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SECTION 00116

INVITATION TO BID

Levittown Library Window Replacements and Expansion

Levittown Library, Bucks County Free Library

7311 New Falls Road, Levittown PA 19055

DESCRIPTION OF SERVICES

The intent of this bid is to enter in to a contract for the replacement and expansion of the windows at the Levittown Library, Bucks County Free Library. 7311 New Falls Road, Levittown PA 19055

Bidders should read the entire set of specifications carefully, as these will form the basis of the contractual agreement with BCFL. Failure to comply with the specifications may provide grounds to nullify the contract agreement.

Sealed proposals: Vendor will deliver one (2) original copy to the following address:

Bucks County Free Library Administration
150 S. Pine Street
Doylestown, PA 18901

By 2:00 pm on September 1st 2020

Bids received after the above cited time will be considered a late bid and are not acceptable unless waived by BCFL Administration.

Please email any questions to Joe Thompson at: thompsonj@buckslib.org

NOTICE

Advertisement for Bid

Levittown Library Window Replacement and Expansion Bucks County Free Library (BCFL)

The Bucks County Free Library CFO will receive bids in his office at **150 S. Pine Street, Doylestown, PA** until 2:00 pm on September 1st 2020, for the replacement and expansion of the windows at the Levittown Library.

Get full information and detailed specifications at <http://www.buckslib.org/bids>.

Each bid must be enclosed in a sealed envelope, clearly marked on the outside. A security deposit (certified check, cashier check or properly executed bid bond) for 5% is required when the bid price is more than \$19,400.00. Performance and Payment Bonds are required in the amount of 100% of the contract amount. A Maintenance Bond is required in the amount of 10% of the contract. Bidders are advised Prevailing Minimum Wage Rates, determined by the Secretary of Labor and Industry, must be paid to all workers employed on this project.

There will be a 10:00am mandatory Pre-Bid Meeting for this project on August 11th 2020 at the project site: **7311 New Falls Road, Levittown PA 19055**

Bids are opened publicly in the 2nd floor Conference area of the Doylestown Library at 2:05PM the day they are due. BCFL reserves the right to accept or reject any and all bids or parts thereof and to award the contract as is determined to serve its best interest.

This project is supported in part through a grant from the Office of Commonwealth Libraries, Pennsylvania Department of Education, with funds provided from the Keystone Recreation, Park, and Conservation Fund.

SPECIAL CLAUSES

PRE-BID MEETING AND SITE VISIT

There will be a mandatory Pre-Bid Meeting for this project at 10am on Tuesday August 11th 2020 at the site located on 7311 New Falls Road, Levittown PA 1905

PENNSYLVANIA PREVAILING WAGE RATES

The PA Prevailing Wage Act (Act of 1961, P>L> 987. NO 442) will apply to this contract. This act defines “PUBLIC WORKS” as construction, reconstruction, demolition, alteration and/or work other than maintenance work, done under contract and paid for in whole or in part out of the funds of a public body where the estimated cost of the total project is in excess of \$25,000, but shall not include work performed under a rehabilitation of manpower training program.

See ATTACHMENT A for the PA Prevailing Wages assigned to this project by the PA Department of Labor & Industry.

EMPLOYMENT VERIFICATION ACT

The PA Public Works Employment Verification Act (Act 127 Of 2012) will apply to this contract. This Act requires public works (see definition of Public Works above) contractors and subcontractors to verify employment eligibility; provides for the powers and duties of the Department of General Services; prescribes sanctions; and establishes good faith immunity under certain circumstances. See ATTACHMENT B for additional information on the Public Works Employment Verification Act and the Public Works Verification Form.

BONDS AND INSURANCE

All bidders are hereby informed that failure to provide the Bonds and Insurance Certificate with the required limits and coverage within twenty (20) days of receiving a notice of the award may result in the bidder's security deposit being forfeited as liquidated damages and the bid being awarded to the next lowest bidder.

Where the Contract calls for the doing and performing of Public Work and labor necessary for the complete performance of the contract for the construction, reconstruction, alteration or repair of any Public building or other Public Work or Public improvement, including highway work, and where said contract exceeds \$10,000 the successful bidder shall furnish to the BCFL Chief Operating Officer.

PERFORMANCE BOND with surety in the amount of 100% of the contract amount. The Performance Bond shall be conditioned upon the faithful performance of the contract in accordance with the plans, specifications and conditions of the contract.

LABOR AND MATERIAL (PAYMENT) BOND with surety in the amount of 100% of the contract amount. The Labor and Material Bond shall be conditioned upon the prompt payment of all material furnished and/or labor supplied in the prosecution of the work.

MAINTENANCE BOND with surety in the amount of 10% of the contract amount. The Maintenance Bond shall be surety against defective or inferior materials or workmanship which may develop during a period of one year from date of total completion and acceptance of all work performed under the contract. All bonds shall become binding upon the awarding of said contract and shall be accompanied by a Power of Attorney. The Contractor shall pay for the entire cost of bonds.

INSURANCE REQUIREMENTS

The vendor awarded this contract is required to provide a Certificate of Insurance that contains a minimum of the following coverage and limits:

Commercial General Liability - (policy to include premises and operations, products/completed operations and blanket contractual liability- the contractual section of the cover- age must cover this agreement)

General Aggregate Limit \$2,000,000.

Products & Completed Operations Aggregate Limit \$2,000,000.

Each Occurrence Limit \$1,000,000.

Automobile Liability - to include owned, non-owned and hired vehicles: Combined Single Limit\$ 500,000.

or Bodily Injury \$ 250,000. each person

Bodily Injury \$ 500,000. each accident

and Property Damage \$ 100,00

Excess Liability – coverage is to be in an umbrella form, any restrictions or limitations in coverage should be specified on the certificate of insurance-

Each occurrence \$2,000,000.

Aggregated Limit \$2,000,000.

Workers Compensation Statutory

and Employer's Liability:

Bodily Injury by Accident \$ 100,000. each accident

Bodily Injury by Disease \$ 100,000. each employee

Bodily Injury by Disease \$ 500,000. policy limit

When it applies, Additional Insured shall read:

The Bucks County Free Library shall be included as additional insured with respect to the work performed for this contract: Levittown Library Window Replacement and Expansion

Cancellation Clause shall read:

Should any of the above-described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Certificate Holder-

The Bucks County Free Library, Attn: Administration Offices, Bucks County Free Library, 150 South Pine Street, Doylestown PA 18901

INSTRUCTIONS TO BIDDERS

1. Bid packages must be obtained by downloading them from <http://www.buckslib.org/bids>.
2. BCFL reserves the right to accept and award a contract to the lowest responsive, responsible bidder. BCFL reserves the right to reject any or all bids or any part thereof. BCFL reserves the right to award a contract based on evaluation of specific criteria found in these specifications. Bids on forms other than that provided herewith will be rejected.

QUALIFICATIONS OF BIDDERS

3. The Bucks County Free Library may make such investigation, as it deems necessary to determine the ability of bidder to perform the work. BCFL reserves the right to reject any bid if investigation of such bidder fails to satisfy BCFL that such bidder is properly qualified to carry out the obligations of the contract, and to complete the work contemplated therein.
4. Bidders may be required to submit the names and addresses of the officers or principals of the Corporation, firm or partnership submitting a bid. Failure to comply could result in the rejection of such bid as non-responsive.
5. Unless required to complete the Questionnaire and Financial Statement as may be indicated elsewhere in these specifications, all bidders must be prepared to present suitable evidence of their financial standing, and to furnish a list of similar work recently completed.
6. BCFL has the right to reject any and all bids from any bidder that is in or contemplates bankruptcy of any chapter or nature. Said bidder must notify BCFL in writing of any existing condition or knowledge of same.
7. No verbal instructions or information to bidders will be binding. The specifications will be considered clear and complete unless written attention is called to any apparent discrepancies or incompleteness thereof, before the opening of bids. Should any written inquiries be received by BCFL, these inquiries will be answered in the form of addenda and issued to all providers. These addenda shall then be considered a part of these specifications. Questions shall be sent via email to thompsonj@buckslib.org.
8. The submission of a bid will be considered as conclusive evidence of complete examination of specifications and samples.
9. A Bid Form - Signature Page is provided in these specifications. This form must be used in submitting a bid, and all pages of the form must be completely filled out, and the whole signed by the bidder. Each bid must be enclosed in a sealed envelope, clearly marked on the outside, "BID ON..." (Levittown Library Window Replacement and Expansion) and delivered to the Bucks County Free Library Administration Office located at 150 S. Pine Street, Doylestown PA, 18901.
10. No bid may be withdrawn later than 1:00 PM on the day of the opening of bids. No modifications of any bid will be allowed after the same is sealed and delivered to the BCFL Chief Financial Officer.
11. BCFL reserves the right to reject any or all bids or parts thereof, as deemed to be in the best interest of BCFL.
12. BCFL is the sole authority to provide this bid package to interested companies or individuals. Bidders who are working from a bid package obtained from any other source may be working from an incomplete set of documents. BCFL assumes no responsibility for a bid's errors, omissions, or misinterpretations resulting from a Bidder's use of an incomplete bid package.

13. Bidders who have received the bid package from a source other than BCFL or the Architect overseeing the project are not an official vendor of record for the bid. These bidders must download the document from www.buckslib.org/bids and attend the mandatory pre-bid meeting to become a vendor of record. This will ensure that the bidder will receive all communication such as Addenda and Clarifications regarding the bid.

SECURITY DEPOSIT – REQUIREMENT ON BIDS EXCEEDING \$19,400

14. A security deposit (certified check or cashier's check – drawn on a bank authorized to do business in the Commonwealth of Pennsylvania, or a properly executed bid bond – if a corporation, signed by a properly authorized representative of the providing company with the corporate seal; if unincorporated, signed by a properly authorized representative of the providing company with a witness signature as well as a signature and seal by a properly authorized officer of the bonding company with proof of the authority to sign on behalf of the bidder and the bonding company accompanying the bond) in the amount of 5% of the total bid is required when bid price is in excess of \$19,400. Said security must be made payable to The Bucks County Free Library and must be deposited with the BCFL Chief Financial Officer at least one-quarter hour before the time set for opening of bids. Cash, certified check or bid bond may be enclosed with bid. The security deposit shall guarantee that the bidder will fully and faithfully comply with the terms of the bid, and will enter into a formal contract and give bond in accordance therewith.
15. Bid bonds will be covered with surety of a company authorized to do business in the Commonwealth of Pennsylvania.
16. Bid Bonds provided as surety will not be returned to the bidder after award unless bidder specifically requests BCFL do so.
17. In the event the successful bidder (when security deposit is required) fails or refuses to execute a formal contract and to give surety as required within (20) twenty days after the contract has been awarded, bidder security deposit may be declared forfeited as liquidated damages, the letter of acceptance of his bid may be voided, and all obligations of BCFL in connection herewith will be canceled.
18. A security deposit in the required amount must be furnished in all bids when the total price exceeds \$19,400. No bid falling in this category will be considered unless the security deposit is furnished in the required amount.

FORM OF CONTRACT

19. The successful bidder will be required to execute a written contract with BCFL within twenty (20) days after acceptance of this bid. It is expressly understood and agreed by the bidders that the contractual obligations of BCFL to the bidders are effective only after the execution of a contract signed by all parties. It is further expressly understood and agreed that the mere issuance of a contract between the Library and a bidder will not oblige BCFL in any fashion unless and until a purchase order is received by the bidder.
20. Any changes to the Agreement contained in the Invitation to Bid are strictly prohibited and shall not be accepted.

DISCLOSURE OF CONTENTS

21. All proposal/bids and other material submitted becomes the property of BCFL and may be returned only at BCFL's option. Information contained in the proposal/bids will not be disclosed during the evaluation process. Under Pennsylvania's "Right to Know Laws" public records are required to be open to

reasonable inspection and reproduction. All proposal/bid information including detailed price and cost information, will be held in confidence during the evaluation process and prior to the time a Notice of Intend to Award is issued. Thereafter all proposals/bids will become public information; subject to inspection and reproduction in accordance with the PA Right to Know Law (Act 3 of 2008), unless otherwise exempt under the Act. Copies of said public records may be made in the Finance Department at a cost to the requesting party of \$0.25 per page.

