Polyester Mesh Tape
2.) Silicone Roof Sealant

NOT FOR BIDDING

3.) Mastic
4.) Flashing grade roof sealant

D. **SILICONE COATING:**
Elastomeric Silicone Roof Coating has the following physical properties:

Elastomeric Silicone Roof Coating		
PROPERTY	***VALUE***	***TEST METHOD***
TENSILE STRENGTH	275 psi (1.9 MPa)	ASTM D2370
ELONGATION	196 %	ASTM D2370
SOLIDS CONTENT	96.5 % (By Weight) 95 % (By Volume)	ASTM D1644 ASTM D2697
VOC	< 50 g / L	EPA Method 24
REFLECTANCE	Initial: 0.87 After Soiling: 0.81	ASTM C1549 S4200 White
WATER VAPOR PERMEABILITY	6.4 Perms	ASTM E96-B

PART 3 – EXECUTION

3.1 **EXAMINATION**

A. A moisture survey is strongly recommended to identify any wet roofing materials. All wet roofing materials must be removed and replaced prior to the coating application.

B. Repair to the structural components of the roof should be completed.

C. Verify that the drains, vents, ducts, gutters, metal cap flashing, or other penetrations have been replaced or modified.

D. An aged reinforced single-ply membrane exhibiting significant millage loss to the point that the reinforcement scrim is exposed must be disqualified as a suitable substrate to receive a coating system. Aged thermoplastic membranes that shrink or have become brittle due to plasticizer loss must be disqualified as suitable substrates to receive a coating system. Please contact Technical Services for recommendations.

3.2 **PREPARATION**

A. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease, and other materials that may damage the membrane.
B. Fill all surface voids in the immediate substrate that are greater than 1/4″ (6 mm) wide with fill material acceptable to membrane Manufacturer.
C. Seal, grout, or tape deck joints, where needed, to prevent seepage into building.
D. BIOLOGICAL CONTROL:

NOT FOR BIDDING

Areas of algae, mildew or fungus on the roof membrane or the existing coating should be treated with a solution of 1-part household bleach to 3 parts water, followed by a power washer rinse using clear water.

E. **DRYING:**

Allow surfaces to thoroughly dry to prevent blistering of the Elastomeric Silicone Roof Coating. Examine roof, paying attention to areas of physical damage to determine that residual water has in fact dried before applying Elastomeric Silicone Roof Coating.

NOTE: Drying time depends on weather conditions such as temperature, humidity, and air movement. The above drying times assume good weather (70 °F / 21 °C daytime temperature) and no rain. Conditions of lower temperature and rain will require a longer period for drying

3.3 INSTALLATION

A. General

B. Install roofing, insulation, flashings, and accessories in accordance with roofing Manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.

C. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

D. Do not start work until Pre-Installation Notice has been approved by Manufacturer as confirmation that this project qualifies for a Manufacturer's warranty.

E. Perform work using competent and properly equipped personnel.

F. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the Applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.

G. Install roofing membrane only when surfaces are clean, dry, smooth, and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult Manufacturer for recommended procedures during cold weather. Do

NOT FOR BIDDING

not work with sealants and adhesives when material temperature is outside the range of 60 to 80 °F (15 to 25 °C).

H. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.

I. Protect from spills and overspray from bitumen, adhesives, sealants, and coatings.

J. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.

K. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.

L. Until ready for use, keep materials in their original containers as labeled by the Manufacturer.

M. Consult membrane Manufacturer's instructions, container labels, and Safety Data Sheets (SDS) for specific safety instructions. Keep all adhesives, sealants, primers, and cleaning materials away from all sources of ignition.

N. **PRIMER:**

1. Thinners and Cleaners: As recommended by Manufacturer, compatible with membrane.
2. Membrane Adhesive: As recommended by Manufacturer, and:
3. Provide low-VOC, solvent-based EPDM bonding adhesive that complies with Ozone Transport Commission (OTC) Model Rule, Single Ply Roofing Adhesives; www.otcair.org.
4. Membrane Adhesive Primer: As recommended by Manufacturer, and:
5. Provide low-VOC, solvent-based EPDM adhesive primer that complies with Ozone Transport Commission (OTC) Model Rule, Single Ply Roofing Adhesive Primers; www.otcair.org.

O. **AT ALL FLASHING SEAMS, CORNERS AND LAPS**:

1. Apply Elastomeric Silicone Roof Coating as recommended by Manufacturer

NOTE: Refer to manufacturer’s product instructions and/or data sheet for important information regarding drying times and other important factors to consider regarding application.

E. **HVAC / ELECTRICAL:**

Existing HVAC Units and other equipment on curbs with a membrane flashing: The membrane flashing must be coated up to the bottom of the metal cap of the unit and sealed underneath with a 100% silicone sealant. Curbs must be a minimum of 8 in (203 mm) above the roofing membrane.

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F. **SLEEPERS:**

Any units that are sitting on 4 x 4 in (102 x 102 mm) wooden sleepers will be lifted so that the membrane underneath the units can be cleaned, primed, and coated. An approved slip sheet shall be placed under the sleepers to protect the coating system. If the units are not lifted off the deck to be able to accomplish this procedure, the untreated area will be excluded from the warranty.

G. **SILICONE COATING:**

Apply one (1) coat of Elastomeric Silicone Roof Coating at the average rate of 2.25 gal / 100 ft² (8.5 L / 9.3 m²) to obtain 36 mil Wet Film Thickness (WFT) / 34 mil Dry Film Thickness (DFT). Coat all surfaces including expansion joint covers and flashings. At all edges and penetrations, an extra pass must be applied.

3.4 FIELD QUALITY CONTROL

A. Any variations from the specified limits found by the Applicator or owner's representative shall be corrected by the Applicator.

B. **MINIMUM DRY FILM THICKNESS (DFT) REQUIREMENT:**

It is recommended adding a 10% variance factor to meet the minimum Dry Film Thickness (DFT) mil requirement to qualify as a warrantable application. It is the Applicator's responsibility to calculate the amount of coating needed to obtain the minimum Dry Film Thickness (DFT) mil thickness.

C. No traffic shall be permitted on the coated surface for a minimum of three (3) days. Damage to the surface by other trades shall not be the responsibility of the Applicator.

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SECTION 07 14 00

FLUID-APPLIED MEMBRANE WATERPROOFING

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Provide a cold fluid-applied polyurethane waterproofing system on structural concrete, plywood sheathing, cover board, metal or other substrates.

1. Work includes substrate preparation.
2. Work includes bridging and sealing air leakage and water intrusion pathways and gaps including connections of the walls to the roof air barrier, and penetrations of the building envelope including piping, conduit, ducts and similar items.

B. Related Work: The following items are not included in this Section and are specified under the designated Sections:

1. Section 07 60 00 – FLASHING AND SHEET METAL.
2. Section 07 92 00 - JOINT SEALANTS

1.3 PERFORMANCE REQUIREMENTS

A. Cold fluid applied polyurethane waterproofing system is intended to perform as a continuous barrier against liquid water and to flash or discharge to the exterior incidental water. Membrane system is intended to receive an impervious overburden of optional insulation and concrete, tile in a cementitious setting bed, pavers in a sand setting bed, or asphalt pavement, and shall accommodate movements of building materials as required with accessory sealant materials at locations such as: changes in substrate, perimeter conditions and penetrations. Installed waterproofing membrane system shall not permit the passage of water and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.

B. Manufacturer shall provide all primary waterproofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

C. Manufacturer must have completed a Cradle-To-Grave Life Cycle Analysis (LCA) and Environmental Product Declaration (EPD) according to ISO 14025:2006 for the roofing/waterproofing system.

1.4 SUBMITTALS

A. Submittals: Comply with project requirements for submittals as specified in Division 01.

B. Product Data: For each product.

C. Shop Drawings: Manufacturer's standard details and shop drawings for the specified system.

D. Manufacturer must provide a complete Cradle-To-Grave Life Cycle Analysis (LCA) and Environmental Product Declaration (EPD) according to ISO 14025:2006 for the roofing/waterproofing system.

E. Installer's Authorization: Installer shall provide written documentation from the manufacturer of their authorization to install the system, and eligibility to obtain the warranty specified in this section.

F. Manufacturer' Certification: Certification showing full time quality control of production facilities and that each batch of material is tested to ensure conformance with the manufacturer's published physical properties.

G. VOC Certification: Manufacturer's certification that all waterproofing system products meet current Volatile Organic Compound (VOC) regulations as established by the State in which they are being installed; and stating total VOC content, in grams per liter, for all system components (i.e. primers, adhesives, coatings, etc.).

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Manufacturer shall demonstrate qualifications to supply materials of this section by certifying the following:

1. Membrane Manufacturer shall have been producing fluid-applied waterproofing membranes for over 30 years.
2. Membrane Manufacturer shall have available an in-house technical staff to assist the contractor, when necessary, in the application of the products and site review of the assembly.

B. Installer's Qualifications: The Contractor shall demonstrate qualifications to perform the Work of this Section by submitting certification or license by the waterproofing membrane manufacturer as a trained and authorized applicator of the product the installer intends to use.

C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary waterproofing manufacturer.

D. Materials Compatibility: All materials included in the waterproofing assembly, as well as associated materials adhered to/applied beneath the waterproofing membrane shall have been tested and verified to be compatible. Include written testing documentation if requested by Architect.

E. Final Inspection: Manufacturer's representative shall provide to the Architect a comprehensive site visit report after the completion of the waterproofing system.

F. Applicable Regulations: Comply with local code and requirements of authorities having jurisdiction. Do not exceed VOC regulations as established by the State in which they are being installed, including total VOC content, in grams per liter, for all system components (i.e. primers, adhesives, coatings, and similar items).

NOT FOR BIDDING

G. Waterproofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of waterproofing terms related to this section.

1.6 PRE-INSTALLATION CONFERENCE

A. Prior to scheduled commencement of the waterproofing installation and associated work, conduct a meeting at the project site with the installer, architect/consultant, owner, manufacturer's representative and any other persons directly involved with the performance of the Work. The Installer shall record conference discussions and to include decisions and agreements reached (or disagreements) and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to the Work.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver all waterproofing materials to the site in original containers, with factory seals intact.

B. Store all goods in their original undamaged containers in a clean, dry location within their specified temperature range on the product data sheet.

C. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.

D. Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each workday. Do not remove any protective tarpaulins until immediately before the material will be installed.

1.8 PROJECT CONDITIONS

A. Weather: Proceed with waterproofing only when existing and forecasted weather conditions permit. Membrane application can proceed when precipitation is imminent. Sikalastic® RoofPro is capable of curing in immersion immediately after application. Visual marks in the form of pock marks may occur if uncured membrane is exposed to rainfall but is not considered a limiting factor in the performance of the waterproofing membrane. Ambient temperatures shall be above 41°F (5°C) when applying the waterproofing system.

B. All surfaces to receive the waterproofing membrane shall be free from visible water, dew, frost, snow and ice. Application of waterproofing membrane shall be conducted in well-ventilated areas.

C. Waterproofing Membrane:

1. Waterproofing membrane is not intended to be exposed or in contact with a constant temperature below -22°F (-30°C) or in excess of 176°F (80°C). See technical data sheets for limitations, i.e., hot pipes and vents or direct steam venting.
2. Specified waterproofing membrane is non-flammable and VOC compliant. Consult container, packaging labels and Safety Data Sheets (SDS) for specific safety information.
3. Specified waterproofing membrane is resistant to gasoline, paraffin, fuel oil, mineral spirits, and moderate solutions of acids and alkalis, acid rain and detergents. Some low molecular weight alcohols can soften. Any exposure to foreign materials or chemical

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discharges shall be presented to membrane manufacturer for evaluation to determine any impact on the waterproof membrane assembly performance prior to installation.

D. Contractor shall ensure adequate protection during installation of the waterproofing system.

E. Specified waterproofing membrane may be used as a temporary waterproofing barrier when applied at a wet film thickness of 15-20 mils to a properly prepared deck. When the specified waterproofing membrane is used as a temporary waterproofing barrier the waterproofing membrane does not need to be removed prior to installation of the finished waterproofing system. An approved Sikalastic RoofPro Primer will need to be applied to the approved deck prior to applying the temporary roofing/waterproofing barrier. Sika Reactivation Primer or Sika Concrete Primer Lo-VOC will be applied in between the existing temporary roofing/waterproofing barrier and finished roofing/waterproofing system after existing temporary barrier is clean, dry and sound.

F.

1.9 WARRANTY

A. Warranty: Provide manufacturer's standard warranty. Materials warranty shall be for a minimum of one year starting at the date of Substantial Completion. System warranty shall be for the following duration in accordance with specified system.

1. Warranty Length: 25 years.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis-of-Design Manufacturer: Sika Corporation, 201 Polito Avenue, Lyndhurst NJ 07071. Toll Free 800-933-SIKA (7452), www.sikausa.com. No substitutions without prior written approval by the Architect. Representative: _____

2.2 WATERPROOFING SYSTEM

A. Fluid-Applied Membrane System, 25 Year Warranty: Sikalastic RoofPro 25 WP, Premium Reemat:

1. Base Layer: Sikalastic 644 Lo-VOC, 45 mils wet film thickness; 35 sf/gal coverage rate approx.
2. Top Layer #1: Sikalastic 644 Lo-VOC, 25 mils wet film thickness; 64 sf/gal coverage rate approx.
3. Top Layer #2: Sikalastic 644 Lo-VOC, 25 mils wet film thickness; 64 sf/gal coverage rate approx.

B. Fluid-Applied Membrane System, 25 Year Warranty: Sikalastic RoofPro WP 25, Sika 170 Fleece:

1. Base Layer: Sikalastic 644 Lo-VOC, 60 mils wet film thickness; 27 sf/gal coverage rate approx.

NOT FOR BIDDING

2. Top Layer: Sikalastic 644 Lo-VOC, 35 mils wet film thickness; 45 sf/gal coverage rate approx.

2.3 MEMBRANES AND COATINGS

A. Base embedment coat with either Reemat or Fleece reinforcement shall be Sikalastic® 644 Lo-VOC by Sika Corp, a single component, cold, fluid applied, moisture triggered, aliphatic, polyurethane base coat membrane.