22. Notwithstanding any terms or conditions contained herein, Consultant/Vendor agrees to comply with all Local, State and Federal laws and regulations. Consultant/Vendor specifically agrees to produce all documents that may be subject to public disclosure pursuant to the Pennsylvania Open Records Law.
23. Trade secrets and other proprietary data contained in a proposal may be held confidential if such data meets the definition of confidential proprietary information and/or trade secrets under section 102 of the Right to Know Law. Material considered confidential by the offer or must be clearly identified and the offer or must include a brief statement that sets out the reason for the confidentiality and how this information meets the criteria of section 102 of the law.

SPECIFICATIONS

24. These specifications are intended to cover the furnishing of material and the performance of all work that may be required or necessary for the complete performance of the contract, and the bidder will be required to do all things necessary to fully complete the work within the purview of these specifications.
25. Equipment and/or material to be furnished shall be new, first-class, and shall meet with the approval of the Chief Operating Officer or designated representative.
26. All equipment and/or material shall conform to the requirements of these specifications, and any equipment and/or material condemned by the Chief Operating Officer as not meeting these specifications shall at once be removed and replaced with acceptable equipment.

INTERPRETATION OF SPECIFICATION

27. Should a bidder discover discrepancies in the specifications, the matter shall be at once brought to the attention of the BCFL Chief Operating Officer, and the discrepancies corrected before proceeding further.
28. All explanations, interpretations and instructions required under these specifications will be given by the Chief Operating Officer or designated Representative based on written request from bidders submitted to the Chief Operating Officer by email at thompsonj@buckslib.org. All questions must be submitted by **12:00pm on August 18th 2020**; the questions will be answered on the BCFL bid page by **5:00Ppm August 25^h 2020**.

EQUIVALENTS

29. The use of manufacturer's brand name and/or model number in this specification is intended only to indicate that said brand name and/or number is the minimum standard desired by the BCFL. Bidders bidding on items other than those indicated, shall state brand name and/or brand model number, upon which their bid is based. It shall be the bidder's responsibility to prove to BCFL that said items are equal to or better than those indicated in the specified Bid Documents, Literature, etc., concerning products or services offered shall accompany the Bid Proposal. Failure to comply with this requirement may be cause for rejection of bid.

ADDITIONS OR DEDUCTIONS

30. BCFL shall have the right, without invalidating the contract, to make additions to or deductions from the

work covered by these specifications, and in case such deductions or additions are made, an equitable adjustment of the addition to or deduction in cost shall be made between BCFL and the bidder, as shown in a written amendment to the contract.

31. Addendums will be posted to the BCFL website. Posting them in this way is an accommodation and BCFL is not liable for any errors in transmission of the documents. Obtaining all bid documents including addendums is the responsibility of the bidder.

EXTRA WORK

32. No extras or additional work will be allowed or paid for unless such extras or additional work are ordered by the BCFL Chief Operating Officer, and the price fixed and agreed upon before such work is performed.

PROTECTION BY BIDDER

33. The bidder agrees to indemnify and save harmless BCFL and its representatives from all suits or actions of every nature and description brought against it or any of them, on account of the use of patented or copyrighted appliances, materials, products or processes, and from all legal expenses and costs of suits regarding the same.
34. The bidder shall obey all Federal, State, County, Borough or Township laws or ordinances in any way pertaining to the work, and shall obtain all permits that may be necessary for its performance if required.
- (a) That in the hiring of employees for the performance of such contract, no bidder, sub-contractor, nor any person acting on behalf of such bidder or sub-contractor shall be reason of race, creed or color discriminate against any citizen of the United States who is qualified and able to perform the work to which the employment relates;
- (b) Nor shall they in any manner discriminate against or intimidate any employee hired for the performance of the work on account of race, creed or color.
35. The bidder shall not assign, transfer, convey, sublet or otherwise dispose of the contract or any part thereof to anyone without the consent of BCFL.

GENERAL CLAUSES

LITERATURE AND SAMPLES

36. The bidder shall be required to furnish their literature and/or samples where feasible and specifications of the items bid to be supplied along with the bid form.

RESERVATIONS

37. BCFL reserves the right to reject any or all bids and also reserves the right to waive any informality in the bids received.
38. In the event there is a discrepancy between the unit price given and the extended total **THE UNIT PRICE SHALL GOVERN**
39. Any bidder who has demonstrated poor performance during either a current or previous agreement with BCFL may be considered as an unqualified source and their bid may be rejected. BCFL reserves the right to exercise this option as is deemed proper and/or necessary.

BID FORM

40. As noted under "Instructions to Bidders"...attached to these specifications is a "Bid Form Signature Page" which must be completely filled out and signed by each bidder.
41. All bids must be sealed, marked, and delivered in accordance with instructions in Paragraphs 9 and 10 of the Instructions to Bidders. Bids will be opened and read by the BCFL Chief Financial Officer at 2:00 PM of the due date. Recommendations will be made to the BCFL Executive Director.

EXEMPTION FROM FEDERAL EXCISE AND PENNSYLVANIA SALES TAXES

42. BCFL is exempt from Federal Excise Taxes and the Pennsylvania Sales Tax. Net prices as shown in the proposal shall exclude said Federal and State tax amounts.

NOTE: This provision shall not apply to construction, repair and/or maintenance contracts where under bidder purchases supplies, material and/or equipment and includes costs thereof in computation of his bid or proposal.

ACCESS TO ACCOUNTING RECORDS

43. The contractor shall check all material, equipment and labor entering into the work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement and the system shall be satisfactory to BCFL. BCFL or its representative shall be afforded access to all the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, Memoranda and similar data relating to this contract, and the Contractor shall preserve all such records for a period of three years, or for such longer as may be required by law, after the final payment.

AGREEMENT OF REFUND RIGHTS

44. The Contractor agrees to assign and transfer to BCFL all its rights to sales and use tax which may be refunded as a result of a claim for refund for materials purchase in connections with this contract. The Contractor further agrees that it will not file a claim for refund for any sales tax which is the subject of this agreement.

CONTRACTS WITH SUBCONTRACTORS

45. The Contractor agrees to include the "Access to Accounting Records" and "Assignments of Refund Rights" paragraphs, in full, in any contracts with subcontractors.

DISCRIMINATION PROHIBITED

46. The Contractor agrees:
- A. That in the hiring of employees for the performance of work under this contract, or any sub-contract hereunder, no such contractor or subcontractor shall, by reason of race, creed or color discriminate against any citizen of the Commonwealth of Pennsylvania who is qualified and available to perform the work to which the employment relates;
 - B. That no contractor, sub-contractor, nor any person on his behalf, shall in any manner discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed or color;
 - C. That there may be deducted from the amount payable to the contractor under this contract, a penalty of five dollars (\$5) for each person for each calendar day during which such person was discriminated against or intimidated, in violation of the provisions of the contract; and

- D. That this contract may be cancelled or terminated by the BCFL and all money due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this portion of the contract.

TRADE PRACTICES ACT

47. Contractor shall comply with all Federal, State and Local laws and regulations including the Trade Practices Act of July 23, 1968 P.L. 686 (71 P.S. Section 773.101 et seq.), the contractor cannot and shall not use or permit to be used in the work any aluminum or steel products made in a foreign country which is listed below as a foreign country which discriminates against aluminum or steel products manufactured in Pennsylvania. The countries of Brazil, South Korea, Spain and Argentina have been found to discriminate against certain products manufactured in Pennsylvania. Therefore, the purchase or use of those countries' products, as listed below, is not permitted.

PROVISION FOR THE USE OF STEEL AND STEEL PRODUCTS MADE IN THE UNITED STATES

48. In accordance with Act No. 3 of the 1978 General Assembly of the Commonwealth of Pennsylvania, approved March 3, 1978, if any steel products are to be used or supplied in the performance of the contract, only steel products produced in the United States as defined therein shall be used or supplied in the performance of the contract or any subcontracts there-under.

STANDARD OF QUALITY

49. The various materials and products specified herein by name or description are given to establish a standard of quality and of cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe it as the absolute minimum standard that is desired and acceptable. A material or product of lesser quality would not be acceptable. Where proprietary names are used, whether or not followed by the words 'or as approved equal', they shall be subject to equals only as approved by the architect and/or engineer.

PROVISIONS CONCERNING THE AMERICANS WITH DISABILITIES ACT

50. During the terms of this contract, the Contractor agrees as follows:

- A. Pursuant to federal regulations promulgated under the authority of The Americans with Disabilities Act, 28 C.F.R. Section 35.101 et seq., the Contractor understands and agrees that no individual with a disability shall, on the basis of disability, be excluded from participation in this contract or from activities provided for under this contract. As a condition of accepting and executing this contract, the Contractor agrees to comply with the "General Prohibitions against Discrimination," 28 C.F.R. Section 35.130, and all other regulations promulgated under Title II of the Americans with Disabilities Act which are applicable to the benefits, services, programs, and activities provided by BCFL through contracts with outside contractors.
- B. The Contractor shall be responsible for and agrees to indemnify and hold harmless BCFL from all losses, damages, expenses, claims, demands, suits and actions brought by any party against BCFL as a result of the Contractor's failure to comply with the provisions of paragraph A above.

WALK-THROUGH

51. BCFL will conduct a walk-through giving each individual or company the opportunity to visit the site of the proposed work in order to acquaint themselves with existing conditions so that they may fully understand any difficulties and restrictions attending the execution of the work under the proposed contract. The failure or omission to receive and examine any documents, forms, addenda or other information, or to

visit the site and acquaint oneself with conditions existing there shall in no way relieve any individual or organization from any obligation with respect to the contract. The submission of a proposal shall be taken as prima facie evidence of compliance with this section.

MANDATORY PRE-BIB MEETING

There will be a 10:00am mandatory Pre-Bid Meeting for this project on August 11th 2020 at the project site: 7311 New Falls Road, Levittown PA 19055

Questions about this project are to be submitted in writing and emailed to BCFL at thompsonj@buckslib.org by 12:00pm on August 18th 2020. Questions will be answered in the form of an addendum posted at <http://www.buckslib.org/bids> by 5:00pm on August 25th 2020.

BACKGROUND

52. This project includes the replacement and expansion of several windows located throughout the Levittown Library.

SCOPE OF WORK

53. All labor, material, means of construction, and equipment necessary to perform the work indicated in the plans and specifications (attached) shall be provided by the successful bidder.

INDEMINIFICATION

54. Damage caused to any surfaces or structures such as carpentry, plumbing, etc.... will be the responsibility of the vendor. BCFL will deduct damage costs from payment. In the event that payment does not cover the cost of damages, BCFL will seek compensation from the contractor.

BASIS OF AWARD

55. The following criteria will be followed to determine the awarded bid.

- Completeness of bid
- Length of time vendor has been in business
- Ability of vendor to meet time requirements
- Quality of product and service offered
- Lowest responsible bid
- Previous preferred experience with BCFL

If information is not included with your bid, and you receive a request from BCFL to provide it, you **MUST** deliver the information to the person making the request within 72 hours (excluding weekends). Any information not received within 72 hours may result in your bid being excluded from the evaluation and award process.

When a bidder responds to this bid he agrees to provide the equipment that is bid while following the terms and conditions of bid package, including the insurance coverage and limits shown on pages 3 and 4.

REQUIREMENTS

56. THE FOLLOWING MUST BE SUBMITTED WITH BIDS:

- A. At least three current references of **window replacement and construction** covering similar services listed in the proposal. Include company name, contact name, and phone number.
- B. Number of employees
- C. Number of years in business
- D. Copies of certifications/permits required to work in **Bristol Township**. Must be familiar with and follow all local municipality ordinances.

Bidder's Checklist:

_____ Completed Bid Form

_____ Completed and signed Bid Form – Signature Page

_____ **Signed Agreement – Any changes to the Agreement contained in the Invitation to Bid are strictly prohibited and shall not be accepted**

Bid Pricing:

These prices are the charges to be billed to the Library. No additional fees, surcharges, costs or expenses will be billed or paid by BCFL.

Please fill in the following information:

- 1. All ordered items will be delivered within _____ days of receiving a purchase order.
- 2. Are the products made in the USA? _____ Yes _____ No

BID FORM - SIGNATURE PAGE

This bid is submitted in accordance with your advertisement inviting bids to be received for the project identified as “**Levittown Library Window Replacement and Expansion**”.