B. Top coat with base coat shall be Sikalastic 644 Lo-VOC by Sika Corp, a single component, cold, fluid applied, moisture triggered, aliphatic, polyurethane top coat membrane.

C. Base coat and top coat membranes shall be low in VOC's and be a one component elastomeric polyurethane membrane that may be applied by brush, roller or spray. Membrane shall have the following physical properties.

D. Liquid Property Requirements:

1. VOC Content, ASTM D-2369-81: < 50 g/l
2. Volume Solids, ASTM D2697: 80 % minimum.
3. Weight Solids: ASTM D1644: 81 % minimum.
4. Sag Resistance, ASTM D4400: No sag at 700 micrometers (0.028 in. / 28 mil)

E. Film Physical Property Requirements:

1. Tensile Strength (Tension): ASTM D412: Minimum 1.86 MPa (270lb/in2)
2. Elongation: ASTM D412 : MIN 200%.
3. Accelerated Weathering FL/UV – 5000 Hours, ASTM G 154, No cracking or checking.
4. Water Vapor Transmission, Permeability / Permeance: ASTM E96: Maximum 8.5 gms/m2/ day (0.033 perm-inches).
5. Flexibility – Mandrel Bend, ASTM D522: Pass, no cracking or flaking.
6. Tear Resistance, ASTM D625: Minimum 5.8 kN/m (33 lbf/in)
7. Indentation Hardness, ASTM D2240: 82 Durometer Units (+/- 5 units)
8. Dynamic Puncture Resistance, ASTM D5635: Minimum 15 joules (357 ft.pounds)
9. Static Puncture Resistance, ASTM D5602: Minimum 20.7 kg. (45.5 lbs.)

2.4 MEMBRANE REINFORCEMENT – FIBERGLASS

A. Reinforcement for the waterproofing membrane system shall be Sika Reemat by Sika Corp, a conformable, random strand fiberglass mat specifically designed to provide greater impact resistance and greater resistance to excessive thermal and structural movement while maintaining elasticity and membrane film integrity.

B. Supplemental reinforcement of the waterproofing membrane system specifically designed for local reinforcement of the waterproofing membrane at structural cracks, expansion joints and transitions between dissimilar materials shall be Sika Flexitape Heavy by Sika Corp., a nylon mesh OR Sika Joint Tape SA by Sika Corp., a self-adhering polymeric rubberized tape with woven polyester facer.

NOT FOR BIDDING

2.5 MEMBRANE REINFORCEMENT – POLYESTER

A. Reinforcement for the waterproofing membrane system shall be Sika Fleece by Sika Corp., a non-woven, needle-punched polyester fleece specifically designed to provide greater impact resistance and greater resistance to excessive thermal and structural movement while maintaining elasticity and membrane film integrity.

B. Supplemental reinforcement of the waterproofing membrane system specifically designed for local reinforcement of the waterproofing membrane at structural cracks, expansion joints and transitions between dissimilar materials shall be Sika Flexitape Heavy by Sika Corp., a nylon mesh OR Sika Joint Tape SA by Sika Corp., a self-adhering polymeric rubberized tape with woven polyester facer.

2.6 FILLET BEAD AND PENETRATION SEALANT

A. Sealant for fillet bead applications and membrane penetrations shall be Sikaflex®-11 FC by Sika Corp., a one-part, polyurethane sealant suitable for fillet bead transition compound to be applied prior to the installation of the membrane system at changes in substrate direction, cove beads, cracks in the substrate and penetrations of the roof /waterproofing system.

B. Exposed finish sealant shall be Sikaflex Hyflex 150 LM by Sika Corp., a one-part low modules hybrid sealant OR Sikasil WS-295. A one-part, low-modulus, weather sealing, silicone sealant suitable for finishing terminations at saw cuts and all UV exposed sealant terminations. SikaHyflex-150 LM is also suitable for fillet bead transition, changes in substrate direction, cracks in the substrate and penetrations of the roof before installation of the RoofPro membrane system.

2.7 PRIMERS

A. Concrete, roof cover boards and sealing cementitious and gypsum-based substrates shall be primed with Sika Concrete Primer Lo-VOC by Sika Corp., a single component, rapid curing, high solids, moisture cured primer or Sikalastic® EP Primer/Sealer or Sikalastic® EP Primer Rapid by Sika Corp., a two-component, cyclo-aliphatic, amine cured material.

B. Water based primer for concrete, roof cover boards, masonry and previously coated surfaces shall be Sika Bonding Primer by Sika Corp., a fast-drying, two-component, water-based, adducted polyamide epoxy primer.

C. Green and damp concrete shall be primed with Sikalastic® GDC primer by Sika Corp., a 2-component, moisture mitigating epoxy primer for Green, Damp and Dry Concrete surfaces as well as plywood.

D. Metal substrates shall be primed with Sikalastic® EP Primer/Sealer by Sika Corp., a two-component, cyclo-aliphatic, amine cured material with a high level of corrosion resistance for metal, modified bitumen surfaces, and chemically treated wood or the faster curing version Sikalastic® EP Primer Rapid by Sika Corp.,

E. Overpainting Sikalastic-600 Series shall be done with Sika Bonding Primer by Sika Corp: fast-drying, two-component, water-based, adducted polyamide epoxy primer also acceptable for roof coverboards.

NOT FOR BIDDING

F. Wood substrates shall be primed with Sikalastic® EP Primer/Sealer by Sika Corp., a two-component, cyclo-aliphatic, amine cured material with a high level of corrosion resistance for metal, modified bitumen surfaces, and chemically treated wood.

G. Non-conductive substrates where a conductive surface is required shall be Sikalastic® Conductive Primer by Sika Corp., a two-component, universal conductive primer for high voltage, dry leak detection. Suitable for use on most sound substrate surfaces where both a penetrative and surface-lying effect is required. Also suitable for use on metal, modified bitumen surfaces and chemically treated wood.

H. SikaFast 3341 a two-component methyl methacrylate-based (MMA) adhesive used to adhere RoofPro membrane system to PVDF (Kynar) finished edge metal.

I. Existing Sikalastic-600 Series Membrane (if over 7 days old) shall be primed with Sika Reactivation Primer or Sika Concrete Primer Lo-VOC.

2.8 CONCRETE REPAIR AND PATCHING

A. Cementitious repair mortar to repair bug holes, spalled areas, and other non-structural surface defects, or to slope decks shall be SikaQuick 1000 by Sika Corp., a two component, polymer-modified, Portland cement, fast-setting, trowel-grade mortar. Vertical & Overhead Cementitious repair mortar to repair bug holes, spalled areas and other non- structural surface defects shall be SikaQuick VOH.

B. Epoxy resin or urethane to fill uneven areas and birdbaths shall be Sikadur-22 Lo-Mod or Sikalastic-720.

2.9 COVER BOARD/THERMAL BARRIER

A. Glass-faced/treated gypsum core, moisture resistant cover board/thermal barrier, min. ½" thick, intended for use as a thermal barrier directly to the structural wood or steel deck. Cover board shall be Dens-Deck Prime by Georgia-Pacific Corp.

B. Glass-faced/cementitious core, moisture resistant cover board/thermal barrier, min. ½" thick, intended for use as a thermal barrier directly to the structural wood or steel deck. Cover board shall be Securock Cement Board by United States Gypsum Corp.

2.10 VAPOR BARRIER SYSTEM

A. Cold self-adhering polyethylene vapor barrier with rubberized SBS adhesive backing and silicone release film. System shall include a primer recommended for the intended deck substrate.

B. Retarder SA 31 - (formerly Sarnavap Self-Adhered) - a 31 mil (0.8 mm) thick self-adhesive SBS modified bitumen vapor retarder/air barrier. It can also be used as temporary roof protection in areas with limited light construction traffic.

C. Vapor Retarder SA 106 - a 106 mil (2.7 mm) thick self-adhesive SBS modified bitumen vapor retarder. It can also be used as temporary roof protection and is more robust than Vapor Retarder SA 31.

NOT FOR BIDDING

D. Vapor Retarder TA 138 - a 138 mil (3.5 mm) thick torch applied SBS modified bitumen vapor retarder. It can also be used as temporary roof protection.

E. Ply Sheet HA 87 - a 87 mil (2.2 mm) thick hot applied SBS modified bitumen ply sheet that can also be used as a vapor retarder.

F. Ply Sheet TA 87 - a 87 mil (2.2 mm) thick torch applied SBS modified bitumen ply sheet that can also be used as a vapor retarder.

2.11 BASE SHEET

A. Vapor Retarder TA 138 - a 138 mil (3.5 mm) thick torch applied SBS modified bitumen vapor retarder. It can also be used as temporary roof protection.

B. Ply Sheet HA 87 - a 87 mil (2.2 mm) thick hot applied SBS modified bitumen ply sheet that can also be used as a vapor retarder.

C. Ply Sheet TA 87 - a 87 mil (2.2 mm) thick torch applied SBS modified bitumen ply sheet that can also be used as a vapor retarder.

2.12 MECHANICAL FASTENERS

A. Mechanical fasteners and plates for polyisocyanurate foam insulation and cover board/thermal barrier securement shall meet requirements of Factory Mutual and be of appropriate type and length for structural deck substrate.

B. #12 or #14 screw-type fasteners for steel decks shall penetrate through the steel deck a minimum of ½".

C. #12 or #14 screw-type fasteners for wood decks shall achieve a minimum of 1" penetration depth into the wood or shall penetrate through the wood deck a minimum of ¼".

D. #14 screw-type or drive spike fasteners for concrete decks shall achieve a minimum of penetration depth into the concrete. Predrilling of the concrete deck is required.

E. All fasteners shall be installed with 3" diameter galvalume plates.

F. Fasteners and plates shall be by OMG, Inc.

2.13 URETHANE FOAM ADHESIVE

A. Low-rise urethane foam adhesive for polyisocyanurate foam insulation and cover board/thermal barrier securement shall meet requirements of Factory Mutual and be compatible with the intended deck substrate.

Adhesive shall be Sarnacol OM Board AdhesiveEXECUTION

2.14 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify Architect in writing of any discrepancies. Commencement of the Work in an area shall mean Installer's acceptance of the substrate.

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B. Surfaces shall be sound, dry, clean, and free of oil, grease, dirt, excess mortar or other contaminants. Fill voids, gaps, and spalled areas in substrate to provide an even plane. Strike masonry joints full flush.

2.15 SURFACE PREPARATION

A. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers, or gutters. Verify that all openings or penetrations through the intended substrate are secured back to solid blocking. Ensure all preparatory Work is complete prior to applying membrane.

B. Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards shall be set flush with sheathing and fastened into solid backing.

C. All surfaces shall be blown clean using an air compressor to remove any remaining loose debris.

D. All cracks and voids greater than 1/16th 0.040 inches shall be routed and caulked with a polyurethane sealant. Allow to cure per waterproofing membrane manufacturer's technical data sheets prior to over-coating with the specified waterproofing membrane system.

E. At all inside corners, gaps, or voids at the juncture of the deck and penetrations apply a minimum 3/4-inch fillet bead of polyurethane sealant and allow to cure per waterproofing membrane manufacturer's technical data sheets prior to installing the waterproofing membrane system.

F. At all moving cracks, moving joints between dissimilar materials, and similar conditions, create a minimum 1-inch-wide bond break utilizing bond breaker tape, centered over the crack or joint.

G. Membrane terminations shall be established prior to project start-up and documented in shop drawings. Terminations shall occur in raked-out mortar joints, saw cut terminations or under installed counter-flashing materials.

H. Use tape lines to achieve a straight edge detail.

2.16 SUBSTRATE PREPARATION

A. Acceptable substrates include concrete, concrete block, solid wood/plywood sheathing, approved cover board/thermal barriers, metal and sound existing roofing membrane.

B. Wood and Plywood Sheathing:

1. Solid wood sheathing shall be tongue & groove, or splined, or covered with a layer or plywood sheathing. Solid wood sheathing shall be not less than 3/4 inch (13 mm) thick.
2. Plywood sheathing shall be exterior grade, minimum 4 ply, and not less than 15/32 inch (12 mm) thick.
3. Preservatives or fire retardants used to treat the decking shall be compatible with waterproofing materials.
4. The deck shall be installed over joists that are spaced 24 inches (61 cm) o.c. or less and that all four sides bear on and are secured to joist and cross blocking. "H" clips are not acceptable.
5. Panels shall be installed with a 1/8 inch to 1/4-inch (3mm – 6mm) gap between panels and shall match vertically at joints to within (1/8 inch (3mm).

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6. Decking shall be kept dry and waterproofed promptly after installation.
7. A ½" thick thermal barrier shall be installed and secured over all solid wood decks in accordance with wind uplift requirements.
8. Special attention is required for application over pressure treated wood: use Sikalastic EP Primer/Sealer as per Product Data Sheet. WOOD MOISTURE CONTENT SHALL NOT EXCEED 18% WOOD MOISTURE EQUIVALENT (WME) as measured by a Tramex moisture meter calibrated for WME.

C. Structural Concrete:

1. Acceptable concrete substrates are limited to poured in place concrete decks.
2. Minimum deck thickness for structural concrete is 4 inches (10.2 cm).
3. Concrete surface to be light broom finish or equivalent.
4. Curing agents shall be checked for compatibility with specified waterproofing materials. Most curing agents shall be completely removed from the substrate by grinding, scarifying, or other mechanical means.
5. Concrete and masonry surfaces shall be low-pressure (5,000 psi or less) power-washed in accordance with ICRI Guideline No. 03732: Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays to remove all dirt, debris or surface contamination that would compromise bonding of the specified waterproofing membrane system. Remove oil or grease with solvents, or detergent and water. Rinse surface clean of remaining cleaning agents.
6. Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter meter.
7. Application to Damp (moisture content greater than 4%) Concrete: Sikalastic® GDC Primer can be applied to damp concrete as soon as surface water has dissipated after rainfall or other sources of water have ceased.
8. Application to Green Concrete: Sikalastic® GDC Primer can be applied to horizontal concrete surfaces 48 hours after concrete pour (or when concrete is walkable) and vertical surfaces 24 hours after forms are removed.
9. Minimum substrate compressive strength > 3000 psi. at the time Sikalastic® GDC Primer is applied.

D. Metal Decking:

1. Metal profile decks shall be sound and secured to purlins, bar joists, etc. A ½" thick thermal barrier shall be installed and secured over all metal profile decks in accordance with wind uplift requirements.

E. Metal Surfaces:

1. Exposed drain bowls, pipes, and other metal surfaces shall be cleaned by power tool cleaning (SSPC SP-3 or SP-11) to remove corrosion deposits back to a clean, bright metal followed by a solvent wipe prior to application of the specified primer.

F. Existing Membrane:

1. Acceptable existing waterproofing membrane must be sound, well adhered, and free of any trapped moisture. Verification that the membrane is free of trapped moisture must be established with a moisture scan and a copy of the moisture scan must be provided to the manufacturer.

NOT FOR BIDDING

2. Seal all voids or openings into the existing membrane system. Repair all areas that are wet with like in-kind roofing per allowable building code standards.
3. All surfaces shall be low-pressure (5,000 psi or less) power-washed to remove all dirt, debris or surface contamination that would compromise bonding of the specified waterproofing membrane system.
4. Ensure that there is no trapped moisture via an infrared scan.
5. Pressure wash the roof to remove all dust, dirt, and debris from the surface.
6. Validate primer adhesion to Single-ply membranes to determine the level of surface preparation required.

2.17 VAPOR BARRIER INSTALLATION

A. Apply primer appropriate for the self-adhered vapor barrier to the substrate surface at the application rate shown on the technical data sheet. Allow to cure.

B. Install vapor barrier to primed substrate in accordance with the technical data sheet. Achieve a 3” side overlap and a 6” end overlap between adjacent sheets.

2.18 INSULATION INSTALLATION

A. Install insulation to the substrate surface in accordance with the technical data sheet. For multiple board applications, stagger all board joints 12” on center from underlying insulation joints.

B. Insulation shall be adhered or mechanically attached to the substrate as specified. Follow all specification requirements for adhesive or fastener spacing and density.

C. Butt insulation boards together to achieve a maximum ¼” gap between boards. Fit insulation boards tightly at all penetration and perimeter flashing locations to achieve a maximum ½” gap.

D. Discard any damaged insulation boards.

E. A cover board is required over insulation.

2.19 COVER BOARD INSTALLATION

A. Install cover board over the insulation substrate surface in accordance with the technical data sheet. Stagger all board joints 12” on center from underlying insulation joints.

B. Cover board shall be adhered to the underlying insulation or mechanically attached through the insulation to the substrate as specified. Follow all specification requirements for adhesive or fastener spacing and density.

C. Butt cover boards together to allow for a minimum 1/8” – maximum ¼” gap between boards. Fit cover boards at all penetration and perimeter flashing locations to achieve a maximum ½” gap.

D. Discard any damaged cover boards.

E. Seal all exposed joints between cover boards with specified urethane sealant.

2.20 PRIMING

Note: Allow all primers to cure and dry in accordance with manufacturer’s product data sheets.

NOT FOR BIDDING

A. Concrete, Masonry, Cover Boards, Plywood, and solid wood:

1. Mix and apply specified primer for concrete/masonry/wood surfaces by brush or roller at the application rate shown on the technical data sheet. Porous, rough, or absorbent surfaces will decrease coverage rates.
2. Allow to cure and dry in accordance with manufacturer's technical data sheets.

B. Metal, Modified Bitumen:

1. Apply specified primer for metal drain bowls and other metal surfaces by brush or roller at the application rate shown on the technical data sheet to achieve an overall wet film thickness of 6-8 mils. **High roughness of the substrate will decrease coverage rates.**
2. Apply specified primer to clean and prepared modified bitumen surfaces by brush or roller at the application rate shown on the technical data sheet. **High porosity and roughness of the substrate will decrease coverage rates.**
3. Allow to cure and dry in accordance with manufacturer's technical data sheets.

C. Existing Sikalastic-600 series Membrane Tie-In:

1. Apply specified primer to existing roof/waterproofing membrane greater than seven (7) days old by roller at the coverage rate specified on the product data sheet. Allow to cure in accordance with manufacturer's technical data sheets prior to application of subsequent roof/waterproofing membrane system.

2.21 MEMBRANE REINFORCEMENT

A. Reinforcement of Cracks, Plywood and Cover Board Joints, and Base/Curb Flashing Transitions:

1. For all locations where the specified membrane system is to be applied directly to the substrate surface, provide reinforcement of cracks and joints prior to applying the specified membrane system.
2. For all moving cracks and joints, create a minimum 1-inch-wide bond break centered over the crack or joint by applying bond break tape centered over each crack or joint.
3. For all non-moving cracks and joints, rout and seal with Sikaflex polyurethane sealant.
4. For all horizontal-to-vertical transitions, provide a ¾" x ¾" Sikaflex polyurethane sealant cant.
5. Apply a minimum of a 3-inch-wide strip of Sika Joint Tape SA directly and pressure roll for best adhesion. Thereafter apply liquid roofing/waterproofing membrane saturating woven polyester facer. Or, apply a minimum of a 3-inch-wide strip of Flexitape Heavy membrane reinforcement into a bed of liquid waterproofing membrane. Back roll reinforcement to fully embed reinforcement into the wet liquid polyurethane membrane. Add more liquid membrane as needed to fully embed the reinforcement. *Sika Flexitape Heavy cannot be applied over built up systems at cover board joints, only Sika Joint Tape SA.
6. Ensure reinforcement is not in tension during embedment.

2.22 COLD FLUID APPLIED MEMBRANE APPLICATION

A. Install waterproofing membrane system in accordance with current technical data sheets and in accordance with warranty guideline requirements.

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B. Apply base embedment coat to horizontal deck and vertical wall surfaces by brush or with ½ inch nap roller to achieve a continuous and uniform minimum wet film thicknesses as specified in Section 2.2. For fleece application, approximately 2/3 of the total resin shall be applied as the base embedment coat.

C. Immediately lay specified conformable reinforcement into the wet base embedment resin coat. Reemat reinforcement is typically precut before application; Fleece reinforcement is typically precut at flashings only before application.

D. Apply pressure to the membrane reinforcement with a roller as appropriate to fully embed and saturate the membrane reinforcement into liquid waterproofing material. Remove air pockets from under the membrane by rolling them out.

E. Apply additional liquid material as required to ensure the membrane reinforcement is fully embedded and has conformed to the substrate without tenting, visible pinholes, air pockets, fishmouths or wrinkles.

F. Overlap sheets of Reemat membrane reinforcement a minimum of 2 inches in all directions. Overlap sheets of Fleece membrane reinforcement a minimum of 3 inches at side laps and 6 inches at end laps.

G. Extend membrane reinforcement vertically at adjacent wall surfaces in accordance with project details and specifications.

H. When using fiberglass mat reinforcement, allow the base embedment coat to fully cure dry prior to the placement of top coat or other applications of the specified waterproofing material.

I. When using polyester fleece reinforcement, immediately apply the resin top coat wet-on-wet.

J. Apply top coat by nap roller or brush to achieve a continuous and uniform minimum wet film thickness as specified in Section 2.2.

K. Install all flashings in accordance with manufacturer’s and/or project specific construction details.

2.23 PARAPET AND WALL FLASHINGS

A. Clean, prepare and prime flashing substrate surfaces ready to receive membrane flashing applications.

B. All parapet, wall, and curb flashings shall be provided with a sealant cant with Sika Flexitape Heavy Or Sika Joint Tape SA reinforcement prior to flashing application.

C. Terminate waterproofing membrane system at raked-out mortar joints, termination saw cut joint, or under installed counter-flashing materials. Seal all mortar joints and saw cut joints with specified sealant.

D. Install metal counter flashings in accordance with details.

2.24 DRIP EDGES AND OTHER METAL FLANGED FLASHING

A. Clean, prepare and prime metal flange surfaces ready to receive membrane flashing applications.

NOT FOR BIDDING

B. Metal flanges are typically encapsulated between two membrane layers, usually by providing membrane flashing as a stripping ply over the metal flange, with the field or flashing membrane extending beneath the metal flange. It is preferred to install the stripping ply under the metal flange and extend the field or flashing membrane over the metal flange.

C. For insulated waterproofing assemblies, metal flanges shall be mechanically fastened through the first membrane layer to wood nailers. For direct to substrate membrane applications where the waterproofing membrane is applied directly to the structural deck, metal flanges shall be mechanically fastened through the first membrane layer to the structural deck.

2.25 DRAINS

A. Clean, prepare and prime surfaces ready to receive membrane applications. Block drain bowl opening to avoid waterproofing material from entering the drainage system.

B. Remove strainer baskets and clamping rings from the drain bowl assembly. Temporarily replace the bolts back into assembly to avoid miss-alignment of connections after membrane applications are completed.

C. Extend the liquid waterproofing material and membrane reinforcement directly into the bowl of the prepared drain.

D. Remove drain blocks and allow the waterproofing system to fully cure dry prior to re-connecting the drain bowl assembly.

2.26 PENETRATIONS

A. Clean, prepare and prime surfaces ready to receive membrane flashing applications. Ensure that penetrations are secured to prevent movement.

B. Penetration flashings typically consist of two components. A vertical flashing component extends up the penetration and is torn (if Reemat reinforcement) or finger cut (if fleece reinforcement) at the bottom so that it can be extended horizontally onto the deck/substrate. A horizontal flashing component covers all of the tears/finger cuts and extends vertically up the penetration. The intent is to achieve a 2–3-inch overlap of the two flashing components.

2.27 EXPANSION JOINTS

A. Clean, prepare and prime surfaces ready to receive membrane flashing applications. For insulated waterproofing assemblies, wood nailers shall be installed as insulation stops prior to expansion joint flashing application.

B. Expansion joints shall be sealed with a compressible filler such as batt insulation to prevent condensation and to provide support for the flashing bellows.

C. Expansion joint flashings typically consist of four components. An initial reinforced membrane cradle of 6” wide Flexitape Heavy or Fleece is installed first, followed by a compressible foam rod under 25% compression, extending equally above and below the membrane level. A second reinforced membrane layer is installed over the foam rod to create a bellows. A third reinforced membrane layer is installed over the bellows. It is acceptable to use the flashing or waterproofing membrane as the final layer. Refer to Manufactures’ standard expansion joint detail.

NOT FOR BIDDING

2.28 AGGREGATE SURFACING

A. Apply aggregate surfacing as specified for walkways and other areas requiring enhanced slip resistance. DO NOT BROADCAST SAND INTO TOP COAT.

B. Apply an additional 15 wet mil layer of Sikalastic 644 Lo-VOC resin to cured waterproofing membrane as soon as membrane can be walked on without damage.

C. Tile Overburden - Broadcast kiln-dried sand to refusal into the wet resin layer and allow to cure. Remove all loose sand/aggregate.

D. Non-Skid Finish - Broadcast kiln-dried sand to refusal into the wet resin layer and allow to cure. Remove all loose sand/aggregate. Apply an additional 15 wet mil layer of Sikalastic 644 Lo-VOC resin to seal kiln-dried sand.

E. Non-Skid Finish Broadcast & Backroll - Broadcast kiln-dried sand into the wet resin layer and back roll to encapsulate the kiln dried sand. Allow to cure.

2.29 APPLICATION OF PENETRATION SEALANT

A. Seal reglet-based membrane terminations, heads of exposed mechanical fasteners, around penetrations, duct work, electrical and other apparatus extending through the waterproofing membrane with specified penetration sealant.

2.30 FLOOD TEST (WHERE APPLICABLE/AS REQUIRED)

A. Upon the completion of the waterproofing membrane system and associated terminations the contractor shall flood test the system. Provide temporary stops and plugs for the drains within the test area. Flood test with a minimum 2 inches of water for no less than 24 hours.

B. Repair and retest the system for no less than 24 hours, report all deficiencies to the Architect. Remove temporary stops and plugs. No other Work is to proceed without prior direction from the Architect.

2.31 MEMBRANE HIGH VOLTAGE ELD INTEGRITY TESTING
(WHERE APPLICABLE/AS REQUIRED)

A. Independent third-party testing companies are hired outside of Sika to perform high voltage ELD integrity testing of the completed Sikalastic RoofPro membrane.

B. Upon completion of the system installation and final inspection by manufacturer, the 3rd party testing company can then perform high voltage ELD integrity testing of the membrane.

C. Requirements for ELD testing, membrane has to cure a minimum of 14 days, membrane surface must be completely dry to perform testing, and high voltage testing method must be used: minimum 7.5 k/v.

D. Upon completion of ELD membrane testing a verbal report shall be provided to the A/E/C and manufacturer followed by a formal report. If ELD testing proves voids or inconsistencies in the

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membrane, all repairs are to be made by the installing applicator. Once satisfactory test results are received, all approved overburden should be installed within 48 hours.

2.32 PROTECTION

A. Protect waterproofing Work from other trades until completion.

B. Stage materials in such a manner that avoids foot traffic over completed waterproofed areas.

C. Provide temporary walkways and platforms to protect completed Work from traffic and point loading during the application process.

D. Provide temporary membrane tie-ins and water-stops at the end of each workday and remove prior to commencement of Work the following day.

2.33 PREFABRICATED COMPOSITE DRAINAGE AND PROTECTION MAT

A. Install the drainage mat when it can be followed immediately by the installation of the extruded polystyrene insulation and overburden.

B. Install the drainage mat on horizontal and vertical surfaces in accordance with the product data sheet. Lay out and position drainage mat and allow to lay flat. Cut and closely fit drainage mat to perimeter and penetrations.

C. Overlap filter fabric from adjacent sheets/rolls, and bond all fabric overlaps with Sikaflex sealant. Install supplemental filter fabric as required to ensure filter fabric continuity at flashing locations.