Having carefully examined the "Bid Instructions", "Scope of the Work", etc. hereinafter referred to as "Specifications," together with all addenda, errata, bulletins applying thereto, and being familiar with the various conditions affecting the work, the undersigned, hereby agrees to furnish all material, perform all labor, and do all else necessary to complete the work in strict accordance with the specifications for prices as contained herein for the lump sum.

In the event this bid is accepted, the undersigned is hereby bound to commence and complete all of the work included under this contract in such time and such manner as designated for the various items s/he has contracted to supply or perform.

In submitting this bid, it is understood that the unrestricted right is reserved by BCFL in making the award to reject any and all bids or parts thereof, or to waive any informalities or technicalities in said bids.

The undersigned hereby certifies that this bid is genuine, and not a sham or collusive, or made in the interest or in behalf of any person, firm or corporation not herein named; that the undersigned has not directly or indirectly induced or solicited any bidder to refrain from bidding, and that the undersigned has it, in any manner, sought by collusion to secure for himself and ad- vantage over any other bidder.

THIS BID MUST BE SIGNED FOR CONSIDERATION.

PRINTNAME _____

SIGNATURE _____

TITLE _____

Official correspondence will be address to:

NAME OF BIDDER _____

NAME OF LEGAL ENTITY _____

CONTACT _____ TITLE _____

ADDRESS _____

TELEPHONE _____ FAX _____

E-MAIL _____

Bidder will state below whether the bid is by an individual, partnership, or corporation.

Bidder MUST provide Social Security No. if bidding as an individual _____ or Federal Employer Identification Number if other than an individual _____. NOTE: The Federal Employer Identification Number (EIN) provided must match the name given on line 1 of your W-9 Form.

Bidder will state below the name of the Bonding Company to be used in case of award, and name and address of local agent thereof, when required.

BONDING COMPANY _____

NAME OF AGENT _____

ADDRESS _____

Bid responses that do not include pages 2 and 12 thru 20 may not be considered for evaluation and award.

Submitted by _____
(Bidder's Name)

Date _____

BASE BID

Division 01: General Requirements \$

Division 02: Existing Conditions \$

General Construction Scope of Work \$

Unit price per each “W1” window unit \$

Unit price per each “W2” window unit \$

Unit price per each “W3” window unit \$

(unit prices shall include labor costs)

Add Alternate #1 \$

Miscellaneous: Bonds \$

Miscellaneous: Permits \$

TOTAL BASE BID COST: \$

I have received Addendum No. dated
 Addendum No. dated **Bid**

must be signed for Consideration

 (Signature)

 (Title)

FORM OF AGREEMENT

THIS AGREEMENT, made this _____, 2020 by and between _____ (hereinafter referred to as “SUPPLIER”) and Bucks County Free Library, Doylestown Pennsylvania (herein- after referred to as “BCFL”).

WITNESSETH

1. SUPPLIER shall supply and deliver to BCFL – in accordance with the scope of services set forth in the Notice to Bidders, specifications related thereto, SUPPLIER’S executed bid and in accordance with the legal advertisement for sealed bids published in the Intelligencer and Courier Times on July 31st and August 4th 2020 all of which are incorporated herein by reference as though fully set forth at length.

The contract sum shall be UNIT COST or UNIT COST not to exceed (\$_____) as indicated in the SUPPLIER’S executed bid. Said prices shall be the total compensation paid by the BCFL to the SUPPLIER including all related incidental work thereto.

In accordance with the various laws affecting the contract and the legal advertisement for sealed bids made by the BCFL, the SUPPLIER agrees to provide all bonds in the amounts and types as are set forth in the above mentioned specifications and notices, all of which are made a part hereof. All bonds related herein shall be solely for the protection of the BCFL.

SUPPLIER further agrees to indemnify and save harmless the BCFL from any and all actions, claims and demands whatsoever that may result from SUPPLIER’S use of any facilities owned by the County and does further agree to repair any damage to the County- owned property caused by SUPPLIER’S negligence or willful actions and the SUPPLIER shall further supply the necessary insurance’s as set forth in the subject specifications:

- A. Commercial General Liability - (policy to include premises and operations, products/completed operations and blanket contractual liability - the contractual section of the coverage must cover this agreement)

General Aggregate Limit	\$2,000,000.
Products and Completed Operations	
Aggregate Limit	\$2,000,000.
Each Occurrence Limit	\$1,000,000.

- B. Automobile Liability - to include owned, non-owned and hired vehicles:

Combined Single Limit	\$ 500,000.
or Bodily Injury	\$ 250,000. each person
Bodily Injury	\$ 500,000. each accident
And Property Damage	\$ 100,000.

- C. Workers Compensation Statutory and Employer's Liability

Bodily Injury by Accident	\$ 100,000. each accident
Bodily Injury by Disease	\$ 100,000. each employee
Bodily Injury by Disease	\$ 500,000. policy limit

Additional Insured – must read: The County of Bucks shall be included as additional insured with respect to the work performed for the Levittown Library Window Replacements and Expansion .

Cancellation Clause - must read: Should any of the above described policies be canceled before the expiration date thereof, the issuing company **will mail** 30 days prior **written** notice to the certificate holder.

Certificate Holder - "Bucks County Free Library", Attn: Administration offices of the Bucks County Free Library, 150 South Pine Street Doylestown PA 18901

2. The parties hereto do hereby agree that they shall comply with all conditions and provisions of the specifications whenever such specifications are not inconsistent with the terms and provisions of this Agreement, and do hereby agree to execute all documents, agreements, and other papers related hereto and in form satisfactory to BCFL.

HOLD HARMLESS CLAUSE In the event that any of the insurance hereinbefore provided shall not, by reason of any act, omission or negligence of the SUPPLIER be procured or kept in full force and effect, the SUPPLIER shall indemnify and hold harmless the BCFL against losses, claims and demands to the same extent as the BCFL would have been indemnified by each insurance if it had been in full force and effect. The SUPPLIER shall also indemnify and hold harmless the BCFL against any and all losses, claims and demands to the extent that they are not recoverable under each insurance policy solely because of a deductible franchise or average provision therein and to the extent that the proceeds of insurance collections from underwriters are reduced by any customary brokers' commissions.

SUITS AND CLAIMS The SUPPLIER agrees to indemnify, defend, and save harmless the BCFL, and all the officers and subordinates, from all suits and actions of any name, nature, and description brought against them or any of them for or on account of any damages or loss sustained by any party by reason of the conduct or omissions of the SUPPLIER or his agents, servants, or employees in the performance of this Agreement or subsequent to the completion of the work under this Agreement whether such injury or damages be due to negligence, willful misconduct or the inherent nature of the work. It is not the intention of this Section or anything herein provided to confer in a third party beneficiary a right of action upon any person whatsoever and nothing hereinbefore or hereinafter set forth shall be construed so as to confer upon any person other than BCFL a right of action either under this contract or in any manner whatsoever.

LIQUIDATED DAMAGES The time in which each Contract and the work there under is to be completed by the individual SUPPLIER or the BCFL shall be as stated in the Proposal or elsewhere in the Contract Documents.

Should the successful SUPPLIER fail to complete the work within the time specified in his Proposal, the SUPPLIER agrees that the BCFL may deduct and retain out of the monies that may be due, or may become due to him under the Contract, an amount equivalent to that sum, if any, stated on the Proposal, for each day, including Sundays and Legal Holidays that the work in part or as a whole remains incomplete beyond the time stipulated in the Contract Documents, which sum shall not be considered as a penalty, but as a sum mutually agreed upon as the ascertained damages suffered by the BCFL because of the delay. This deduction shall be made on the monthly estimates after the expiration of the Contract time. Permitting the SUPPLIER to continue and finish the work, or any part of it, after the time fixed for its completion, in part or as a whole, shall in no wise operate as a waiver on the part of BCFL of his rights under the Contract. However, the BCFL, upon request by the SUPPLIER and recommendation of the ENGINEER, may at its discretion waive the penalty on account of delay due to causes over which the SUPPLIER has no control.

APPLICABLE LAW This Agreement shall be governed by and interpreted and enforced in accordance with the laws of the Commonwealth of Pennsylvania (without regard to any conflict of law's provisions) and the decisions of the Pennsylvania courts. The SUPPLIER consents to the venue and jurisdiction of the Court of Common Pleas of Bucks County in Pennsylvania, waiving any claim or defense that such forum is not convenient or proper. The SUPPLIER agrees that any such court shall have in personam jurisdiction over it, and consents to service of process in any manner authorized by Pennsylvania law.

INTEGRATION The Agreement, including all referenced documents and attachments, constitutes the entire agreement between the parties. No agent, representative, employee or officer of either the Library or SUPPLIER has authority to make, or had made, any statement, agreement or representation, oral or written, in connection with the Agreement, which in any way can be deemed to modify, add to or detract from, or otherwise change or alter its terms and conditions unless otherwise explicitly stated within the agreement. No negotiations between the parties, nor any custom or usage, shall be permitted to modify or contradict any of the terms and conditions of the Agreement. No modifications, alterations, changes, or waiver to the Agreement or any of its terms shall be valid or binding unless accomplished by a written amendment signed by both parties. All such amendments will be made pursuant to the terms of the Agreement or using the appropriate BCFL form.

CONTROLLING TERMS AND CONDITIONS The terms and conditions of this Agreement shall be the exclusive terms of agreement between the SUPPLIER and BCFL. Other terms and conditions or additional terms and conditions included or referenced in the SUPPLIER's invoices, business forms, or other documentation shall not become part of the parties' agreement and shall be disregarded by the parties, unenforceable by the SUPPLIER and not binding on BCFL.

RIGHT TO KNOW LAW

- A. The Pennsylvania Right-to-Know Law, 65 P.S. §§ 67.101-3104, ("RTKL") applies to this Agreement.
- B. If BCFL needs the SUPPLIER's assistance in any matter arising out of the RTKL related to this Agreement, it shall notify the SUPPLIER using the legal contact information provided in this Agreement. The SUPPLIER, at any time, may designate a different contact for such purpose upon reasonable prior written notice to BCFL.
- C. Upon written notification from BCFL that it requires the SUPPLIER's assistance in responding to a request under the RTKL for information related to this Agreement that may be in the SUPPLIER's possession, constituting, or alleged to constitute, a public record in accordance with the RTKL ("Requested Information"), the SUPPLIER shall:
 - Provide BCFL, within ten calendar days after receipt or written notification, access to, and copies of, any document or information in the SUPPLIER's possession arising out of this Agreement that BCFL reasonably believes is Requested Information and may be a public record under the RTKL; and
 - Provide such other assistance as BCFL may reasonably request, in order to comply with the RTKL with respect to this Agreement.
- D. If the SUPPLIER considers the Requested Information to include a request for a Trade Secret or Confidential Proprietary Information, as those terms are defined by the RTKL, or other information that the Supplier considers exempt from production under the RTKL, the SUPPLIER must notify BCFL and provide, within seven calendar days of receiving the written notification, a redacted copy of such document along with a written statement signed by a representative of the supplier explaining why the requested material is exempt from public disclosure under the RTKL.
- E. BCFL will rely upon the written statement from the SUPPLIER in denying a RTKL request for the Requested Information unless BCFL determines that the Requested Information is clearly not protected from disclosure under the RTKL. Should BCFL determine that the Requested Information is clearly not exempt from disclosure, the SUPPLIER shall provide the Requested Information within five business days of receipt of written notification of BCFL's determination.
- F. If the SUPPLIER fails to provide the Requested Information within the time period required by these provisions, the SUPPLIER shall indemnify defend and hold BCFL harmless for any damages, penalties, costs, detriment or harm that BCFL may incur as a result of the SUPPLIER's failure, including any statutory damages assessed against BCFL.
- G. The SUPPLIER shall have the obligation to request participation and defend the decision issued by the Bucks County Office of Open Records in any appeal to the Pennsylvania Office of Open Records and subsequent appeal regarding documents of SUPPLIER.
- H. The SUPPLIER's duties relating to the RTKL are continuing duties that survive the expiration of this Agreement and shall continue as long as the SUPPLIER has Requested Information in its possession.

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

IN WITNESS WHEREOF, the parties hereto intending to be legally bound execute this Agreement the day and year first above written.