2.34 INSTALLATION OF EXTRUDED POLYSTYRENE INSULATION

A. Before the application of the insulation, any damage or deterioration to the composite drainage and protection mat shall be repaired.

B. Loose lay insulation in a staggered manner, and tightly butt together all insulation boards. The maximum acceptable joint width is 3/8 inch. Cut and closely fit insulation within ¾ inches to perimeter and penetrations.

C. For multi-layer insulation applications, the bottom layer shall be the thickest layer and shall be a minimum of 2 inches thick. Stagger the joints of each insulation layer.

D. Vertical insulation applications can be spot adhered to the drainage mat and to additional insulation layers, utilizing an acceptable adhesive.

E. Do not install damaged insulation boards.

2.35 FILTER FABRIC

A. Install filter fabric on horizontal and vertical surfaces over the extruded polystyrene insulation in accordance with the product data sheet.

B. Lay out and position filter fabric. Cut and closely fit filter fabric to perimeter and penetrations, extending the filter fabric vertically to the height of the overburden.

NOT FOR BIDDING

C. Overlap filter fabric to achieve 6-inch side and end laps. As required, bond all fabric overlaps with Sikaflex sealant to ensure filter fabric continuity prior to and during overburden installation.

2.36 TRAFFIC-BEARING OVERBURDEN

A. Install traffic-bearing overburden, in accordance with specifications and as per Division 32.

2.37 CLEAN-UP

A. Work areas are to be kept clean, clear, and free of debris at all times.

B. Do not allow trash, waste, and/or debris to collect on the work area. Trash, waste, and/or debris shall be removed from the work area on a daily basis.

C. All tools and unused materials shall be collected at the end of each workday and stored properly off of the finished waterproofed surface and protected from exposure to the elements.

D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.

E. Properly clean the finished deck surface after completion, and make sure the drains and gutters are not clogged.

F. Clean and restore all damaged surfaces to their original condition.

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SECTION 07 22 16.10 NAILBASE INSULATION PANELS

GENERAL

16.1 SECTION INCLUDES

A. Section includes nailbase insulation panel system.

17.1 RELATED SECTIONS

A. Section 07 31 13 - Asphalt Shingles.

18.2 REFERENCES

A. ASTM C209 – Methods of Testing Insulating Board, Structural and Decorative.

B. ASTM C1289 – Specifications for Faced Rigid Cellular Polyisocyanurate Thermal Insulating Board.

C. ASTM D1621 – Test Methods for Compressive Properties of Rigid Cellular Plastics.

D. ASTM D2126 - Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.

E. ASTM E84 – Surface Burning Characteristics of Building Materials.

F. ASTM E96 - Test Method for Water Vapor Transmission of Materials.

G. CAN/ULC S770 - Standard Test Method for Determination of Long-Term Thermal Resistance of Closed Cell Plastic Thermal Insulating.

H. UL 1256 - Fire Test of Roof Deck Constructions.

I. PS2-18 - Performance Standard for Wood-based Structural-use Panels.

J. FM 4450 - Class I Insulated Steel Deck Roofs.

K. FM 4470 - Class I Roof Covers (Foam Core Only).

L. FM Class 1 approval for steel roof deck constructions, Class 1 Fire and I-60 and I-90 windstorm classifications

M. Florida Building Code Approval FL# 5968

N. Miami Dade Product Control – Notice of Acceptance NOA No. 14-0505.08

O. California Code of Regulations, Title 24, Insulation Quality Standard License #T1420

19.2 SYSTEM DESCRIPTION

A. Physical properties (Foam Core):

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1. Manufactured using 3rd Generation Zero ODP, EPA Compliant Blowing Agent; Contains zero CFCs, HCFCs, or HFCs; Virtually no Global Warming Potential (GWP)
2. Compressive Strength: ASTM D1621 and ASTM C1289, Type V, Class 1, 20 psi (138 kPa) minimum for Grade 2
3. Dimensional Stability: ASTM D2126, 2 percent linear change (7 days).
4. Moisture Vapor Transmission: ASTM E96, < 1 perm ((57.5ng/(Pasm2)).
5. Water Absorption: ASTM C209, < 1 percent by volume.
6. Service Temperature: Minus 100 degrees to 250 degrees F (Minus 73 degrees C to 122 degrees C).
7. Foam core flame spread index of 75 or less and smoke developed of 450 or less when tested in accordance with ASTM E84.

B. Foam Core R Values: Based on LTTR (Long Term Thermal Resistance) in accordance with ASTM C1289.

C. UL Assemblies: Insulated steel deck assemblies - UL 1256 (nos. 120, 123) TGDY. R20624 Shingle Deck Accessory; H-Shield Nail Base roof insulation is classified for use with any Class A, B, or C asphalt glass mat or asphalt organic shingles, standing seam metal or tile roof coverings.

A. FM Class 1 (Low Slope) approval for steel roof deck constructions, Class 1 Fire and I-60 and I-90 windstorm classifications.

B. Hail Rating: SH-1 and VSH

22.1 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on nailbase insulation panels and fasteners to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Verification Samples: For each finish product specified, two samples representing actual product.
1. Submit 6 by 6-inch (152 mm by 152 mm) samples of each board type required.
2. Submit samples of each fastener type required.

D. Manufacturer's Certificate: Certify nailbase insulation panels will conform to specified performance requirements.

22.2 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall be a company that regularly manufactures polyisocyanurate and fully assembles nailbase insulation panels in-house with no outside fabrication operations.

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B. Manufacturer shall have multiple manufacturing facilities to ensure consistency of product supply.

22.3 DELIVERY, STORAGE, AND HANDLING

A. Good construction practice dictates that all insulations should be protected from moisture and direct sunlight during jobsite storage. Pallets of Panels H-Shield NB are protected by a 2-step packaging process using **shrink wrap and a UV resistant polyethylene bag**. This moisture resistant package is designed for protection from the elements during flatbed shipment from our facilities to the jobsite.

B. Store products in accordance with the manufacturer's recommendations.

C. Store product on a solid flat foundation and elevate a minimum of 2 inches above the finished surface.

D. Slit the bundle packaging vertically down the center of the two short sides and cover with a waterproof tarpaulin

E. Protect insulation from open flame and keep dry at all times.

22.4 PROJECT CONDITIONS

A. Install only as much insulation as can be covered the same day by a completed roof covering material.

PART 23 PRODUCTS

23.1 MANUFACTURERS

1. Hunter Panels, 15 Franklin Street, Portland, Maine 04101. Phone: (207) 761-5678 or (888) 746-1114. E-mail: info@hpanels.com. Web: www.hunterpanels.com.
2. Atlas Roofing Corporation 2000 Riveredge Parkway, Suite 800 • Atlanta, GA • 30328 https://www.atlasroofing.com/
3. PAC-CLAD Carlisle Corporation1255 S Caton Avenue, Suite B, Baltimore, MD 21227 https://www.pac-clad.com/
4. GAF 401 Weavertown Rd, Myerstown, PA 17067 https://www.gaf.com
5. Requests for substitutions will be considered in accordance with provisions of Section 01600.

25.1 PANEL CONSTRUCTION

A. Panels shall consist of a top layer of APA exterior grade 5-ply CDX plywood laminated off-line to fiber-reinforced facers (GRF) polyisocyanurate foam insulation.
   1. Polyisocyanurate foam insulation shall conform to ASTM C1289, Type V with a compressive strength of:
      a. Grade 2: 20 psi (138 kPa) minimum).
   2. 5-ply CDX Plywood Top layer substrate shall conform to PS2 and shall be as follows:
      a. Type: Standard sheathing grade.
      b. Thickness: 5/8 inch (15.9 mm).
      c. Edge detail: Rabbeted.

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28.1 PANEL TYPES

A. Panels 5/8-inch (16 mm) 5-ply CDX plywood foam size shall be 48 inches by 96 inches (1220 mm by 2438 mm) with an overall thickness, R-value, and flute spanability as follows:
   a. Total System R-Value: Min R-30
   b. Flute spanability 4-3/8-inches (111.13 mm).

29.2 PANEL FASTENERS

A. Fasteners shall be FM Approved panel SIP/WD Panel fasteners for wood deck applications. Fasteners have a 3/16-inch (5 mm) shank and are corrosion resistant with oversized heads. Length of fasteners shall be as recommended by maufacturer. Use of 2-inch (51 mm) round plates are not required. See manufacturer's application guide for instructions.
   1. See TER 2101-01 by DrJ Engineering for penetration and fastening schedule requirements.

PART 32 EXECUTION

34.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify deck, adjacent materials, and structural backing is dry and ready to receive insulation.

C. Verify deck surface is flat, free of fins, protrusions and irregularities.

D. If deck preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

34.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

A. Apply vapor barrier and or retarder, as specified by the Architect or required by the local building code, to decking prior to the installation.

2.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. For multiple layered installations, install the base layer of panels loose laid, and stagger the joints of subsequent layers in accordance with good roofing practice. Fasten panels through the top nailable surface and through the wood block panel spacers using panels approved threaded fasteners.

C. Only install enough panels per day that can be covered the same day by a completed roof covering material.

D. Use only UL or FM approved synthetic underlayment over nailbase insulation panels. The use of 15- or 30-pound roofing felt is not recommended.

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2.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Cover the top and edges of unfinished roof panel work to protect it from the weather and to prevent accumulation of water in the cores of the panels.

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SECTION 07 31 13 - ASPHALT SHINGLES

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes the following:
   1. Asphalt shingles.
   2. Self-adhering sheet underlayment.

1.02 RELATED SECTIONS

A. Division 6 Section "Rough Carpentry" for roof deck wood structural panels.

B. Division 7 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings and counterflashings not part of this Section.

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.04 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of asphalt shingle, ridge and hip cap shingles indicated.
   1. Include similar Samples of trim and accessories involving color selection.

C. Samples for Verification:
   1. Ridge cap, drip edge and other accessories

D. Qualification Data: For Installer.

E. Warranties: Special warranties specified in this Section.

1.05 QUALITY ASSURANCE

A. Source Limitations: Obtain field, ridge and hip cap shingles through one source from a single asphalt shingle manufacturer.

B. Fire-Test-Response Characteristics: Provide asphalt shingle and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
   1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
   1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
   2. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

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1.07 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer's written instructions and warranty requirements.
   1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.08 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period. Materials failures include manufacturing defects and failure of asphalt shingles to self-seal after a reasonable time.
   1. Material Warranty Period: 50 years from date of Substantial Completion, prorated, with first 5 years nonprorated.
   2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 110mph for 5 years from date of Substantial Completion.
   3. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor five years from date of Substantial Completion.
   4. Workmanship Warranty Period: 10 years from date of Substantial Completion.
   5. Special Project Warranty: Roofing Installer's warranty, on warranty form at end of this Section, signed by roofing Installer, covering Work of this Section, in which roofing Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within the following warranty period:
      a. Warranty Period: Five years from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. GAF Materials Corporation
B. Celotex Corporation.
C. CertainTeed Corporation.
D. Owens Corning.

2.02 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
   1. Basis-of-Design Product:
      a. GAF Materials Corporation, Elk; “Camelot”, or a comparable product of one of the following:
         1) Celotex Corporation.
         2) CertainTeed Corporation.
         3) Owens Corning.
   2. Strip Size: Manufacturer's standard.
   3. Algae Resistance: Granules treated to resist algae discoloration.
   4. Color and Blends: As selected by Architect from manufacturer's full range.B.

2.03 UNDERLAYMENT MATERIALS

A. Self-Adhering Eave Protection and Underlayment Membrane:

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1. ASTM D 1970, minimum of 40-mil- thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.
2. Available Products, as approved by the single manufacturer:
   a. Carlisle Coatings & Waterproofing, Div. of Carlisle Companies Inc.; Dri-Start A
   b. Grace, W. R. & Co.; Grace Ice and Water Shield.
   c. Henry Company; Perma-Seal PE.
   d. Johns Manville International, Inc.; Roof Defender.
   e. NEI Advanced Composite Technology; AC Poly Ice and StormSeal.
   f. Owens Corning; WeatherLock M.
   g. Polyguard Products, Inc.; Polyguard Deck Guard.
   h. Protecto Wrap Company; Rainproof TM.
   i. SafSeal Innovations; SafSeal 7740.

B. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
1. Self Sealability: Passing nail sealability test specified in ASTM D1970.
2. Low Temperature Flexibility: Passing test specified in ASTM D1970.
3. Fasteners: As specified by manufacturer and building code qualification report or approval, if any.
4. Products:
   a. Deck-Armor Premium Breathable Roof Deck Protection by GAF.
   b. Substitutions: See Division 1 - Product Requirements.

2.04 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized steel wire shingle nails, minimum 0.120-inch- diameter, smooth shank, sharp-pointed, with a minimum 3/8-inch- diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.
1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
2. Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized steel wire with low profile capped heads or disc caps, 1-inch minimum diameter.

2.05 METAL FLASHING AND TRIM

A. Sheet Metal Flashing and Trim: Comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."
1. Sheet Metal: Coil-coated aluminum.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.
1. Apron Flashings: Fabricate with lower flange a minimum of 5 inches over and 4 inches beyond each side of downslope asphalt shingles and 6 inches up the vertical surface.
2. Step Flashings: Fabricate with a headlap of 2 inches and a minimum extension of 5 inches over the underlying asphalt shingle and up the vertical surface.
3. Drip Edges: Fabricate in lengths not exceeding 10 feet with 2-inch roof deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge. Provide vented edge drip at vented insulation.

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PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
   1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
   2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
   3. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 UNDERLAYMENT INSTALLATION

A. Single-Layer Underlayment: Install single layer of underlayment on roof deck perpendicular to roof slope in parallel courses. Lap sides a minimum of 2 inches over underlying course. Lap ends a minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with underlayment nails.
   1. Install underlayment on roof deck not covered by self-adhering sheet underlayment.
      a. Lap sides over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends not less than 6 inches over self-adhering sheet underlayment.