BY:

Signature

Name - Title

SS # or FEDERAL I.D.

BCFL

BY:

Martina Kominiarek – CEO

BCFL Board of Director

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project Name:	Levittown Library Window Replacement And Expansion
Awarding Agency:	Bucks County Free Library
Contract Award Date:	5/18/2020
Serial Number:	20-02145
Project Classification:	Building
Determination Date:	3/10/2020
Assigned Field Office:	Philadelphia
Field Office Phone Number:	(215)560-1858
Toll Free Phone Number:	
Project County:	Bucks County

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	5/29/2017		\$47.30	\$34.85	\$82.15
Asbestos & Insulation Workers	5/1/2018		\$49.30	\$35.85	\$85.15
Asbestos & Insulation Workers	5/1/2019		\$51.20	\$36.95	\$88.15
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2017		\$28.52	\$18.22	\$46.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2018		\$29.52	\$18.22	\$47.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	1/1/2019		\$29.26	\$18.48	\$47.74
Boilermakers	1/1/2017		\$44.26	\$33.36	\$77.62
Boilermakers	1/1/2018		\$46.26	\$33.36	\$79.62
Boilermakers	3/1/2018		\$45.89	\$33.73	\$79.62
Boilermakers	1/1/2019		\$45.51	\$34.11	\$79.62
Boilermakers	8/1/2019		\$47.21	\$34.11	\$81.32
Bricklayer	5/1/2017		\$40.98	\$26.78	\$67.76
Bricklayer	5/1/2018		\$43.73	\$26.78	\$70.51
Bricklayer	5/1/2019		\$46.48	\$26.78	\$73.26
Carpenter - Chief of Party (Surveying & Layout)	5/1/2017		\$45.25	\$27.59	\$72.84
Carpenter - Chief of Party (Surveying & Layout)	5/1/2018	4/30/2019	\$45.83	\$27.59	\$73.42
Carpenter - Chief of Party (Surveying & Layout)	5/1/2019	4/30/2020	\$46.54	\$27.59	\$74.13
Carpenter - Chief of Party (Surveying & Layout)	5/1/2020		\$47.73	\$27.59	\$75.32
Carpenter - Instrument Person (Surveying & Layout)	5/1/2017		\$39.35	\$27.59	\$66.94
Carpenter - Instrument Person (Surveying & Layout)	5/1/2018	4/30/2019	\$39.85	\$27.59	\$67.44
Carpenter - Instrument Person (Surveying & Layout)	5/1/2019	4/30/2020	\$40.47	\$27.59	\$68.06
Carpenter - Instrument Person (Surveying & Layout)	5/1/2020		\$41.50	\$27.59	\$69.09
Carpenter - Rodman (Surveying & Layout)	5/1/2017		\$19.68	\$19.64	\$39.32
Carpenter - Rodman (Surveying & Layout)	5/1/2018	4/30/2019	\$19.93	\$19.49	\$39.42
Carpenter - Rodman (Surveying & Layout)	5/1/2019	4/30/2020	\$20.24	\$19.69	\$39.93
Carpenter - Rodman (Surveying & Layout)	5/1/2020		\$20.75	\$19.49	\$40.24
Carpenters	5/1/2017		\$39.35	\$27.59	\$66.94
Carpenters	5/1/2018	4/30/2019	\$39.85	\$27.59	\$67.44
Carpenters	5/1/2019	4/30/2020	\$40.87	\$27.59	\$68.46
Carpenters	5/1/2020		\$41.90	\$27.59	\$69.49
Cement Masons	5/1/2017		\$36.45	\$31.76	\$68.21
Cement Masons	5/1/2018		\$37.50	\$32.26	\$69.76
Cement Masons	5/1/2019		\$38.50	\$32.81	\$71.31
DockBuilder/Pile Drivers (Building, Heavy & Highway)	5/1/2018		\$43.45	\$34.47	\$77.92
Dockbuilder/Piledriver (Building, Heavy, Highway)	11/1/2017		\$43.45	\$33.22	\$76.67
Dockbuilder/Piledriver (Building, Heavy, Highway)	5/1/2018		\$44.70	\$33.22	\$77.92
Drapery Installers	5/1/2009		\$31.09	\$21.34	\$52.43
Drywall Finisher	5/1/2017		\$37.11	\$26.75	\$63.86
Drywall Finisher	5/1/2018		\$39.27	\$27.49	\$66.76
Drywall Finisher	5/1/2019		\$37.75	\$28.11	\$65.86
Electricians	5/1/2016		\$49.18	\$31.57	\$80.75
Electricians	10/1/2017	9/2/2018	\$49.79	\$32.08	\$81.87

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Electricians	9/3/2018		\$50.14	\$31.73	\$81.87
Electricians	1/1/2019	3/31/2019	\$50.20	\$31.67	\$81.87
Electricians	4/1/2019	7/5/2020	\$51.27	\$32.59	\$83.86
Electricians	10/4/2021		\$53.73	\$34.13	\$87.86
Elevator Constructor	1/1/2016		\$52.79	\$30.29	\$83.08
Elevator Constructor	1/1/2018		\$55.76	\$33.05	\$88.81
Elevator Constructor	1/1/2020		\$59.44	\$35.25	\$94.69
Floor Coverer	5/1/2019		\$44.37	\$28.44	\$72.81
Floor Coverer	5/1/2020		\$46.01	\$28.44	\$74.45
Floor Layer	5/1/2017		\$42.51	\$27.91	\$70.42
Floor Layer	5/1/2018		\$43.11	\$28.09	\$71.20
Glazier	5/1/2017		\$41.30	\$30.80	\$72.10
Glazier	5/1/2018		\$43.32	\$32.33	\$75.65
Glazier	5/1/2019		\$43.87	\$33.38	\$77.25
Interior Finish	5/1/2019		\$30.20	\$25.80	\$56.00
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2017		\$47.30	\$32.91	\$80.21
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2018		\$51.46	\$30.60	\$82.06
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2019		\$49.30	\$34.41	\$83.71
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	1/1/2020		\$49.80	\$34.41	\$84.21
Iron Workers (Riggers)	7/1/2017		\$39.83	\$27.92	\$67.75
Ironworker (Rodman)	1/1/2017		\$46.20	\$31.26	\$77.46
Ironworker (Rodman)	7/1/2017		\$42.56	\$29.30	\$71.86
Ironworker (Rodman)	7/1/2018		\$42.88	\$30.60	\$73.48
Ironworker (Rodman)	7/1/2019		\$43.88	\$30.85	\$74.73
Laborers (Class 01 - General)	5/1/2020		\$32.05	\$25.25	\$57.30
Laborers (Class 01 - See notes)	5/1/2017		\$28.65	\$24.95	\$53.60
Laborers (Class 01 - See notes)	5/1/2019		\$30.20	\$25.80	\$56.00
Laborers (Class 02 - See notes)	5/1/2017		\$30.85	\$25.65	\$56.50
Laborers (Class 02 - See notes)	5/1/2019		\$33.15	\$26.50	\$59.65
Laborers (Class 02 - see notes)	5/1/2020		\$35.15	\$26.15	\$61.30
Laborers (Class 03 - See notes)	5/1/2017		\$28.92	\$25.18	\$54.10
Laborers (Class 03 - See notes)	5/1/2019		\$30.52	\$25.98	\$56.50
Laborers (Class 03 - See notes)	5/1/2020		\$32.47	\$25.43	\$57.90
Laborers (Class 04 - See notes)	5/1/2017		\$28.95	\$24.95	\$53.90
Laborers (Class 04 - See notes)	5/1/2019		\$30.52	\$25.98	\$56.50
Laborers (Class 04 - See notes)	5/1/2020		\$32.47	\$25.43	\$57.90
Laborers (Class 05 - See notes)	5/1/2017		\$28.65	\$24.95	\$53.60
Laborers (Class 05 - See notes)	5/1/2019		\$30.20	\$25.80	\$56.00
Laborers (Class 05 - See notes)	5/1/2020		\$32.05	\$25.25	\$57.30
Landscape Laborer	5/1/2017		\$22.71	\$23.08	\$45.79
Landscape Laborer	5/1/2019		\$24.64	\$23.68	\$48.32
Landscape Laborer	5/1/2020		\$26.55	\$23.13	\$49.68

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Marble Finisher	5/1/2017		\$35.55	\$24.17	\$59.72
Marble Finisher	5/1/2018		\$37.55	\$24.17	\$61.72
Marble Finisher	5/1/2019		\$39.75	\$24.17	\$63.92
Marble Mason	5/1/2017		\$40.36	\$26.99	\$67.35
Marble Mason	5/1/2018		\$43.11	\$26.99	\$70.10
Marble Mason	5/1/2019		\$45.86	\$26.99	\$72.85
Mason Tender, Cement	5/1/2019		\$30.52	\$25.98	\$56.50
Millwright	7/1/2017		\$41.35	\$32.24	\$73.59
Millwright	5/1/2018		\$43.33	\$32.96	\$76.29
Millwright	5/1/2019		\$45.50	\$33.29	\$78.79
Operators (Building, Class 01 - See Notes)	5/1/2017		\$44.87	\$28.14	\$73.01
Operators (Building, Class 01 - See Notes)	5/1/2018		\$46.41	\$28.60	\$75.01
Operators (Building, Class 01 - See Notes)	5/1/2019		\$46.41	\$30.60	\$77.01
Operators (Building, Class 01 - See Notes)	5/1/2020		\$47.96	\$31.05	\$79.01
Operators (Building, Class 01 - See Notes)	5/1/2021		\$49.50	\$31.51	\$81.01
Operators (Building, Class 01A - See Notes)	5/1/2017		\$47.86	\$29.03	\$76.89
Operators (Building, Class 01A - See Notes)	5/1/2018		\$49.41	\$29.49	\$78.90
Operators (Building, Class 01A - See Notes)	5/1/2019		\$49.41	\$31.49	\$80.90
Operators (Building, Class 01A - See Notes)	5/1/2020		\$50.96	\$31.94	\$82.90
Operators (Building, Class 01A - See Notes)	5/1/2021		\$52.51	\$32.39	\$84.90
Operators (Building, Class 02 - See Notes)	5/1/2017		\$44.62	\$28.07	\$72.69
Operators (Building, Class 02 - See Notes)	5/1/2018		\$46.16	\$28.53	\$74.69
Operators (Building, Class 02 - See Notes)	5/1/2019		\$46.16	\$30.53	\$76.69
Operators (Building, Class 02 - See Notes)	5/1/2020		\$47.71	\$30.98	\$78.69
Operators (Building, Class 02 - See Notes)	5/1/2021		\$49.25	\$31.44	\$80.69
Operators (Building, Class 02A - See Notes)	5/1/2017		\$47.61	\$28.97	\$76.58
Operators (Building, Class 02A - See Notes)	5/1/2018		\$49.16	\$29.42	\$78.58
Operators (Building, Class 02A - See Notes)	5/1/2019		\$49.17	\$31.41	\$80.58
Operators (Building, Class 02A - See Notes)	5/1/2020		\$50.71	\$31.87	\$82.58
Operators (Building, Class 02A - See Notes)	5/1/2021		\$52.26	\$32.32	\$84.58
Operators (Building, Class 03 - See Notes)	5/1/2017		\$40.53	\$26.87	\$67.40
Operators (Building, Class 03 - See Notes)	5/1/2018		\$42.07	\$27.33	\$69.40
Operators (Building, Class 03 - See Notes)	5/1/2019		\$42.08	\$29.32	\$71.40
Operators (Building, Class 03 - See Notes)	5/1/2020		\$43.62	\$29.78	\$73.40
Operators (Building, Class 03 - See Notes)	5/1/2021		\$45.16	\$30.24	\$75.40
Operators (Building, Class 04 - See Notes)	5/1/2017		\$40.24	\$26.78	\$67.02
Operators (Building, Class 04 - See Notes)	5/1/2018		\$41.78	\$27.22	\$69.00
Operators (Building, Class 04 - See Notes)	5/1/2019		\$41.78	\$29.23	\$71.01
Operators (Building, Class 04 - See Notes)	5/1/2020		\$43.32	\$29.69	\$73.01
Operators (Building, Class 04 - See Notes)	5/1/2021		\$44.87	\$30.14	\$75.01
Operators (Building, Class 05 - See Notes)	5/1/2017		\$38.51	\$26.27	\$64.78
Operators (Building, Class 05 - See Notes)	5/1/2018		\$40.05	\$26.73	\$66.78
Operators (Building, Class 05 - See Notes)	5/1/2019		\$40.06	\$28.72	\$68.78
Operators (Building, Class 05 - See Notes)	5/1/2020		\$41.60	\$29.18	\$70.78