B. Self-Adhering Sheet (Ice and Water Shield) Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated below, unless indicated otherwise on drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.
   1. Eaves: Extend from edges of eaves 24 inches beyond interior face of exterior wall.
   2. Valleys: Extend from lowest to highest point 18 inches on each side.
   3. Hips: Extend 18 inches on each side.
   4. Sidewalls: Extend beyond sidewall 18 inches and return vertically against sidewall not less than 4 inches.

3.03 METAL FLASHING INSTALLATION

A. General: Install metal flashings and other sheet metal to comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."
   1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
   B. Step Flashings: Install with a headlap of 2 inches and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.

C. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.

3.04 ASPHALT SHINGLE INSTALLATION

A. Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

NOT FOR BIDDING

B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed at least 7 inches wide with self-sealing strip face up at roof edge.
   1. Extend asphalt shingles 1/2 inch over fascia at eaves and rakes.
   2. Install starter strip along rake edge.

C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure, unless otherwise indicated by manufacturer.

D. Fasten asphalt shingle strips with a minimum of six roofing nails located according to manufacturer's written instructions.
   1. Where roof slope exceeds 20:12, seal asphalt shingles with asphalt roofing cement spots after fastening with additional roofing nails.
   2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
   3. When ambient temperature during installation is below 50 deg F, seal asphalt shingles with asphalt roofing cement spots.

3.05 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
   1. Install components required for a complete sheet metal roofing assembly including trim, copings, seam covers, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items.
   2. Install accessories integral to sheet metal roofing that are specified in Division 7 Section "Sheet Metal Flashing and Trim" to comply with that Section's requirements.

END OF SECTION

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ASECTION 07 53 23 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

1.01 SUMMARY

A. Section Includes:
B. Ethylene-propylene-diene-terpolymer (EPDM) roofing system.
C. Accessory roofing system materials.
D. Roof Insulation, flat and tapered and accessories.
E. Cover board.
F. Walkways.

1.02 RELATED REQUIREMENTS:

A. Section 053100 "Steel Decking" for roof deck panels.
B. Section 061000 "Rough Carpentry for wood nailers, curbs, and blocking.
C. Section 061600 "Sheathing" for wood-based, structural-use roof deck panels.
D. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
E. Section 077100 "Roof Specialties" for premanufactured copings, roof edge fascia, gravel stops, reglets], roof edge flashings and counterflashings.
F. Section 077129 "Manufactured Roof Expansion Joints" for premanufactured roof expansion-joint assemblies.
G. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.Section
H. 26 41 13 - Lightning Protection System: Sealing and flashing of roofing system at lightning protection system penetrations.

1.03 REFERENCE STANDARDS

A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2020.
B. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane 2015.
C. FM DS 1-28 - Wind Design 2016.
D. NRCA (RM) - The NRCA Roofing Manual 2019.
E. UL (DIR) - Online Certifications Directory Current Edition. 1
F. DEFINITIONS
G. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.04 PREINSTALLATION MEETINGS

A. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at WARNER ELEMENTARY SCHOOL, 801 W 18TH ST, WILMINGTON, DE 19802
B. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, Roofing System Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
C. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
D. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

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E. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
F. Review structural loading limitations of roof deck during and after roofing.
G. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
H. Review governing regulations and requirements for insurance and certificates if applicable.
I. Review temporary protection requirements for roofing system during and after installation.
J. Review roof observation and repair procedures after roofing installation.

1.05 ACTION SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Product Data: For each type of product.
    1. Shop Drawings:
        a. Include roof plans, sections, details, and attachments to other work, including the following:
        b. Layout and thickness of insulation.
        c. Base and sheet flashings and membrane termination details.
        d. Flashing details at penetrations.
        e. Tapered insulation layout, thickness, and slopes.
        f. Roof plan showing orientation of roof deck and orientation of roofing membrane, fastening spacings, and pattern for corner, perimeter, and field-of-roof locations.
        g. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
        h. Crickets, saddles, and tapered edge strips, including slopes.
        i. Tie-in with adjoining wall system air barrier.
C. Samples for Verification: For the following products:
D. Samples: For each type of roof specialty and for each color and texture specified.
E. Wind-Uplift-Resistance Submittal: For roofing system, indicating compliance with wind-uplift performance requirements.

1.06 INFORMATIONAL SUBMITTALS

A. Performance Requirement Certificate: Signed by roofing membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
B. Submit evidence of complying with specified performance requirements.
C. Special Warranty Certificate: Signed by roofing membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

1.07 PRODUCT TEST REPORTS:

A. For roofing membrane and insulation, tests performed by an independent qualified testing agency, indicating compliance with specified requirements.
B. Field Test Reports:
    1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

1.08 QUALIFICATION DATA: INSTALLER'S QUALIFICATION STATEMENT.

A. Sample warranties.

1.09 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system.

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B. Certified statement from existing roofing system manufacturer stating that existing roof warranty has not been affected by the Work performed under this Section.

1.10 QUALITY ASSURANCE

A. Manufacturer Qualifications: Companies specializing in manufacturing the products specified in this section with minimum five years of documented experience.

B. Installer Qualifications: A qualified firm that is approved, authorized, certified, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing system materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer.

C. Protect stored liquid material from direct sunlight.

D. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

E. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources.

F. Store in a dry location.

G. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

H. Handle and store roofing system materials, and place equipment in a manner to avoid permanent deflection of deck.

1.12 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written installation instructions and warranty requirements.

1.13 WARRANTY

A. Special Project Warranty: Submit roofing Installer's warranty, on warranty form signed by Installer, covering Work of this Section, including all components of membrane roofing system such as roofing membrane, base flashing, roof insulation, and walkway products

B. Manufacturer's Warranty: Manufacturer's Warranty standard form, without monetary limitation, in which Manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.

1. Warranty Period: Twenty-five (25) years from date of Substantial Completion.
2. Coverage: Material and labor.
3. Include edge metal in Roofing System Warranty. See Section 07 71 00.
4. Scope of Coverage: Repair leaks in the roofing system caused by
5. Ordinary wear and tear
6. Normal exposure to the elements
7. Defective workmanship used to install these materials
8. Damage due to winds up to 72 mph

C. Warranty Period: 25 years from Date of Substantial Completion.

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PART 2 PRODUCTS

2.01 MANUFACTURERS

A. EPDM Membrane Materials:
   1. Johns Manville. A Berkshire Hathaway Company P. O. Box 5108 Denver, CO 80217-5108
   2. Elevate, Nashville, TN, http://www.elevatecommercialbp.com
   3. Versico, a division of Carlisle Construction Materials Inc: www.versico.com/sle.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Obtain components for roofing system from roofing membrane manufacturer.

2.02 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing system and base flashings to withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing system and flashings to remain watertight.

B. Requirements in "Accelerated Weathering" and "Impact Resistance" subparagraphs below are required by the IBC for all roof coverings installed on roofs with slopes less than 2:12.

C. Accelerated Weathering: Roofing membrane to withstand 2000 hours of exposure when tested in accordance with ASTM G152, ASTM G154, or ASTM G155.

D. Impact Resistance: Roofing membrane to resist impact damage when tested in accordance with ASTM D3746/D3746M, ASTM D4272/D4272M, or the Resistance to Foot Traffic Test in FM Approvals 4470.

E. Material Compatibility: Roofing system materials to be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.

F. Wind-Uplift Resistance: Design roofing system to resist the following wind-uplift pressures when tested in accordance with FM Approvals 4474, UL 580, or UL 1897:

G. Exterior Fire-Test Exposure: **Class A**; for application and roof slopes indicated; when tested by a qualified testing agency in accordance with ASTM E108 or UL 790.

H. Identify products with appropriate markings of applicable testing agency.

I. Thickness: **60 mils (1.5 mm)**, nominal.

J. Exposed Face Color: **Black**

2.03 ACCESSORY ROOFING SYSTEM MATERIALS

A. General: Accessory materials as recommended in writing by roofing membrane manufacturer for intended use and compatible with other roofing system components.

B. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.

C. Base and Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as roofing membrane.

D. Bonding Adhesive: Roofing membrane manufacturer's standard.

E. Low-Rise, Urethane, Fabric-Backed Membrane Adhesive: Roof system manufacturer's standard spray-applied, low-rise, two-component urethane adhesive formulated for compatibility and use with fabric-backed membrane roofing.

F. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 6-inch wide minimum, butyl splice tape with release film.

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G. Membrane Fasteners: Type and size as required by roof membrane Manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane Manufacturer.
H. Miscellaneous Accessories: As recommended in writing by roofing membrane manufacturer.
I. Color: Black

2.04 SUBSTRATE BOARD

A. Fiberglass Mat Faced Gypsum Roof Board:
1. Thickness: 5/8 inch.
2. Width: 4 feet.
3. Length: 8 feet.
4. Weight: 2.5 lb/sq. ft.
5. Surfacing: Fiberglass mat with non-asphaltic coating.
6. Attachment: Low-rise polyurethane adhesive
7. Flexural Strength, Parallel (ASTM C473): 100 lbf, minimum.
8. Flute Span (ASTM E661): 8 inches.
9. Permeance (ASTM E96): greater than 17 perms.
10. R-Value (ASTM C518): 0.67.
11. Water Absorption (ASTM C1177): Less than 10 percent of weight.
12. Compressive Strength (Applicable Sections of ASTM C472): 900 pounds per square inch.
13. Surface Water Absorption (ASTM C473): Not more than 2 grams.
14. Acceptable Products:
c. DensDeck Prime, Georgia-Pacific Gypsum.

3.01 ROOF INSULATION AND ACCESSORIES

A. INSULATION
1. Polyisocyanurate Board Insulation: Rigid cellular foam, complying with ASTM C1289, Type II, Class 1, cellulose felt or glass fiber mat both faces; Grade 2 and with the following characteristics:
2. Total System R-Value: Min R-30
3. R-Value (LTTR) per inch (25 mm): min. 6.2R at 40 °F (4.4 °C) and min. 5.7R at 75 °F (23.9 °C)
4. Compressive Strength: 20 psi.
5. Board Size: 48 by 96 inch.
6. Base layer thickness: 4 inch minimum.
7. Board Edges: Square.
8. Flat roof insulation, total thickness: As indicated on Drawings, built up in multiple layers as required.
9. Stagger joints in adjacent layers
10. Base Layer: Polyisocyanurate foam board, non-composite
11. Fill Layers: Polyisocyanurate foam board, non-composite
12. Tapered Board insulation: Slopes as indicated on Drawings, fabricated in fewest layers possible.
13. Minimum base slope: See Drawings.
14. Cricket slope: As indicated in Drawings. If not so indicated, then as required for 1/2 inch per foot minimum cricket valley slope.
15. Drain sumps: 4'-0" square; 1/2 inch per foot slope.
16. Low Rise Foam Adhesive: Two-component, low-rise polyurethane adhesive designed to attach polyisocyanurate insulation to a variety of acceptable substrates.
17. Attachment: Roof areas A,E,F,G =Mechanical fastening
18. Attachment: Roof Area D =Adhered

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3.02 COVER BOARD

A. Fiberglass Mat Faced Gypsum Roof Board:
   1. Thickness: 5/8 inch.
   2. Width: 4 feet.
   3. Length: 8 feet.
   4. Weight: 2.5 lb/sq. ft.
   5. Surfacing: Fiberglass mat with non-asphaltic coating.
   6. Attachment: Low-rise polyurethane adhesive
   7. Flexural Strength, Parallel (ASTM C473): 100 lbf, minimum.
   8. Flute Span (ASTM E661): 8 inches.
   9. Permeance (ASTM E96): greater than 17 perms.
   10. R-Value (ASTM C518): 0.67.
   11. Water Absorption (ASTM C1177): Less than 10 percent of weight.
   12. Compressive Strength (Applicable Sections of ASTM C472): 900 pounds per square inch.
   13. Surface Water Absorption (ASTM C473): Not more than 2 grams.
   14. Acceptable Products:
      a. DensDeck Prime, Georgia-Pacific Gypsum.

B. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
   1. Composition: Manufacturer's standard.
   2. Size: Minimum 24 inches wide perpendicular to direction of foot traffic.

C. Color: Black

3.03 ACCESSORIES

A. Roof Drains
   1. Zurn Industries, LLC – The Zurn RD2150 replacement Roof Drain by Zurn Industries, LLC | Specification Drainage Operation 1801 Pittsburgh Avenue, Erie, PA 16502, Ph. 855.663.9876
      a. Other products are acceptable to conformance with the requirements of this Section.
   2. Properties
      a. Designed for retrofit roof drain applications.
      b. The RD2150 is furnished with the following items.
         1) #16 gage Type 304 stainless steel body
         2) Neoprene gasket, complete with Dura- Coated cast iron clamp collar and dome.
         3) Stainless steel hardware

B. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.

C. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
   1. Composition: Manufacturer's standard.
   2. Size: Minimum 24 inches wide perpendicular to direction of foot traffic.

D. Insulation Joint Tape: Glass fiber reinforced type as recommended by Manufacturer, compatible with roofing materials; 6 inches wide; self-adhering.

E. Thinners and Cleaners: As recommended by Manufacturer, compatible with membrane.

F. Membrane Adhesive: As recommended by Manufacturer, and:
   1. Provide low-VOC, solvent-based EPDM bonding adhesive that complies with Ozone Transport Commission (OTC) Model Rule, Single Ply Roofing Adhesives; www.otcair.org.

G. Membrane Adhesive Primer: As recommended by Manufacturer, and:

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1. Provide low-VOC, solvent-based EPDM adhesive primer that complies with Ozone Transport Commission (OTC) Model Rule, Single Ply Roofing Adhesive Primers; www.otcair.org.

H. Insulation Adhesive: As recommended by Manufacturer.

I. Metal Accessories

J. Metal Roof Edging and Fascia: Continuous metal edge member serving as termination of roof membrane and retainer for metal fascia; watertight with no exposed fasteners; mounted to roof edge nailer

K. Wind Performance:
1. Membrane Pull-Off Resistance: 100 lbs./ft (1460 N/m), minimum, when tested in accordance with ANSI/SPRI ES-1 Test Method RE-1, current edition
2. Fascia Pull-Off Resistance: At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-2, current edition
3. Provide product listed in current Factory Mutual Research Corporation Approval Guide with at least FM 1-270 rating

L. Description: Two-piece, 45° sloped galvanized steel sheet edge member securing top and bottom edges of formed metal fascia.