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Building, Class 05 - See Notes)	5/1/2021		\$43.14	\$29.64	\$72.78
Operators (Building, Class 06 - See Notes)	5/1/2017		\$37.52	\$25.98	\$63.50
Operators (Building, Class 06 - See Notes)	5/1/2018		\$39.07	\$26.43	\$65.50
Operators (Building, Class 06 - See Notes)	5/1/2019		\$39.07	\$28.43	\$67.50
Operators (Building, Class 06 - See Notes)	5/1/2020		\$40.61	\$28.89	\$69.50
Operators (Building, Class 06 - See Notes)	5/1/2021		\$42.16	\$29.34	\$71.50
Operators (Building, Class 07A- See Notes)	5/1/2017		\$54.14	\$32.47	\$86.61
Operators (Building, Class 07A- See Notes)	5/1/2018		\$55.99	\$33.02	\$89.01
Operators (Building, Class 07A- See Notes)	5/1/2019		\$56.30	\$35.11	\$91.41
Operators (Building, Class 07A- See Notes)	5/1/2020		\$58.16	\$35.65	\$93.81
Operators (Building, Class 07A- See Notes)	5/1/2021		\$60.00	\$36.21	\$96.21
Operators (Building, Class 07B- See Notes)	5/1/2017		\$53.84	\$32.40	\$86.24
Operators (Building, Class 07B- See Notes)	5/1/2018		\$55.70	\$32.92	\$88.62
Operators (Building, Class 07B- See Notes)	5/1/2019		\$56.00	\$35.03	\$91.03
Operators (Building, Class 07B- See Notes)	5/1/2020		\$57.86	\$35.57	\$93.43
Operators (Building, Class 07B- See Notes)	5/1/2021		\$59.72	\$36.11	\$95.83
Painters Class 1 (see notes)	5/1/2017		\$37.82	\$26.46	\$64.28
Painters Class 1 (see notes)	5/1/2018		\$38.64	\$27.64	\$66.28
Painters Class 1 (see notes)	5/1/2019		\$39.04	\$28.99	\$68.03
Painters Class 1 (see notes)	2/1/2020		\$46.16	\$28.75	\$74.91
Painters Class 2 (see notes)	5/1/2017		\$53.67	\$26.09	\$79.76
Painters Class 2 (see notes)	2/1/2018		\$54.14	\$27.27	\$81.41
Painters Class 2 (see notes)	2/1/2019		\$55.52	\$28.39	\$83.91
Painters Class 2 (see notes)	2/1/2020		\$57.12	\$28.79	\$85.91
Plasterers	5/1/2017		\$37.42	\$28.83	\$66.25
Plasterers	5/1/2018		\$37.42	\$30.04	\$67.46
Plasterers	5/1/2019		\$37.72	\$30.74	\$68.46
plumber	5/1/2018		\$53.45	\$33.54	\$86.99
plumber	5/1/2019		\$55.45	\$34.54	\$89.99
Plumbers	5/1/2017		\$51.42	\$32.57	\$83.99
Pointers, Caulkers, Cleaners	5/1/2017		\$42.26	\$25.69	\$67.95
Pointers, Caulkers, Cleaners	5/1/2018		\$45.01	\$25.69	\$70.70
Pointers, Caulkers, Cleaners	5/1/2019		\$47.76	\$25.69	\$73.45
Roofers (Composition)	5/1/2017		\$36.15	\$30.22	\$66.37
Roofers (Composition)	5/1/2018		\$37.15	\$31.27	\$68.42
Roofers (Composition)	5/1/2019		\$38.35	\$31.80	\$70.15
Roofers (Shingle)	5/1/2016		\$25.70	\$19.17	\$44.87
Roofers (Shingle)	5/1/2019		\$28.50	\$20.87	\$49.37
Roofers (Slate & Tile)	5/1/2016		\$28.70	\$19.17	\$47.87
Roofers (Slate & Tile)	5/1/2018		\$30.50	\$20.37	\$50.87
Roofers (Slate & Tile)	5/1/2019		\$31.50	\$20.87	\$52.37
Sheet Metal Workers	5/1/2017		\$46.42	\$39.51	\$85.93
Sheet Metal Workers	5/1/2018		\$47.58	\$41.60	\$89.18
Sheet Metal Workers	5/1/2019		\$49.79	\$42.89	\$92.68

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Sprinklerfitters	4/1/2017		\$37.40	\$21.74	\$59.14
Sprinklerfitters	4/1/2018		\$38.80	\$22.74	\$61.54
Sprinklerfitters	5/1/2019		\$57.20	\$28.32	\$85.52
Steamfitters	5/1/2017		\$54.64	\$32.53	\$87.17
Steamfitters	5/1/2018		\$56.37	\$34.39	\$90.76
Steamfitters	5/1/2019		\$58.17	\$35.99	\$94.16
Stone Masons	5/1/2017		\$40.36	\$26.99	\$67.35
Stone Masons	5/1/2018		\$43.11	\$26.99	\$70.10
Stone Masons	5/1/2019		\$45.86	\$26.99	\$72.85
Terrazzo Finisher	5/1/2017		\$39.06	\$22.73	\$61.79
Terrazzo Finisher	5/1/2018		\$41.31	\$22.73	\$64.04
Terrazzo Finisher	5/1/2019		\$43.61	\$22.73	\$66.34
Terrazzo Grinder	5/1/2017		\$39.33	\$22.73	\$62.06
Terrazzo Grinder	5/1/2018		\$41.58	\$22.73	\$64.31
Terrazzo Grinder	5/1/2019		\$43.98	\$22.73	\$66.71
Terrazzo Mechanics	5/1/2017		\$43.71	\$24.81	\$68.52
Terrazzo Mechanics	5/1/2018		\$46.46	\$24.81	\$71.27
Terrazzo Mechanics	5/1/2019		\$49.21	\$24.81	\$74.02
Tile Finisher	5/1/2017		\$35.55	\$24.17	\$59.72
Tile Finisher	5/1/2018		\$37.55	\$24.17	\$61.72
Tile Finisher	5/1/2019		\$39.75	\$24.17	\$63.92
Tile Setter	5/1/2017		\$43.71	\$24.81	\$68.52
Tile Setter	5/1/2018		\$46.46	\$24.81	\$71.27
Tile Setter	5/1/2019		\$49.21	\$24.81	\$74.02
Truckdriver class 1(see notes)	5/1/2017		\$30.46	\$17.96	\$48.42
Truckdriver class 1(see notes)	5/1/2018		\$31.93	\$17.96	\$49.89
Truckdriver class 1(see notes)	5/1/2019		\$32.21	\$19.19	\$51.40
Truckdriver class 1(see notes)	5/1/2020		\$34.93	\$17.96	\$52.89
Truckdriver class 1(see notes)	5/1/2021		\$36.48	\$17.96	\$54.44
Truckdriver class 2 (see notes)	5/1/2017		\$30.56	\$17.96	\$48.52
Truckdriver class 2 (see notes)	5/1/2018		\$32.03	\$17.96	\$49.99
Truckdriver class 2 (see notes)	5/1/2019		\$32.31	\$19.19	\$51.50
Truckdriver class 2 (see notes)	5/1/2020		\$35.03	\$17.96	\$52.99
Truckdriver class 2 (see notes)	5/1/2021		\$36.58	\$17.96	\$54.54
Truckdriver class 3 (see notes)	5/1/2017		\$30.81	\$17.96	\$48.77
Truckdriver class 3 (see notes)	5/1/2018		\$32.28	\$17.96	\$50.24
Truckdriver class 3 (see notes)	5/1/2019		\$32.56	\$19.19	\$51.75
Truckdriver class 3 (see notes)	5/1/2020		\$35.28	\$17.96	\$53.24
Truckdriver class 3 (see notes)	5/1/2021		\$36.83	\$17.96	\$54.79
Window Film / Tint Installer	6/1/2019		\$24.52	\$12.08	\$36.60

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2017		\$51.42	\$27.39	\$78.81
Carpenter - Chief of Party (Surveying & Layout)	5/1/2018	4/30/2019	\$53.20	\$27.69	\$80.89
Carpenter - Chief of Party (Surveying & Layout)	5/1/2019	4/30/2020	\$55.38	\$27.69	\$83.07
Carpenter - Chief of Party (Surveying & Layout)	5/1/2020	4/30/2021	\$57.63	\$27.69	\$85.32
Carpenter - Chief of Party (Surveying & Layout)	5/1/2021		\$59.93	\$27.69	\$87.62
Carpenter - Instrument Person (Surveying & Layout)	5/1/2017		\$44.71	\$27.39	\$72.10
Carpenter - Instrument Person (Surveying & Layout)	5/1/2018	4/30/2019	\$46.26	\$27.69	\$73.95
Carpenter - Instrument Person (Surveying & Layout)	5/1/2019	4/30/2020	\$48.16	\$27.69	\$75.85
Carpenter - Instrument Person (Surveying & Layout)	5/1/2020	4/30/2021	\$50.11	\$27.69	\$77.80
Carpenter - Instrument Person (Surveying & Layout)	5/1/2021		\$52.11	\$27.69	\$79.80
Carpenter - Rodman (Surveying & Layout)	5/1/2017		\$35.77	\$21.19	\$56.96
Carpenter - Rodman (Surveying & Layout)	5/1/2018	4/30/2019	\$37.01	\$21.34	\$58.35
Carpenter - Rodman (Surveying & Layout)	5/1/2019	4/30/2020	\$38.53	\$21.34	\$59.87
Carpenter - Rodman (Surveying & Layout)	5/1/2020	4/30/2021	\$40.09	\$21.34	\$61.43
Carpenter - Rodman (Surveying & Layout)	5/1/2021		\$41.69	\$21.34	\$63.03
Carpenter	5/1/2018	4/30/2019	\$46.26	\$27.69	\$73.95
Carpenter	5/1/2019	4/30/2020	\$47.81	\$28.04	\$75.85
Carpenter	5/1/2020	4/30/2021	\$49.76	\$28.04	\$77.80
Carpenter	5/1/2021		\$51.76	\$28.04	\$79.80
Carpenters	5/1/2017		\$44.71	\$27.39	\$72.10
Carpenters	5/1/2018		\$46.56	\$27.39	\$73.95
Carpenters	5/1/2019		\$48.46	\$27.39	\$75.85
Carpenters	5/1/2020		\$50.41	\$27.39	\$77.80
Carpenters	5/1/2021		\$52.41	\$27.39	\$79.80
Cement Masons	5/1/2017		\$34.45	\$31.51	\$65.96
Cement Masons	5/1/2018		\$35.65	\$32.01	\$67.66
Cement Masons	5/1/2019		\$37.90	\$31.51	\$69.41
Cement Masons	5/1/2020		\$39.70	\$31.51	\$71.21
Cement Masons	5/1/2021		\$41.55	\$31.51	\$73.06
Electric Lineman	5/29/2017		\$52.60	\$26.37	\$78.97
Electric Lineman	5/28/2018		\$53.64	\$27.45	\$81.09
Electric Lineman	5/27/2019		\$54.66	\$28.56	\$83.22
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2016		\$46.20	\$31.26	\$77.46
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	1/1/2017		\$46.20	\$31.26	\$77.46
Iron Workers	7/1/2017		\$47.30	\$32.91	\$80.21
Iron Workers	7/1/2019		\$49.30	\$34.41	\$83.71
Iron Workers	1/1/2020		\$49.80	\$34.41	\$84.21
Laborers (Class 01 - See notes)	5/1/2017		\$29.75	\$25.65	\$55.40
Laborers (Class 01 - See notes)	5/1/2018		\$31.25	\$25.65	\$56.90
Laborers (Class 01 - See notes)	5/1/2019		\$31.95	\$26.50	\$58.45
Laborers (Class 01 - See notes)	5/1/2020		\$33.95	\$26.15	\$60.10
Laborers (Class 01 - See notes)	5/1/2021		\$36.20	\$25.65	\$61.85
Laborers (Class 02 - See notes)	5/1/2017		\$29.95	\$25.65	\$55.60