Coping Types:

TYPE A: Double-Cleat (Continuous Cleat) Coping

TYPE B: Single-Cleat (SNAP ON SIMPLE SYSTEM) Coping
1. Fascia Face Height: 9″ (127 mm)
2. Edge Member Height Above Nailer: 1 ¼″ (31 mm)
3. Fascia Material and Finish: 24-gage, 0.024″ (0.06 mm) galvanized steel with Kynar 500 finish in Manufacturer's standard color; matching concealed joint splice plates; factory-installed protective plastic film
4. Length: minimum of 120″ (3.048 m)
5. Functional Characteristics: Fascia retainer supports while allowing for free thermal cycling of fascia

M. Aluminum Bar: Continuous 6063-T6 alloy aluminum extrusion with pre-punched slotted holes; miters welded; injection molded EPDM splices to allow thermal expansion

N. Anchor Bar Cleat: 20-gage, 0.036″ (0.9 mm) G90 coated commercial type galvanized steel with pre-punched holes

O. Curved Applications: Factory modified

P. Fasteners: Factory-provided corrosion resistant fasteners, with drivers; no exposed fasteners permitted

Q. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, scuppers, and end caps; minimum 14″ (355 mm) long legs on corner pieces

R. Scuppers: Welded watertight

S. Accessories: Provide matching brick wall cap, downspout, extenders, and other special fabrications as shown on the drawings

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3.04 EXECUTION

A. EXAMINATION

B. Examine substrates, areas, and conditions, with Roofing System Installer present, for compliance with requirements and other conditions affecting performance of the Work.

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C. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
D. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
E. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
F. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.
G. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
H. Verify that the existing concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity as recommended by roofing system manufacturer when tested in accordance with ASTM F2170.
I. Submit test reports within 24 hours of performing tests.
J. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
K. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.
L. Proceed with installation only after unsatisfactory conditions have been corrected.

3.05 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation in accordance with roofing system manufacturer's written instructions. Remove sharp projections.
B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
C. Prime surface of concrete deck with primer in accordance with roofing system manufacturer's written installation instructions and allow primer to dry.

3.06 INSTALLATION OF ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING SYSTEM, GENERAL

A. General

1. Install roofing, insulation, flashings, and accessories in accordance with roofing Manufacturer's published instructions and recommendations for the specified roofing system. Where Manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
2. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
3. Do not start work until Pre-Installation Notice has been approved by Manufacturer as confirmation that this project qualifies for a Manufacturer's warranty.
4. Perform work using competent and properly equipped personnel.
5. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the Applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
6. Install roofing membrane only when surfaces are clean, dry, smooth, and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions

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will not allow proper application; consult Manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 °F (15 to 25 °C).

7. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
8. Protect from spills and overspray from bitumen, adhesives, sealants, and coatings.
9. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
10. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
11. Until ready for use, keep materials in their original containers as labeled by the Manufacturer.
12. Consult membrane Manufacturer's instructions, container labels, and Safety Data Sheets (SDS) for specific safety instructions. Keep all adhesives, sealants, primers, and cleaning materials away from all sources of ignition.
13. Install substrate board at right angle to flutes of steel roof deck. Locate end joints over crests of steel roof deck.
14. Tightly butt substrate boards together.
15. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.

3.07 INSULATION - UNDER MEMBRANE

A. Attachment
   1. Over Metal Decking: Mechanically fasten first layer of insulation to deck in accordance with Manufacturer's instructions and Factory Mutual requirements.
      a. Embed second and subsequent layers of insulation into full beds of adhesive in accordance with Manufacturers' instructions.
   2. Over Wood and Concrete Decking:
      a. Adhere insulation as follows:
         1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

B. Place tapered insulation to the required slope pattern in accordance with Manufacturer's instructions.

C. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

D. Tape joints of insulation in accordance with Manufacturers' instructions.

E. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 24 inches.
   1. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

F. Do not apply more insulation than can be covered with membrane in same day.

G. Install cover board over insulation with long joints in continuous straight lines with end joints staggered between rows. Adhesive attach cover board, following Manufacturer recommendations.
   1. For multilayer locations, lay subsequent coverboard layers with joints staggered minimum 6 inch from joints of preceding layer.

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3.08 INSTALLATION – ROOF DRAINS

A. Do not remove more existing roof drains than can be replaced by retrofit roof drains in same day.
B. Follow roof drain Manufacturer's installation instructions.

3.09 INSTALLATION - MEMBRANE

A. Apply elastomeric membrane roofing system in accordance with Manufacturer's recommendations.
B. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
C. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
D. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
E. Shingle joints on sloped substrate in direction of drainage.
F. Fully Adhered Application: Apply adhesive to substrate and membrane at rate required by Manufacturer. Fully embed membrane in adhesive except in areas directly over expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
    1. Protect black surface from discoloration from bonding adhesive.
    2. Do not place bonding adhesive containers or lids on black membrane surface.
G. Overlap edges and ends and seal seams by contact tape, minimum 6 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
H. At intersections with vertical surfaces:
    1. Extend membrane over cant strips and up a minimum of 8 inches onto vertical surfaces.
    2. Fully adhere flexible flashing over membrane and up to termination bar.
I. Around roof penetrations, seal flanges and flashings with flexible flashing.
J. Install roofing expansion joints where indicated. Make joints watertight.
    1. Install prefabricated joint components in accordance with Manufacturer's instructions.
K. Coordinate installation of roof drains and related flashings.
L. Coordinate installation of associated counterflashings installed under other sections.

3.10 FLASHING AND ACCESSORIES INSTALLATION

A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane Manufacturer's recommendations and details.
B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
    1. Follow roofing Manufacturer's instructions.
    2. Remove protective plastic surface film immediately before installation.
    3. Install water block sealant under the membrane anchorage leg.
    4. Flash with Manufacturer's recommended flashing sheet unless otherwise indicated.
    5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
    6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
    7. When the roof slope is greater than 1:12 (8.3%), apply seam edge treatment along the back edge of the flashing.

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C. Scuppers: Set in sealant and secure to structure; flash as recommended by Manufacturer.
D. Roofing Expansion Joints: Install as shown on drawings and as recommended by roofing Manufacturer.
E. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces:
   1. Install weathertight flashing at all walls, curbs, parapets, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8″ (200 mm) above membrane surface.
   2. Use the longest practical flashing pieces.
   3. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane Manufacturer's recommendations.
   4. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
   5. Provide termination directly to the vertical substrate as shown on roof drawings.

F. Roof Drains:
      a. Taper insulation around drain to provide smooth transition from roof surface to drain. Use specified pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope; slope not to exceed Manufacturer's recommendations.
      b. Position membrane, then cut a hole for roof drain to allow ½″ to ¾″ (12 to 19 mm) of membrane to extend inside clamping ring past drain bolts.
      c. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
      d. Apply sealant on top of drain bowl where clamping ring seats below the membrane
      e. Install roof drain clamping ring and clamping bolts; tighten clamping bolts to achieve constant compression.
   2. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.
   3. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical; otherwise use specified self-curing elastomeric flashing.
   4. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2″ (50 mm) deep, with at least 1″ (25 mm) clearance from penetration, sloped to shed water.
   5. Structural Steel Tubing: If corner radii are greater than ¼″ (6 mm) and longest side of tube does not exceed 12″ (305 mm), flash as for pipes; otherwise, provide a standard curb with flashing.
   6. Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by Manufacturer.

3.11 ROOF WALKWAY INSTALLATION

A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.
   1. Use specified walkway pads unless otherwise indicated.
   2. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1″ (25 mm) and maximum of 3″ (75 mm) from each other to allow for drainage.
   3. If installation of walkway pads over field fabricated splices or within 6″ (150 mm) of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6″ (150 mm) on either side.
   4. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

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3.12 FIELD QUALITY CONTROL

A. Owner will provide testing services in accordance with Section 01 40 00 - Quality Requirements. Contractor to provide temporary construction and materials for testing.
B. Require weekly site attendance of Manufacturer's representative(s) during installation of the Work.

3.13 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal for additional requirements.
B. Remove markings from finished surfaces.
C. In areas where finished surfaces are soiled by work of this section, consult Manufacturer of surfaces for cleaning advice and comply with their documented instructions.
D. Repair or replace defaced or damaged finishes caused by work of this section.

3.14 PROTECTION

A. Protect installed roofing and flashings from construction operations.
B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

NOT FOR BIDDING

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings and counterflashings, for locations where existing counterflashings must be removed and replaced to maintain minimum vertical flashing heights above retrofit roof surfaces.
B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

A. Section 07 53 23 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING
B. Section 07 71 00 - Roof Specialties: Manufactured copings, flashings, and expansion joint covers.
C. Section 07 92 00 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
C. ASTM B32 - Standard Specification for Solder Metal 2020.
D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
E. ASTM D2178/D2178M - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing 2015a.
F. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
G. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
C. Samples: Submit two samples 6 by 6 inch in size illustrating metal finish color.

1.06 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
B. Maintain one copy of each document on site.
C. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience.

NOT FOR BIDDING

1.07 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Pre-Finished Aluminum: ASTM B209 (ASTM B209M); 20 gage (0.032 inch) thick; plain finish shop pre-coated with fluoropolymer coating.

1. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
2. Color: As selected by Architect from manufacturer's full colors.

B. Stainless Steel: ASTM A666, Type 304 alloy, soft temper, 28 gage, (0.0156 inch) thick; smooth No. 4 - Brushed finish.

2.02 FLASHING TYPES

A. Flashing Type 1: Two-piece interlocking type:

1. Material: Stainless steel.
2. Configurations shall be as shown on drawings.
3. Where cap flashings or counter flashings occur, they shall be of two-piece construction with a receiver having a special vertical locking slot that requires no malleting or bending to hold the insert member in place.
4. Keyed or corrugated flashings are unacceptable.
5. Where flashings do not turn up behind walls, terminate with a 1/4" hook dam.
6. Thru-wall flashings at parapets shall be hemmed flush with the exposed face of face brick.
7. Fasteners, mastic for sealing and attachment, etc., shall be as recommended by the manufacturer.

B. Flashing Type 2: Masonry thru-wall type:

1. Stainless steel : ASTM A666 Type 304, soft temper, 0.015 inch (0.4 mm) thick; smooth No. 4 finish.
2. Configurations shall be as shown on drawings.
3. Installation: Refer to Section 04 20 00 - Unit Masonry.

C. Flashing Type 3: Membrane roofing base flashing material as specified in Section 07 53 00 - Elastomeric Membrane Roofing .
D. Flashing Type 4: Formed metal flashing (Other than Type 1):

1. Material: Stainless steel.
2. Configurations shall be as shown on drawings.

2.03 ACCESSORIES

A. Fasteners: Stainless steel, with soft neoprene washers.
B. Outside corner and inside corner material; manufacturer’s standard available units using:

1. Stainless steel: 26 gauge stainless steel.

NOT FOR BIDDING

C. End dam: Product may be folded in line with the flashing material or utilize preformed end dams by manufacturer using:

1. Stainless steel: 26 gauge stainless steel

D. Protective Backing Paint: Asphaltic mastic, ASTM D4479 Type I.
E. Sealant to be Concealed in Completed Work: Type 3 as specified in Section 07 92 00.
F. Sealant to be Exposed in Completed Work: Type 1 as specified in Section 07 92 00.
G. Reglets: Surface mounted type, galvanized steel; face and ends covered with plastic tape.
H. Termination Bars: 1 inch wide x 1/8 inch thick; stainless steel.

2.04 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
B. Form pieces in longest possible lengths.
C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
E. Fabricate corners from one piece with minimum 18 inch long legs; solder for rigidity, seal with sealant.
F. Fabricate vertical faces with bottom edge formed outward 3/4 inch and hemmed to form drip.
G. Fabricate flashings to allow toe to extend 4 inches over roofing membrane. Return and brake edges.

2.05 ACCESSORIES

A. Fasteners: Galvanized steel, with soft neoprene washers.
B. Primer: Zinc chromate type.
C. Concealed Sealants: Non-curing butyl sealant.
D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
E. Plastic Cement: ASTM D4586/D4586M, Type I.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.
B. Install surface mounted reglets true to lines and levels, and seal top of reglets with sealant.
C. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

NOT FOR BIDDING

3.03 INSTALLATION

A. Conform to drawing details and to the following:

1. SMACNA Architectural Sheet Metal Manual,

B. Insert flashings into reglets to form tight fit; secure in place with plastic wedges; seal flashings into reglets with sealant.
C. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..
D. Apply plastic cement compound between metal flashings and felt flashings.
E. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
F. Fasten cavity wall flashings to stud back-up with a non-corrosive termination bar and seal the top edge of the flashing with sealant.
G. Seal metal joints watertight.
H. Secure gutters and downspouts in place with concealed fasteners.
I. Set splash pads under downspouts.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for field inspection requirements.
B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

NOT FOR BIDDING

SECTION 07 71 00 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Copings.
2. Roof-edge specialties.
3. Reglets and counterflashings.

B. Related Requirements:
1. Section 06 10 26 "Roofing Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 07 62 00 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
3. Section 07 71 29 "Manufactured Roof Expansion Joints" for manufactured roof expansion-joint cover assemblies.
4. Section 07 72 00 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.
5. Section 07 92 00 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

C. Preinstallation Conference: Conduct conference at Warner Elementary School at 801 W 18th ST, Wilmington, DE 19802.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For roof specialties.

1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
4. Detail termination points and assemblies, including fixed points.
5. Include details of special conditions.

C. Samples: For each type of roof specialty and for each color and texture specified.

NOT FOR BIDDING

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For roof-edge flashings, for tests performed by a qualified testing agency.

B. Sample Warranty: For manufacturer's special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class and SPRI ES-1 tested to specified design pressure.

B. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Section 075300 “Elastomeric Membrane Roofing.”

C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and set quality standards for fabrication and installation.