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 02 - See notes)	5/1/2018		\$31.45	\$25.65	\$57.10
Laborers (Class 02 - See notes)	5/1/2019		\$32.15	\$26.50	\$58.65
Laborers (Class 02 - See notes)	5/1/2020		\$34.15	\$26.15	\$60.30
Laborers (Class 02 - See notes)	5/1/2021		\$36.40	\$25.65	\$62.05
Laborers (Class 03 - See notes)	5/1/2017		\$29.95	\$25.65	\$55.60
Laborers (Class 03 - See notes)	5/1/2018		\$31.45	\$25.65	\$57.10
Laborers (Class 03 - See notes)	5/1/2019		\$32.15	\$26.50	\$58.65
Laborers (Class 03 - See notes)	5/1/2020		\$34.15	\$26.15	\$60.30
Laborers (Class 03 - See notes)	5/1/2021		\$36.40	\$25.65	\$62.05
Laborers (Class 04 - See notes)	5/1/2017		\$24.55	\$25.65	\$50.20
Laborers (Class 04 - See notes)	5/1/2018		\$26.05	\$25.65	\$51.70
Laborers (Class 04 - See notes)	5/1/2019		\$26.75	\$26.50	\$53.25
Laborers (Class 04 - See notes)	5/1/2020		\$28.75	\$26.15	\$54.90
Laborers (Class 04 - See notes)	5/1/2021		\$31.00	\$25.65	\$56.65
Laborers (Class 05 - See notes)	5/1/2017		\$30.60	\$25.65	\$56.25
Laborers (Class 05 - See notes)	5/1/2018		\$32.10	\$25.65	\$57.75
Laborers (Class 05 - See notes)	5/1/2019		\$32.80	\$26.50	\$59.30
Laborers (Class 05 - See notes)	5/1/2020		\$34.80	\$26.15	\$60.95
Laborers (Class 05 - See notes)	5/1/2021		\$37.05	\$25.65	\$62.70
Laborers (Class 06 - See notes)	5/1/2017		\$30.65	\$25.65	\$56.30
Laborers (Class 06 - See notes)	5/1/2018		\$32.15	\$25.65	\$57.80
Laborers (Class 06 - See notes)	5/1/2019		\$32.85	\$26.50	\$59.35
Laborers (Class 06 - See notes)	5/1/2020		\$34.85	\$26.15	\$61.00
Laborers (Class 06 - See notes)	5/1/2021		\$37.10	\$25.65	\$62.75
Laborers (Class 07 - See notes)	5/1/2017		\$30.50	\$25.65	\$56.15
Laborers (Class 07 - See notes)	5/1/2018		\$32.00	\$25.65	\$57.65
Laborers (Class 07 - See notes)	5/1/2019		\$32.70	\$26.50	\$59.20
Laborers (Class 07 - See notes)	5/1/2020		\$34.70	\$26.15	\$60.85
Laborers (Class 07 - See notes)	5/1/2021		\$36.95	\$25.65	\$62.60
Laborers (Class 08 - See notes)	5/1/2017		\$30.25	\$25.65	\$55.90
Laborers (Class 08 - See notes)	5/1/2018		\$31.75	\$25.65	\$57.40
Laborers (Class 08 - See notes)	5/1/2019		\$32.45	\$26.50	\$58.95
Laborers (Class 08 - See notes)	5/1/2020		\$34.45	\$26.15	\$60.60
Laborers (Class 08 - See notes)	5/1/2021		\$36.70	\$25.65	\$62.35
Laborers (Class 09 - See notes)	5/1/2017		\$30.10	\$25.65	\$55.75
Laborers (Class 09 - See notes)	5/1/2018		\$31.60	\$25.65	\$57.25
Laborers (Class 09 - See notes)	5/1/2019		\$32.30	\$26.50	\$58.80
Laborers (Class 09 - See notes)	5/1/2020		\$34.30	\$26.15	\$60.45
Laborers (Class 09 - See notes)	5/1/2021		\$36.55	\$25.65	\$62.20
Laborers (Class 10- See notes)	5/1/2017		\$30.25	\$25.65	\$55.90
Laborers (Class 10- See notes)	5/1/2018		\$33.30	\$25.65	\$58.95
Laborers (Class 10- See notes)	5/1/2019		\$32.45	\$26.50	\$58.95
Laborers (Class 10- See notes)	5/1/2020		\$34.45	\$26.15	\$60.60
Laborers (Class 10- See notes)	5/1/2021		\$36.70	\$25.65	\$62.35

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 20-02145 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 11 -See Notes)	5/1/2017		\$30.15	\$25.65	\$55.80
Laborers (Class 11 -See Notes)	5/1/2018		\$31.55	\$25.65	\$57.20
Laborers (Class 11 -See Notes)	5/1/2019		\$32.35	\$26.50	\$58.85
Laborers (Class 11 -See Notes)	5/1/2020		\$34.35	\$26.15	\$60.50
Laborers (Class 11 -See Notes)	5/1/2021		\$36.50	\$25.65	\$62.15
Laborers (Class 12 -See Notes)	5/1/2017		\$31.85	\$25.65	\$57.50
Laborers (Class 12 -See Notes)	5/1/2018		\$32.45	\$25.65	\$58.10
Laborers (Class 12 -See Notes)	5/1/2019		\$34.05	\$26.50	\$60.55
Laborers (Class 12 -See Notes)	5/1/2020		\$36.05	\$26.15	\$62.20
Laborers (Class 12 -See Notes)	5/1/2021		\$37.40	\$25.65	\$63.05
Laborers (Class 13 -See Notes)	5/1/2017		\$33.88	\$25.65	\$59.53
Laborers (Class 13 -See Notes)	5/1/2018		\$35.38	\$25.65	\$61.03
Laborers (Class 13 -See Notes)	5/1/2019		\$36.08	\$26.50	\$62.58
Laborers (Class 13 -See Notes)	5/1/2020		\$38.08	\$26.15	\$64.23
Laborers (Class 13 -See Notes)	5/1/2021		\$40.33	\$25.65	\$65.98
Laborers (Class 14 -See Notes)	5/1/2017		\$30.00	\$25.65	\$55.65
Laborers (Class 14 -See Notes)	5/1/2018		\$31.50	\$25.65	\$57.15
Laborers (Class 14 -See Notes)	5/1/2019		\$32.20	\$26.50	\$58.70
Laborers (Class 14 -See Notes)	5/1/2020		\$34.20	\$26.15	\$60.35
Laborers (Class 14 -See Notes)	5/1/2021		\$36.45	\$25.65	\$62.10
Laborers Utility (PGW ONLY) (Flagperson)	5/1/2017		\$23.52	\$17.58	\$41.10
Laborers Utility (PGW ONLY)	5/1/2017		\$30.55	\$17.58	\$48.13
Landscape Laborer	5/1/2016		\$21.19	\$22.65	\$43.84
Landscape Laborer	5/1/2019		\$24.22	\$23.50	\$47.72
Landscape Laborer	5/1/2020		\$26.13	\$22.95	\$49.08
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2017		\$44.87	\$28.14	\$73.01
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2018		\$46.41	\$28.60	\$75.01
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2017		\$47.86	\$29.03	\$76.89
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2018		\$49.41	\$29.49	\$78.90
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2017		\$44.62	\$28.07	\$72.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2018		\$46.16	\$28.53	\$74.69
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2017		\$47.61	\$28.97	\$76.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2018		\$49.16	\$29.42	\$78.58
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2017		\$40.53	\$26.87	\$67.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2018		\$42.07	\$27.33	\$69.40
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2017		\$40.24	\$26.78	\$67.02
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2018		\$41.78	\$27.22	\$69.00

Project: 20-02145 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Highway)					
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2017		\$38.51	\$26.27	\$64.78
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2018		\$40.05	\$26.73	\$66.78
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2017		\$37.52	\$25.98	\$63.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2018		\$39.07	\$26.43	\$65.50
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2017		\$54.14	\$32.47	\$86.61
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2018		\$55.99	\$33.02	\$89.01
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2017		\$53.84	\$32.40	\$86.24
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2018		\$55.70	\$32.92	\$88.62
Painters (Bridges, Stacks, Towers)	2/1/2017		\$53.67	\$26.09	\$79.76
Painters (Bridges, Stacks, Towers)	2/1/2018		\$54.14	\$27.27	\$81.41
Painters (Bridges, Stacks, Towers)	2/1/2019		\$55.52	\$28.39	\$83.91
Painters (Bridges, Stacks, Towers)	2/1/2020		\$57.12	\$28.79	\$85.91
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2017		\$51.91	\$32.53	\$84.44
Steamfitters	5/1/2018		\$56.37	\$34.39	\$90.76
Truckdriver class 1(see notes)	5/1/2017		\$30.31	\$17.96	\$48.27
Truckdriver class 1(see notes)	5/1/2018		\$31.78	\$17.96	\$49.74
Truckdriver class 1(see notes)	5/1/2019		\$32.06	\$19.19	\$51.25
Truckdriver class 1(see notes)	5/1/2020		\$34.78	\$17.96	\$52.74
Truckdriver class 1(see notes)	5/1/2021		\$36.33	\$17.96	\$54.29
Truckdriver class 2 (see notes)	5/1/2017		\$30.41	\$17.96	\$48.37
Truckdriver class 2 (see notes)	5/1/2018		\$31.88	\$17.96	\$49.84
Truckdriver class 2 (see notes)	5/1/2019		\$32.16	\$19.19	\$51.35
Truckdriver class 2 (see notes)	5/1/2020		\$34.88	\$17.96	\$52.84
Truckdriver class 2 (see notes)	5/1/2021		\$36.43	\$17.96	\$54.39
Truckdriver class 3 (see notes)	5/1/2017		\$30.66	\$17.96	\$48.62
Truckdriver class 3 (see notes)	5/1/2018		\$32.13	\$17.96	\$50.09
Truckdriver class 3 (see notes)	5/1/2019		\$32.41	\$19.19	\$51.60
Truckdriver class 3 (see notes)	5/1/2020		\$35.13	\$17.96	\$53.09
Truckdriver class 3 (see notes)	5/1/2021		\$36.68	\$17.96	\$54.64

PUBLIC WORKS EMPLOYMENT VERIFICATION ACT

In accordance with Act of July 5, 2012 (P.L. 1086, No. 127), known as the “Public Works Employment Verification Act” (43 P.S. 167.1 et. seq.), CONTRACTOR and subcontractors (if any) shall verify employment eligibility. An employee is an individual hired by CONTRACTOR or a subcontractor for whom CONTRACTOR or subcontractor is required by law to file a Form W-2 with the Internal Revenue Service. The Act does not apply to material suppliers for projects.

CONTRACTOR and subcontractors shall participate in EVP and shall, subject to the requirements of Federal law governing the use of EVP, use EVP to verify employment eligibility of each new employee (EVP is the E-Verify Program operated by the Department of Homeland Security that electronically verifies employment eligibility for employees). The Department of General Services of the Commonwealth shall post on its publicly accessible Internet website information regarding the requirements of Federal law governing the use of EVP. In conducting the verification required, CONTRACTOR and subcontractors shall not discriminate against an employee on the basis of race, ethnicity, color or national origin.

As a precondition of being awarded a contract for a Public Work, as defined in the Pennsylvania Prevailing Wage Act, 43 P.S. 165.1 et. seq.; or with respect such a contract that was awarded prior to the effective date identified in Section 20 of the Act but has not yet been executed, prior to the execution of the contract, CONTRACTOR shall provide OWNER with a verification form described in Subsection (c) of Section 4, acknowledging its responsibilities under and its compliance with Section 3 of the Act. Contracts between CONTRACTOR and subcontractors shall contain information about the requirements of the Act.

Prior to commencing work on a public works project, subcontractor(s) shall provide the OWNER with a verification form described in Subsection (c) of Section 4 of the Act acknowledging subcontractor’s responsibilities and compliance with Section 3 of the Act. Contracts between a subcontractor and its subcontractors shall contain information about the requirements of the Act.

The verification required by Section 4 of the Act shall be in a form prescribed by the Secretary of General Services of the Commonwealth and shall be posted on the Internet, and shall comply with the following additional requirements:

- 1) The statement shall include a certification that the information in the statement is true and correct and the individual signing the statement understands the submission of false or misleading information in connection with the verification shall subject the individual and the CONTRACTOR or subcontractor, as the case may be, to sanctions provided by law.
- 2) The statement shall be signed by a representative of the CONTRACTOR or subcontractor, as applicable, who has sufficient knowledge and authority to make the representations and certifications contained in the statement.

The Public Works Employment Verification Form is on the next page.

COMMONWEALTH OF PENNSYLVANIA
PUBLIC WORKS EMPLOYMENT VERIFICATION FORM

Date _____

Business or Organization Name (Employer) _____

Address _____

City _____ State _____ Zip Code _____

Contractor Subcontractor (check one)

Contracting Public Body _____

Contract/Project No _____

Project Description _____

Project Location _____

As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ('the Act') through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired post January 1, 2013 are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, _____, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

Authorized Representative Signature

SECTION 011000

SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Owner-furnished products.
5. Access to site.
6. Work restrictions.
7. Specification and drawing conventions.
8. Miscellaneous provisions.

1.2 PROJECT INFORMATION

A. Project Identification: Bucks County Free Library, Levittown Library

1. Project Location: 7311 New Falls Road, Levittown, PA 19055

B. Owner: Bucks County Free Library, 150 S. Pine Street, Doylestown, PA

C. Owner's Representative:

Joe Thompson
Bucks County Free Library
150 S. Pine Street
Doylestown, PA
215.348.0332 x1181
ThompsonJ@buckslib.org

D. Architect: RHJ Associates, P. C.

1. Architect's Contact: Jim Dziegrenuk (484.393.1604)

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents.

E. Type of Contract.

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

1.4 PHASED CONSTRUCTION

- A. The Work shall be conducted in one (1) phase.

1.5 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- F. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- G. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.
- H. 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.
- I. 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.
- J. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

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

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- K. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- L. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations 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

SECTION 012300

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Acceptance: The Owner shall have the option to delay the award of any Alternate for thirty (30) days after the Owner's execution of the Contract.
- C. Execute accepted alternates under the same conditions as other Work of this Contract including Project schedule, Milestones and Phases Plan required for completion of the Work.
- D. Specification sections and drawings contain requirements for materials and systems necessary to achieve the Work described under each alternate.

RHJ Associates, P.C.
King of Prussia, PA

Bucks County Free Library
Levittown Library
7311 New Falls Road
Window Replacement and Expansion
Keystone Grant FC410008452
Bid Issue – July 31st, 2020,

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012500

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use CSI Form 13.1A.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, 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 product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. 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.
- C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
- 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.
 - 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 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.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012600

CONTRACT MODIFICATION PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section 012600.

1.2 MINOR CHANGES IN THE WORK

- A. The Architect will issue supplemental instructions authorizing minor changes in the Work not involving adjustment to the Contract Sum or the Contract Time.

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 016000 "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: For Change Order proposals use AIA forms provided by the Architect.

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor if the modifications to the scope of Work, Contract Sum and Contract Time are mutually agreed to by the Owner and Contractor.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document. 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.
- C. 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

SECTION 012900

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. If the modifications to the scope of Work, Contract Sum and Contract Time are mutually agreed to by the Owner and Contractor.
- C. Related Sections include the following: Division 01 Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.2 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.
 - 2. Submit the schedule of values to Architect at earliest possible date but no later than 14 days before the date scheduled for submittal of initial Applications for Payment.
 - 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.
- D. 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. Prepare Schedule of Values to clearly separate the work for each phase of the project scheduled to be occupied by the Owner.

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 and in compliance with cost loaded schedule.
 - 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.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
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 where applicable.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
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.
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. 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.
10. 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.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
11. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

- E. Payment Application Times: The date for submission of each application for payment is the 25th day of each month. The period covered by each Application for Payment ends on the FINAL day of each month. Pencil copies of applications for payment shall be submitted in advance for review by Architect, Owner and Construction Manager no later than the 20th day of each month. All payment applications must comply with project scheduling requirements. These dates are subject to change for the duration of the Project by the Owner prior to the first application for payment.
- F. Use AIA Documents as form for Applications for Payment. Provide certification signature lines for both the Architect and the Construction Manager.
- G. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- H. Transmittal: Submit 4 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.
- I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of values.
 - 3. Contractor's construction schedule (preliminary if not final).
 - 4. Schedule of unit prices.
 - 5. Submittal schedule (preliminary if not final).
 - 6. List of Contractor's staff assignments.
 - 7. List of Contractor's principal consultants.
 - 8. Copies of building permits.
 - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 10. Initial progress report.
 - 11. Report of preconstruction conference.
 - 12. Certificates of insurance and insurance policies.
- J. 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 Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- K. 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 G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707-1994, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013100

PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination drawings.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.

1.2 DEFINITIONS

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

1.3 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.

1.4 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. 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.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- D. Coordination Drawing Organization: Organize coordination drawings as follows:
 1. Rough Opening Elevations: show dimensions of existing rough openings.
 2. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 3. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 - 4. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- E. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of Architect.
 - 6. RFI number, numbered sequentially.
 - 7. RFI subject.
 - 8. Specification Section number and title and related paragraphs, as appropriate.
 - 9. Drawing number and detail references, as appropriate.
 - 10. Field dimensions and conditions, as appropriate.
 - 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 12. Contractor's signature.
 - 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- F. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 - 1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly.
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- H. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
3. 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.
 4. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 5. 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.
- I. 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 execution of the Agreement.

1. 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.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long-lead items.
 - c. Designation of key personnel and their duties.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFIs.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.
 - j. Preparation of record documents.
 - k. Use of the premises and existing building.
 - l. Work restrictions.
 - m. Working hours.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Procedures for moisture and mold control.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Parking availability.
 - t. Office, work, and storage areas.
 - u. Equipment deliveries and priorities.
 - v. First aid.
 - w. Security.
 - x. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- J. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

K. Progress Meetings - not required

PART 2 - PRODUCTS (Not Used)

RHJ Associates, P.C.
King of Prussia, PA

Bucks County Free Library
Levittown Library
7311 New Falls Road
Window Replacement and Expansion
Keystone Grant FC410008452
Bid Issue – July 31st, 2020,

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013200

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Construction schedule updating reports.
 - 3. Construction reports.
 - 4. Site condition reports.

1.2 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. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time belongs to Owner.

1.3 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.
 3. Two paper copies.
- E. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- F. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- G. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, 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 the Notice to Proceed until most recent Application for Payment.
- H. Construction Schedule Updating Reports: Submit with Applications for Payment.
- I. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. 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.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
- 3. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- J. 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.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "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.
- K. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Phasing: Arrange list of activities on schedule by phase.
 - 2. Work under More Than One Contract: Include a separate activity for each contract.
 - 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 - 4. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.

- g. Seasonal variations.
- h. Environmental control.
- 5. Work Stages: Indicate important stages of construction for each major portion of the Work.
- L. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- M. 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.
- N. 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.
- O. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 REPORTS

- A. Construction Reports: Prepare a construction report at the request of Owner 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.
 - 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.

P. 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.

PART 2 – EXECUTION

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At by-weekly 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.
- Q. 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

SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- 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.

1.3 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.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of 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. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. 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 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- E. 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 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.
 - 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: 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.
- F. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
 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 electronic form 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.
- G. Options: Identify options requiring selection by Architect.
- H. Deviations: Identify deviations from the Contract Documents on submittals.

- I. 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.
- J. 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.
- K. 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:
 - 1. 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.
 - 2. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
 - 3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
 - 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
- L. 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:
 - 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.
 - b. Three paper copies of Product Data unless otherwise indicated. Architect will return two copies.
- M. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
- a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 36 by 24 inches.
3. Submit Shop Drawings in the following format:
- a. PDF electronic file.
 - b. Two opaque (bond) copies of each submittal. Architect will return one copy(ies).
 - c. Three opaque copies of each submittal. Architect will retain two copies; remainder will be returned.

- N. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 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 Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
 - 1) 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.

- O. 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. Submit product schedule in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of product schedule or list unless otherwise indicated. Architect will return two copies.
- P. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- Q. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- R. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- S. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- T. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- U. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- V. 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.
- W. 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.
- X. 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.
- Y. 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.
- Z. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- AA. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

- BB. 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.
- CC. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- DD. 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.
- EE. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
- FF. 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.
- GG. 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.
- HH. 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.
- II. 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.

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.
- JJ. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- KK. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- LL. 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.
1. Reviewed.
 2. Resubmit.
 3. As noted.
 4. Rejected.
- MM. 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.
- NN. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- OO. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

SECTION 014000

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 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. 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.
 - 2. 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.
 - 3. Specific test and inspection requirements are not specified in this Section.

1.2 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.
- C. 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.
- 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.

1.3 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.
- K. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. 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.
- L. 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.

1.5 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 re-inspecting.

M. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

N. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

- O. 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.
- P. 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.
- Q. 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.
- R. 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.
- S. 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.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- T. 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.
- U. Manufacturer's 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.
- V. 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. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

- d. When testing is complete, remove test specimens, assemblies, 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, 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.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 3. 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.
 4. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- W. 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. agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 72 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- X. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- Y. 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.
- Z. 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.
- AA. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- BB. 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.

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:
2. Date test or inspection was conducted.
 3. Description of the Work tested or inspected.

4. Date test or inspection results were transmitted to Architect.
5. Identification of testing agency or special inspector conducting test or inspection.

CC. 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 Section 017300 "Execution."

DD. Protect construction exposed by or for quality-control service activities.

EE. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Owner's construction forces.
 - 2. Occupants of Project.
 - 3. Architect.
 - 4. Testing agencies.
 - 5. Personnel of authorities having jurisdiction.
- B. HVAC Service:
 - 1. Owner shall be responsible to maintain and operate HVAC systems in existing building at all times. Utility costs will be paid by Owner.
- C. Clarification of Utility Use Charges:
 - 1. The Owner will pay for utility company metered electrical usage for construction activities for Prime Contractor.

1.3 INFORMATIONAL SUBMITTALS

- A. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

- D. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- E. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

- A. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat.
 - 2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS (not used)

2.2 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT (not used)

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- F. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

G. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

H. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

I. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

J. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

K. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

L. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

M. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

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

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

- O. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- P. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Keep interior spaces reasonably clean and protected from water damage.
 - 2. Discard or replace water-damaged and wet material.
 - 3. Discard, replace, or clean stored or installed material that begins to grow mold.
 - 4. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- Q. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- R. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- S. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may

have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION

SECTION 016000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 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.

1.2 DEFINITIONS

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

1.3 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. 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 Section 013300 "Submittal Procedures."
- b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

C. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.4 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.

1.5 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.
- D. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- E. 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.

1.6 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.
 - 7. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 8. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- F. 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. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.
- G. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 – PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Architect will make selection.
 - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- H. 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. 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.
- I. 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 Section 012500 "Substitution Procedures" for proposal of product.
- J. 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)

END OF SECTION

SECTION 017300

EXECUTION

PART 1 – GENERAL

1.1 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. Installation of the Work.
 - 3. Cutting and patching.
 - 4. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.

1.2 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or in a manner that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or in a manner that results in increased maintenance or decreased operational life or safety.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 4. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "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.
 - 1. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 2. Inform installers of lines and levels to which they must comply.
 - 3. Check the location, level and plumb, of every major element as the Work progresses.
 - 4. Notify Architect when deviations from required lines and levels exceed allowable tolerances.

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.
- F. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- G. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- H. 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.
- I. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- J. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- K. 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.
- L. 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.
- M. 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.
- N. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- O. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- P. Temporary Support: Provide temporary support of work to be cut.
- Q. 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.
- R. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Proceed with patching after construction operations requiring cutting are complete.
- S. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 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.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- T. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

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.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- U. Site: Maintain Project site free of waste materials and debris.
- V. 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.
- W. 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.
- X. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- Y. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- Z. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

AA. 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.

BB. 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.

CC. 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 (Not used)

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.

DD. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 017300

EXECUTION

PART 1 – GENERAL

1.1 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. Installation of the Work.
 - 3. Cutting and patching.
 - 4. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.