1. Build mockup of typical roof edge as shown on Drawings.
2. Build mockup of typical roof edge, including fascia, approximately **10 feet** long, including supporting construction, seams, attachments, underlayment**,** and accessories.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.

B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.8 FIELD CONDITIONS

A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.

B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.9 WARRANTY

A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 075300 “Elastomeric Membrane Roofing.”

NOT FOR BIDDING

B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. FM Approvals' Listing: Manufacture and install roof-edge specialties that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with FM Approvals' markings.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 ROOF-EDGE SPECIALTIES

A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Elevate Anchorgard SP Extended Fascia or comparable product by one of the following:

a. Carlisle SynTec Systems

b. Hickman Company, W. P.
c. Metal-Era, Inc.

2. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, 0.063 inch (1.60 mm) thick.

a. Surface: Smooth, flat finish.
b. Finish: As selected by Architect from manufacturer's full range.

NOT FOR BIDDING

3. Corners: Factory mitered and continuously welded.
4. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
5. Receiver: Manufacturer's standard material and thickness.
6. Special Fabrications: Radiussed sections.
7. Fascia Accessories: Fascia extenders with continuous hold-down cleats.

B. Two-Piece Gravel Stops: Manufactured, two-piece, metal gravel stop in section lengths not exceeding 12 feet (3.6 m), with a horizontal flange and vertical leg[**,** fascia terminating in a drip edge, and concealed splice plates of same material, finish, and shape as gravel stop. Provide matching corner units.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Carlisle SynTec SecurEdge Gravel Stop or comparable product by one of the following:
   a. Castle Metal Products.
   b. Metal-Era, Inc.

2. Formed Aluminum Sheet Gravel Stops: Aluminum sheet, 0.063 inch (1.60 mm) thick.

   a. Surface: Smooth, flat finish.
   b. Finish: Clear anodic

3. Corners: Factory mitered and continuously welded.
4. Accessories: Fascia extenders with continuous hold-down cleats.

2.3 REGLETS AND COUNTERFLASHINGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Castle Metal Products.
2. Fry Reglet Corporation.
3. Metal-Era, Inc.

B. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:

1. Stainless Steel: 0.019 inch (0.48 mm) thick.
2. Masonry Type, Embedded: Provide reglets with offset top flange for embedment in masonry mortar joint.

C. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches (100 mm) and in lengths not exceeding 12 feet (3.6 m) designed to snap into reglets and compress against base flashings with joints lapped, from the following exposed metal:
1. Stainless Steel: 0.019 inch (0.48 mm) thick.

D. Accessories:

1. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing into reglets where clearance does not permit use of standard metal counterflashing or where reglet is provided separate from metal counterflashing.
2. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.

E. Stainless-Steel Finish: No. 2B (bright, cold rolled, unpolished)

NOT FOR BIDDING

2.4 MATERIALS

A. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

B. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.

2.5 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils (0.76 to 1.0 mm) thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: ASTM D 1970/D 1970M; stable after testing at 240 deg F (116 deg C).
2. Low-Temperature Flexibility: ASTM D 1970/D 1970M; passes after testing at minus 20 deg F (29 deg C).
3. Products: Subject to compliance with requirements, provide one of the following.

a. Carlisle Coatings & Waterproofing; CCW WIP 300HT.
b. Grace Construction Products, a unit of W. R. Grace & Co.; Grace Ice and Water Shield HT.
c. Henry Company; Blueskin PE200 HT.

2.6 MISCELLANEOUS MATERIALS

A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:

1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

B. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

C. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.

D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.7 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

NOT FOR BIDDING

1. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.

C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.

1. Apply continuously under roof-edge specialties and reglets and counterflashings.
2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.

3.3 INSTALLATION, GENERAL

A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.

1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
2. Provide uniform, neat seams with minimum exposure of solder and sealant.
3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
4. Torch cutting of roof specialties is not permitted.
5. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of uncoated aluminum and stainless-steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

NOT FOR BIDDING

C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.

1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise indicated on Drawings.
2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.

D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.

E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.

F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

3.4 ROOF-EDGE SPECIALITIES INSTALLATION

A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.

B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.5 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.

3.6 REGLET AND COUNTERFLASHING INSTALLATION

A. General: Coordinate installation of reglets and counterflashings with installation of base flashings.

B. Surface-Mounted Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap 4 inches (100 mm) over top edge of base flashings.

C. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches (100 mm) over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches (100 mm) and bed with butyl sealant. Fit counterflashings tightly to base flashings.

3.7 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.

NOT FOR BIDDING

D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION

NOT FOR BIDDING

SECTION 07 71 29 – MANUFACTURED ROOF EXPANSION JOINTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Bellows-type roof expansion joints.

1.02 RELATED REQUIREMENTS

A. Section 07 53 00 Elastomeric Membrane Roofing: Roofing system.
B. Section 07 62 00 Sheet Metal Flashing and Trim: Shop- and field-fabricated sheet metal expansion-joint systems, flashing, and other sheet metal items.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings

1. Include plans, elevations, sections, and attachment details.
2. Include details of splices, intersections, transitions, fittings, method of field assembly, and location and size of each field splice.
3. Provide isometric drawings of intersections, terminations, and changes in joint direction or planes, depicting how components interconnect with each other and adjacent construction to allow movement and achieve waterproof continuity.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.
B. Product Test Reports: For each fire-barrier provided as part of a roof-expansion-joint assembly, for tests performed by a qualified testing agency.
C. Sample Warranties: For special warranties.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Installer of roofing membrane.

1.06 WARRANTY

A. Special Warranty: Manufacturer and Installer agree to repair or replace roof expansion joints and components that leak, deteriorate beyond normal weathering, or otherwise fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two (2) years from date of Substantial Completion.

B. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof expansion joints that show evidence of deterioration of factory-applied finishes within specified warranty period.

NOT FOR BIDDING

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    a. Color fading more than five Hunter units when tested according to ASTM D 2244.
    b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Warranty Period: Twenty (20) years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. General: Roof expansion joints shall withstand exposure to weather, remain watertight, and resist the movements indicated without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint seals, failure of connections, and other detrimental effects.
    1. Temperature Change: 120 degrees F, ambient; 180 degrees F, material surfaces.

C. Fire-Test-Response Characteristics: Provide fire-barrier assemblies with fire-test-response characteristics as determined by testing identical products, per test method indicated, by UL or another testing agency acceptable to authorities having jurisdiction. Assemblies shall be capable of anticipated movement while maintaining fire rating. Fire-barrier products shall bear classification marking of qualified testing agency.

2.02 BELLOWS-TYPE ROOF EXPANSION JOINTS

A. Source Limitations: Obtain bellows-type roof expansion joints approved by roofing manufacturer and that are part of roofing membrane warranty.

B. Extruded Bellows Roof Expansion Joint: Manufactured, continuous, waterproof, joint-cover assembly; consisting of primary and secondary, single-layered, elastomeric seals; secured along each edge with extruded-aluminum retainers for fastening to substrate. Provide type indicated, splicing units, adhesives, and other components as recommended by manufacturer for complete installation. Fabricate each assembly specifically for installation configuration indicated on Drawings.
    1. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following.
        a. C/S Group.
        b. Michael Rizza Company.
        c. MM Systems Corporation.
    2. Size: As required to match curbs at existing expansion joints.
    3. Joint Movement Capability: Plus and minus fifty percent (50%) of joint size.
    4. Primary Seal: Silicone extrusion; color black.
    5. Drain-Tube Assemblies: Equip secondary seal with drain tubes and seals to direct collected moisture to existing drain paths to building exterior.
        a. Verify locations of drain paths during removal of existing expansion joints.

2.03 MATERIALS

A. EPDM Membrane: ASTM D 4637, Type standard with manufacturer for application.

NOT FOR BIDDING

B. Adhesives: As recommended by roof-expansion-joint manufacturer and with a VOC content of seventy (70) g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
C. Adhesives: As recommended by roof-expansion-joint manufacturer and that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
D. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.
    1. Exposed Fasteners: Gasketed. Use screws with hex washer heads matching color of material being fastened.
E. Mineral-Fiber Blanket: ASTM C 665.
F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
B. Examine roof-joint openings, inside surfaces of parapets, and expansion-control joint systems that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.
C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Comply with manufacturer's written instructions for handling and installing roof expansion joints.
    1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.
    2. Install roof expansion joints true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
    3. Provide for linear thermal expansion of roof expansion joint materials.
    4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.
    5. Provide uniform, neat seams.
    6. Install roof expansion joints to fit substrates and to result in watertight performance.
    7. Torch cutting of roof expansion joints is not permitted.
    8. Do not use graphite pencils to mark aluminum surfaces.
B. Directional Changes and Other Expansion-Control Joint Systems: Coordinate installation of roof expansion joints with other expansion-control joint systems to result in watertight performance. Install factory-fabricated units at directional changes and at transitions between roof expansion joints and existing exterior expansion-control joints to provide continuous, uninterrupted, and watertight joints.

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C. Splices: Splice roof expansion joints with materials provided by roof-expansion-joint manufacturer for this purpose, to provide continuous, uninterrupted, and waterproof joints.
   1. Install waterproof splices and prefabricated end dams to prevent leakage of secondary-seal membrane.
D. Fire Barrier: Install fire barrier where indicated to provide continuous, uninterrupted fire resistance throughout length of roof expansion joint, including transitions and end joints.
E. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

3.03 PROTECTION

A. Protect roof expansion joints from foot traffic, displacement, or other damage.
B. Remove and replace roof expansion joints and components that become damaged by moisture or otherwise.

END OF SECTION

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SECTION 07 72 00 - ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Curbs.

B. Equipment rails.

C. Roof penetrations mounting curbs.

1.02 RELATED REQUIREMENTS

A. Section 075300 - Elastomeric Membrane Roofing

B. Section 077100 - Roof Specialties: Other manufactured roof items.

1.03 REFERENCE STANDARDS

A. 29 CFR 1910.23 - Ladders; current edition.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

C. FM (AG) - FM Approval Guide; current edition.

D. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

1.04 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

B. Shop Drawings: Submit dimensioned, project specific shop drawings for each type of roof-mounted item.

C. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.
   3. Provide written confirmation that the completed work maintains the specified roof warranty

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products under cover and elevated above grade.

1.06 WARRANTY

A. Correct defective Work within a two year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 ROOF CURBS

A. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and

NOT FOR BIDDING

designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.

1. Roof Curb Mounting Substrate: Curb substrate consists of flat roof deck sheathing with insulation.
2. Sheet Metal Material:

a. Aluminum: 0.0907 inch minimum thickness, with 3003 alloy, and H14 temper. 1) Finish: Mill finish.

3. Sheet Metal: Hot-dip zinc coated steel sheet complying with ASTM A653/A653M, SS Grade 33; G90 coating designation; 18 gage, 0.048 inch thick.
   a. Color: As selected by Architect from manufacturer's standard line of colors.
4. Provide layouts and configurations indicated on drawings.

B. Curbs Adjacent to Roof Openings: Provide curb on each side of opening, with top of curb horizontal for equipment mounting.

1. Provide preservative treated wood nailers along top of curb.
2. Insulate inside curbs with 1-1/2 inch thick fiberglass insulation.

C. Equipment Rail Curbs: Straight curbs on each side of equipment, with top of curbs horizontal and level with each other for equipment mounting.

1. Height Above Finished Roof Surface: 12 inches, minimum.

D. Pipe, Duct, or Conduit Mounting Curbs: Vertical posts, minimum 8 inches square unless otherwise indicated.

1. Provide sliding channel welded along top edge with adjustable height steel bracket, fabricated to fit item supported.
2. Height Above Finished Roof Surface: 8 inches, minimum.

PART 3 - EXECUTION

2.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using methods recommended by Manufacturer for achieving acceptable results for applicable substrate under project conditions.

2.03 INSTALLATION

A. Install in accordance with Manufacturer's instructions, in manner that maintains weathertight integrity of roofing system.

B. The Roofing Contractor is responsible for raising existing HVAC equipment to the final height required by the proposed roofing system, curb detail, code, and equipment manufacturer.

2.04 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

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SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.
B. Self-leveling pourable joint sealants.
C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 71 29 – Manufactured Roof Expansion Joints: Sealants forming part of expansion joint cover assemblies.

1.03 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015.
B. ASTM C834 - Standard Specification for Latex Sealants 2017.
C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2018.
D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
E. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2018.
G. ASTM C1311 - Standard Specification for Solvent Release Sealants 2014.
H. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants 2018.
I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints 2019 (Reapproved 2020).
J. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness 2015, with Editorial Revision (2017).

1.04 SUBMITTALS

A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.
B. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
D. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.

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E. Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.
F. Field Quality Control Plan: Submit at least two weeks prior to start of installation.
G. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.
H. Field Quality Control Log: Submit filled out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
D. Preinstallation Field Adhesion Test Plan: Include destructive field adhesion testing of one sample of each combination of sealant type and substrate, except interior acrylic latex sealants, and include the following for each tested sample.
    1. Identification of testing agency.
    2. Preinstallation Field Adhesion Test Log Form: Include the following data fields, with known information filled out.
        a. Test date.
        b. Copy of test method documents.
        c. Age of sealant upon date of testing.
        d. Test results, modeled after the sample form in the test method document.
        e. Indicate use of photographic record of test.
E. Field Quality Control Plan:
    1. Visual inspection of entire length of sealant joints.
    2. Non-destructive field adhesion testing of sealant joints, except interior acrylic latex sealants.
    3. Destructive field adhesion testing of sealant joints, except interior acrylic latex sealant.
        a. For each different sealant and substrate combination, allow for one test every 100 feet in the first 1000 linear feet, and one test per 1000 linear feet thereafter, or once per floor on each elevation.
        b. If any failures occur in the first 1000 linear feet, continue testing at frequency of one test per 500 linear feet at no extra cost to Owner.
    4. Field testing agency's qualifications.
    5. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.
F. Field Adhesion Test Procedures:
    1. Allow sealants to fully cure as recommended by manufacturer before testing.
    2. Have a copy of the test method document available during tests.
    3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.

NOT FOR BIDDING

4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.

G. Non-Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.

H. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
1. Sample: At least 18 inch long.
2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch by that percentage; if adhesion failure occurs before the "1 inch mark" is that distance from the substrate, the test has failed.
3. If either adhesive or cohesive failure occurs prior to minimum elongation, take necessary measures to correct conditions and re-test; record each modification to products or installation procedures.

1.06 WARRANTY

A. Correct defective work within a five year period after Date of Substantial Completion.

B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal , exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

A. Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
   a. Wall expansion and control joints.
   b. Joints between door, window, and other frames and adjacent construction.
   c. Joints between different exposed materials.
   d. Openings below ledge angles in masonry.
   e. Other joints indicated below.
2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
   a. Joints between door, window, and other frames and adjacent construction.
   b. Joints between plumbing fixtures and adjacent construction.
3. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
4. Do not seal the following types of joints.
   a. Intentional weepholes in masonry.
   b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
   c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
   d. Joints where installation of sealant is specified in another section.

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e. Joints between suspended panel ceilings/grid and walls.

B. Exterior Joints: Use non-sag non-staining silicone sealant, Type 1, unless otherwise indicated.
1. Type 3 - Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.

C. Interior Joints: Use non-sag acrylic latex sealant, Type 2, unless otherwise indicated.
1. Interior Expansion and Control Joints: Polyurethane sealant; Type 1A.
2. Interior Joints at windows, storefront and curtainwall: Polyurethane sealant; Type 1A.
3. Fire-rated Construction: ASTM C 834, UL Listed.
4. In Sound-Rated Assemblies: Acoustical sealant; Type 5.
5. Type 7 - Narrow Control Joints in Interior Concrete Slabs Exposed to View: Self-leveling polyurea sealant.
6. Interior Wet Areas: Type 6 - Mildew-Resistant Silicone Sealant: not expected to withstand continuous water immersion or traffic. Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.

2.02 JOINT SEALANTS - GENERAL

A. Sealant Types Summary:
1. Type 1: Non-Staining Silicone.
2. Type 1A: Polyurethane.
3. Type 2: Acrylic Emulsion Latex
4. Type 3: Non-Curing Butyl Sealant
5. Type 4: Fire resistant foam sealant: Refer to Section 078400 - Firestopping.
6. Type 5: Acoustical Sealant
7. Type 6: Mildew-Resistant Silicone Sealant
8. Type 7: Self-Leveling Polurea Sealant

2.03 NONSAG JOINT SEALANTS

A. Type 1 - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
4. Color: To be selected by Architect from manufacturer's standard range.
5. Cure Type: Single-component, neutral moisture curing.
6. Service Temperature Range: Minus 65 to 180 degrees F.
7. Manufacturers:
a. Dow Chemical Company; 795 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
b. Sika Corporation; Sikasil WS-295: www.usa-sika.com/#sle.
c. Pecora Corporation; 890NST: www.pecora.com.
d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Type 1A - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
3. Color: To be selected by Architect from manufacturer's standard range.
4. Service Temperature Range: Minus 40 to 180 degrees F.
5. Basis-of-Design Product: GacoFlex H.E.R. Flashing-Grade Polyurethane Roof Sealant manufactured by Gaco (a Holcim brand).
6. Manufacturers:

NOT FOR BIDDING

a. Pecora Corporation; DynaTrol 1-XL: www.pecora.com.
b. Sika Corporation; Sikaflex-15 LM: www.usa-sika.com/#sle.
c. Elevate, Nashville, TN, http://www.elevatecommercialbp.com
d. Substitutions: See Section 01 60 00 - Product Requirements.

C. Type 2 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.

D. Type 3 - Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, non-sag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.

E. Type 4: Fire resistant foam sealant: Refer to Section 078400 - Firestopping.

F. Type 5 - Acoustical Sealant for Concealed Locations: ASTM C 834, UL Listed.
1. Composition: Acrylic latex emulsion sealant.
2. Applications: Use for concealed locations only:
a. Acoustical application: Sealant bead between top stud runner and structure and between bottom stud track and floor.
3. Products:
a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant: www.pecora.com.
b. Hilti, Inc.; CP 506 Smoke and Acoustical Sealant: www.us.hilti.com.
c. USG Company; Sheetrock Brand Acoustical Sealant; www.usg.com.

G. Type 6 - Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Color: White.
2. Manufacturers:
a. Pecora Corporation: www.pecora.com.
b. Sika Corporation; Sikasil GP: www.usa-sika.com.

2.04 SELF-LEVELING SEALANTS

A. Type 7 - Semi-Rigid Self-Leveling Polyurea Joint Filler: Two-component, 100 percent solids; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
1. Durometer Hardness, Type A: 75, minimum, after seven days when tested in accordance with ASTM D2240.
2. Color: To be selected by Architect from manufacturer's standard colors.
3. Joint Width, Minimum: 1/8 inch.
4. Joint Width, Maximum: 3/4 inch.
5. Joint Depth: Provide product suitable for joints from 1/8 inch to 1 inch in depth excluding space for backer rod.
6. Manufacturers:
a. Adhesives Technology Corporation; Crackbond JF-311: www.atcepoxy.com/#sle.
b. ARDEX Engineered Cements; ARDEX ARDISEAL RAPID PLUS: www.ardexamericas.com/#sle.
c. Euclid Chemical Company; EUCO QWIKjoint UVR: www.euclidchemical.com/#sle.
d. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.

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1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
2. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
3. Manufacturers:
   a. Nomaco, Inc; SOF Rod: www.nomaco.com.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

D. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.

1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
2. Notify Architect of date and time that tests will be performed, at least 7 days in advance.
3. Record each test on Preinstallation Adhesion Test Log as indicated.
4. If any sample fails, review products and installation procedures, consult manufacturer, or take whatever other measures are necessary to ensure adhesion; re-test in a different location; if unable to obtain satisfactory adhesion, report to Architect.
5. After completion of tests, remove remaining sample material and prepare joint for new sealant installation.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Perform acoustical sealant application work in accordance with ASTM C919.

D. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:

1. Width/depth ratio of 2:1.
2. Neck dimension no greater than 1/3 of the joint width.
3. Surface bond area on each side not less than 75 percent of joint width.

E. Install bond breaker backing tape where backer rod cannot be used.

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F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
I. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
B. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet, notify Architect immediately.
C. Destructive Adhesion Testing: If there are any failures in first 1000 linear feet, notify Architect immediately.
D. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
E. Repair destructive test location damage immediately after evaluation and recording of results.

3.05 POST-OCCUPANCY

A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

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SECTION 26 41 13 - LIGHTNING PROTECTION SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. Section includes
   1. Lightning Protection System (LPS).
   2. Certification of completed LPS by Lightning Protection Institute (LPI).

B. Related requirements
   1. Section 07 53 00 - Elastomeric Membrane Roofing
      a. Sealing and flashing of roof penetrations required by LPS.

1.02 SYSTEM DESCRIPTION

A. The lightning protection system shall be designed and installed in accordance with the following.
   1. National Fire Protection Association (NFPA)
      a. NFPA 780: Standard for the Installation of Lightning Protection Systems.
   2. Underwriters Laboratories (UL)
      a. UL 96A: Installation Requirements for Lightning Protection Systems.
   3. Lightning Protection Institute (LPI)
      a. LPI 175: Lightning Protection Standards.

1.03 SUBMITTALS

A. Product Data Sheets
   1. For each product proposed for use in the LPS.

B. Shop Drawings
   1. Plans and elevations showing the extent of the system layout.
   2. Large-scale details showing attachment of products to other building assemblies and components.
   3. Drawings shall include the stamp of the LPI Master Installer responsible for the system design.

C. Progress Photos
   1. Photos of in-ground system and concealed portions of installation in numbers and detail required for LPI certification.

D. Closeout
   1. Provide Owner, Architect, and each roofing installer with copies of all approved LPS submittals, including those listed above and the following.
      a. As-built drawing of the LPS.
      b. Copies of the LPI Certificates of Completion.

1.04 QUALITY ASSURANCE

A. The system design and installation shall be completed by a contractor specializing in the installation of lightning protection systems.
   1. Design and installation shall be completed under the supervision of an LPI Certified Master Installer or Master Installer – Designer.
   2. The lightning protection contractor shall furnish an LPI Master Installation Certificate upon completion of the installation.

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PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. The system furnished under this specification shall be the standard product of a manufacturer regularly engaged in the production of lightning protection equipment and a member of LPI.

B. Equipment shall be the manufacturer's latest approved design of construction to suit the application where it is to be used in accordance with accepted industry standards and with NFPA, LPI, & UL requirements.

C. All materials shall comply in weight, size, and composition with the requirements of a nationally recognized testing laboratory.

D. All equipment shall be properly listed and labeled.

2.02 MANUFACTURERS

A. Acceptable Manufacturers

1. A/C Lightning Protection, Inc. (www.aclightningprotection.com)
2. allG Fabrication (www.allgfab.com)
3. DEHN, Inc. (www.dehn-usa.com)
4. East Coast Lightning Equipment, Inc. (www.ecle.biz)
5. Harger, Inc. (www.harger.com)
6. HLP Systems, Inc. (www.hlpsystems.com)
7. Independent Protection Company, Inc. (www.ipclp.com)
8. LAGPRO, Inc. (www.lagpro.com)
9. nVent, Inc. (www.nvent.com)
10. Preferred Lightning Protection (www.preferredlp.com)
11. Robbins Lightning, Inc. (www.robbinslightning.com)
12. Thompson Lightning Protection, Inc. (www.tlpinc.com)
13. VFC (www.vfclp.com)

B. Materials

1. Class I materials shall be used for systems on structures not exceeding seventy-five (75) feet in height.
2. Copper shall be of the grade ordinarily required for commercial electrical work, generally designated as being ninety-five (95) percent conductive when annealed. Aluminum conductors shall be of electrical grade aluminum.
3. Lightning protection materials shall be coordinated with building construction materials to assure compatibility. Aluminum lightning protection materials shall not be embedded in concrete or masonry, installed on or below copper surfaces, or used where contact with the earth is possible terminating eighteen (18) inches above grade level minimum. Copper lightning protection materials shall not be installed on aluminum surfaces. Copper system components within 2 feet of chimney exhausts shall be tin coated to protect against deterioration.
4. Strike termination devices shall be provided to place the entire structure under a zone of protection as defined by the Standards. Air terminals shall project a minimum of ten (10) inches above protected areas or objects. Air terminals shall be located within 2 feet of exposed corners and roof edges.
5. Metallic bodies having a thickness 3/16" or greater may serve as strike termination devices without the addition of air terminals. These bodies shall be made a part of the lightning protection system by connection(s) according to the Standards using main size conductors and bonding fittings with three (3) square inches of surface contact area.
6. Cable conductors shall provide a two-way path from strike termination devices horizontally and downward to connections with the ground system. Cable conductors shall

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be free of excessive splices and sharp bends. No bend of a conductor shall form a final included angle of less than ninety (90) degrees nor have a radius of bend less than eight (8) inches. Structural elements and design features shall be used whenever possible to minimize the visual impact of exposed conductors.

7. Cable down conductors may be concealed within the building construction or enclosed within PVC conduit from roof to grade level. Down conductors shall be spaced at intervals averaging not more than one hundred (100) feet around the protected perimeter of the structure. In no case shall any structure have fewer than two down conductors. Where down conductors are exposed to environmental hazards at grade level, guards shall be used to protect the conductor to a point six (6) feet above grade.
9. Exposed cable conductors shall be secured to the structure at intervals not exceeding thirty-six (36) inches. Fasteners, nails, screws, or bolts shall be of suitable configuration for the intended application and of the same material as the conductor or of electrolytically compatible materials. Galvanized or plated steels are not acceptable.
10. Connectors and splicers shall be of suitable configuration and type for the intended application and of the same material as the conductors or of electrolytically compatible materials.
11. Ground terminations suitable for the soil conditions shall be provided for each downlead conductor. For any structure in excess of sixty (60) feet in vertical elevation above grade, a ground loop interconnecting all ground terminals and other building grounded systems shall be provided.
12. Common interconnection of all grounded systems within the building shall be accomplished using main size conductors and fittings. Grounded metal bodies located within the calculated bonding distance as determined by the formulas of the Standards shall be bonded to the system using properly sized bonding conductors.
13. Surge suppression shall be provided at every system entrance to the structure to prevent massive lightning overvoltages from entering the structure. Additional surge protection for internal electronic equipment may be determined through cost-benefit analysis by a trained engineer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine conditions under which installation of LPS is to proceed.
B. Report any observed deficiencies that would obstruct the completion of the Work in writing to Architect.
C. Do not proceed with the Work until deficiencies have been corrected.

3.02 INSTALLATION

A. The installation of the lightning protection system components shall be done in a neat and workmanlike manner.
B. Roof penetrations required for down conductors shall be made using through-roof assemblies with solid rods and appropriate roof flashings.
    1. To assure compatibility with the roof warranty, the roofing contractor shall provide labor, materials, and methods for the following.
        a. Sealing and flashing of roofing penetrations by LPS components.
        b. Additional roof and structure preparations to enable the LPS contractor to install conductor runs and connectors.
    2. Review LPS components, roof penetration requirements, and proposed conductor routing with roofing contractor.

NOT FOR BIDDING

C. If the protected structure is an addition to or is attached to an existing structure that does not have a lightning protection system, the contractor shall certify that the system installed complies with the requirements of the Standards, and advise the owner of the lightning protection work required on the existing structure to obtain full certification for the structure. If the existing structure does have a lightning protection system, the contractor shall advise the owner of any additional work required on the existing system to bring it into compliance with current Standards and thus qualify for LPI certification.

3.03 OWNER REVIEW

A. Obtain Owner representative's signature at two stages of the work as required for LPI certification.
   1. Concealed in-ground system.
   2. Exposed or roof level area at completion.

3.04 INSPECTION

1. Arrange for inspection of completed LPS by LPI representative as required for LPI certification.
2. Provide closeout documents per Paragraph 1.03.E.

END OF SECTION

NOT FOR BIDDING