1.2 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or in a manner that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or in a manner that results in increased maintenance or decreased operational life or safety.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 4. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "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.
 - 1. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 2. Inform installers of lines and levels to which they must comply.
 - 3. Check the location, level and plumb, of every major element as the Work progresses.
 - 4. Notify Architect when deviations from required lines and levels exceed allowable tolerances.

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.
- F. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- G. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- H. 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.
- I. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- J. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- K. 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.
- L. 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.
- M. 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.
- N. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- O. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- P. Temporary Support: Provide temporary support of work to be cut.
- Q. 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.
- R. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Proceed with patching after construction operations requiring cutting are complete.
- S. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 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.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- T. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

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.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- U. Site: Maintain Project site free of waste materials and debris.
- V. 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.
- W. 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.
- X. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- Y. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- Z. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

AA. 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.

BB. 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.

CC. 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 (Not used)

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.

DD. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 017419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous construction waste.
2. Recycling nonhazardous construction waste.
3. Disposing of nonhazardous construction waste.

1.2 DEFINITIONS

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

1.3 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total non-hazardous solid waste generated by the Work. Facilitate recycling and salvage of materials.

1.4 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

1.5 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- G. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- H. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- I. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- J. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- K. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- L. Qualification Data: For waste management coordinator.

1.6 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements.
- M. Waste Management Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.7 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- N. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- O. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- P. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- Q. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- R. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

3. Clean salvaged items.
4. Pack or crate items after cleaning. Identify contents of containers.
5. Store items in a secure area until installation.
6. Protect items from damage during transport and storage.
7. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

3.3 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- S. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- T. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.

4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Wood Materials: Sort and stack members according to size, type, and length.
- U. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 3. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 4. Polystyrene Packaging: Separate and bag materials.
 5. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 6. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- V. Wood Materials:
 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.6 DISPOSAL OF WASTE

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

RHJ Associates, P.C.
King of Prussia, PA

Bucks County Free Library
Levittown Library
7311 New Falls Road
Window Replacement and Expansion
Keystone Grant FC410008452
Bid Issue – July 31st, 2020

END OF SECTION

SECTION 017700
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.

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.
- D. Certificate of Insurance: For continuing coverage.
- E. Field Report: For pest control inspection.

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.

- F. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
 5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- G. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 6. Advise Owner of changeover in heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- H. 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:
 - 3. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 - 4. 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.
 - 5. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 6. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- I. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 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.
- 2. Submit list of incomplete items in the following format:
 - a. PDF electronic file. Architect will return annotated copy.
 - b. Three paper copies unless otherwise indicated. Architect will return two copies.

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.
- J. 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 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.
- K. 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.

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.
- L. 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. Remove tools, construction equipment, machinery, and surplus material from Project site.
- d. Remove snow and ice to provide safe access to building.
- e. 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.
- f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- g. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
- h. 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.
- i. Remove labels that are not permanent.
- j. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

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

RHJ Associates, P.C.
King of Prussia, PA

Bucks County Free Library
Levittown Library
7311 New Falls Road
Window Replacement and Expansion
Keystone Grant FC410008452
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END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 – GENERAL

2.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Operation manuals for systems.
 - 3. Maintenance manuals for the care and maintenance of products.

1.2 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 4. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 5. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 - 2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return two Insert number copies.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.
- C. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- D. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Architect.
 - 8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 - 9. Cross-reference to related systems in other operation and maintenance manuals.
- E. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- F. Manual Contents: Organize into sets of manageable size.
- G. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2.2 EMERGENCY MANUALS (Not Used)

2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 2. Performance and design criteria if Contractor is delegated design responsibility.
 - 3. Precautions against improper use.
- H. Descriptions: Include the following:
 - 1. Product name and model number. Use designations for products indicated on Contract Documents.
 - 2. Manufacturer's name.
 - 3. Limiting conditions.
 - 4. Complete nomenclature and number of replacement parts.

2.4 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- I. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross- reference Specification Section number and title in Project Manual.
- J. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- K. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.

5. Repair instructions.

- L. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- M. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS (Not Used)

2.6 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- N. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance.
- O. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- P. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.
- Q. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 017839

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.

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 one paper-copy set(s) of marked-up record prints.
 - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy 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 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.
- D. 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. Format: DWG operating system.
 3. Format: Annotated PDF electronic file with comment function enabled.
 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 5. Refer instances of uncertainty to Architect for resolution.
 6. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
- E. 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.
 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.
 - 5. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 6. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 7. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 8. Note related Change Orders, record Product Data, and record Drawings where applicable.
- F. 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.
- G. Format: Submit record Product Data as annotated 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.
- H. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION

SECTION 024119

SELECTIVE DEMOLITION

PART 1 - GENERAL

0.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected site elements.
 - 2. Salvage of existing items to be reused or recycled.

0.2 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

0.3 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site.

0.4 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of selective demolition activities with starting and ending dates for each activity.

0.5 CLOSEOUT SUBMITTALS

- A. Inventory of items that have been removed and salvaged.

0.6 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

0.7 FIELD 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 purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Arrange selective demolition schedule so as not to interfere with Owner's operations.

0.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

0.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

0.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- C. Inventory and record the condition of items to be removed and salvaged.

0.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

0.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Disconnect, demolish, and remove any plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

0.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- B. Temporary Shoring: Design, 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.
- C. Remove temporary barricades and protections where hazards no longer exist.

0.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. 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. Temporarily cover openings to remain.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 4. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
 - 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 6. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- B. 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.
- 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 delivery to Owner.
 - 4. Transport items to Owner's storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 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 Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

0.6 CLEANING

- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
 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.
 3. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. 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

SECTION 085213

METAL CLAD WINDOWS

Part 1 General

1.1 Section Includes

- A. Ultimate Casement/Awning Crank Out: Operators, Stationary and Picture units complete with hardware, glazing, weather strip, insect screen, removable screen, grilles-between-the-glass, simulated divided lite, jamb extension, and standard or specified anchors, trim and attachments

1.2 Related Sections

- A. Section 01 33 23 – Submittal Procedures; Shop Drawings, Product Data and Samples
- B. Section 01 62 00 – Product Options
- C. Section 01 65 00 – Product Delivery
- D. Section 01 66 00 – Storage and Handling Requirements
- E. Section 01 71 00 – Examination and Preparation
- F. Section 01 73 00 - Execution
- G. Section 01 74 00 – Cleaning and Waste Management
- H. Section 01 76 00 – Protecting Installed Construction
- I. Section 06 22 00 – Millwork: Wood trim other than furnished by window manufacturer
- J. Section 07 92 00 – Joint Sealant: Sill sealant and perimeter caulking
- K. Section 09 90 00 – Painting and Coatings: Paint and stain other than factory applied finish

1.3 References

- A. American Society for Testing Materials (ASTM):
 - 1. E 283: Standard Test method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors

2. E 330: Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Door by Uniform Static Air Pressure Difference
 3. E 547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential
 4. E 2190: Specification for Sealed Insulated Glass Units
 5. C 1036: Standard Specification for Flat Glass
 6. F 2090-10: Standard Specifications for Windows Fall Prevention Devices with Emergency Escape (egress) Release Mechanisms
- B. American Architectural Manufacturer's Association/Window and Door Manufacturer's Association (AAMA/WDMA/CSA):
1. AAMA/WDMA/CSA 101/I.S.2/A440-05 Standard/Specification for Window, Skylights and Doors
 2. AAMA/WDMA/CSA 101/I.S.2/A440-08, NAFS – North American Fenestration Standard/Specification for Windows, Doors and Skylights
 3. AAMA/WDMA/CSA 101/I.S.2/A440-11, NAFS 2011 – Northern American Fenestration Standard/Specification for Windows, Doors and Skylights
- C. WDMA I.S.4: Industry Standard for Water Repellant Preservative Treatment for Millwork
- D. Window and Door Manufacturer's Association (WDMA): 101/I.S.2 WDMA Hallmark Certification Program
- E. Sealed Insulating Glass Manufacturer's Association/Insulating Glass Certification Council (SIGMA/IGCC)
- F. American Architectural Manufacturer's Association (AAMA): 2605: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels
- G. National Fenestration rating Council (NFRC):
1. 101: Procedure for Determining Fenestration Product thermal Properties
 2. 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence

1.4 System Description

A. Design and Performance Requirements:

Product	Air Tested to psf	Water Tested to psf	Structural Tested to psf	Certification Rating	Design Pressure (DP)	Max Overall Width	Max Overall Height
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	75	CW-PG50-C	50	36"	96-1/8"
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	60	CW-PG40-C	40	36"	102"
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	75	LC-PG50-C	50	40"	71-1/8"
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	75	LC-PG50-C	50	40"	92"
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	60	CW-PG40-C	40	40"	96-1/8"
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	75	LC-PG50-C	50	44"	71-1/8"
Ultimate Casement (Full Frame and Narrow Frame)	1.57	7.5	60	LC-PG40-C	40	44"	91-1/8"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	75	LC-PG50-AP	50	40	47-1/8"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	75	CW-PG 50-AP	50	48"	47-1/8"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	60	LC-PG40-AP	40	48"	96"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	75	LC-PG50-AP	50	56"	47-1/8"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	45	LC-PG30-AP	30	64"	81-1/8"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	75	LC-PG50-AP	50	72"	63-1/8"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	45	LC-PG30-AP	30	81-1/8"	64"
Ultimate Awning (Full Frame and Narrow Frame)	1.57	7.5	45	LC-PG30-AP	30	96"	48-1/8"

1.5 Submittals

- A. Shop Drawings: Submit shop drawings under provision of Section 01 33 23
- B. Product Data: Submit catalog data under provision of Section 01 33 23
- C. Samples:
 - 1. Submit corner section under provision of section 01 33 23
 - 2. Include glazing system, quality of construction and specified finish
- D. Quality Control Submittals: Certificates: submit manufacturer's certification indicating compliance with specified performance and design requirement under provision of section 01 33 23

1.6 Quality Assurance

- A. Requirements: consult local code for IBC [International Building Code] and IRC [International Residential Code] adoption year and pertinent revisions for information on:
 - 1. Egress, emergency escape and rescue requirements
 - 2. Basement window requirements
 - 3. Windows fall prevention and/or window opening control device requirements

1.7 Delivery

- A. Comply with provisions of Section 01 65 00
- B. Deliver in original packaging and protect from weather

1.8 Storage and Handling

- A. Prime and seal wood surfaces, including to be concealed by wall construction, if more than thirty (30) days will expire between delivery and installation
- B. Store window units in an upright position in a clean and dry storage area above ground to protect from weather under provision of Section 01660

1.9 Warranty

Complete and current warranty information is available at marvin.com/warranty. The following summary is subject to the terms, condition, limitations and exclusions set forth in the Marvin Windows and Door Limited Warranty and Products in Coastal Environments Limited Warranty Supplement:

- A. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Glass is warranted against stress cracks caused by manufacturing defects from ten (10) years from the original date of purchase.
- B. Standard exterior aluminum cladding finish is warranted against manufacturing defects resulting in chalk, fade and loss of adhesion (peel) per the American Architectural Manufacturer's Association (AAMA) Specification 2605-11 Section 8.4 and 8.9 for twenty (20) years from the original date of purchase.
- C. Factory-applied interior finish is warranted to be free from finish defects for a period of five (5) years from the original date of purchase.
- D. Hardware and other non-glass components are warranted to be free from manufacturing defects for ten (10) years from the original date of purchase.

Part 2 Products

2.1 Manufactured Units

- A. Description: Factory-assembled Ultimate Casement/Awning, stationary casement unit, top pivoting awning as manufactured by Marvin Windows and Doors, Warroad, Minnesota.
Contact: Frank LaMura, Super Enterprises Territory Manager, (215) 817-0295.

2.2 Frame Description

- A. Interior: Non Finger-Jointed Pine or finger-jointed core with non finger-jointed Pine veneer; optional non finger-jointed Douglas Fir or finger-jointed core with non finger-jointed Douglas Fir veneer; optional non finger-jointed White Oak or finger-jointed with non finger-jointed Oak veneer; non finger-jointed Cherry or finger-jointed core with Cherry veneer; non finger-jointed Mahogany or finger-jointed core with non finger-jointed Mahogany veneer; non finger-jointed Vertical Grain Douglas Fir or finger-jointed with non finger-jointed Vertical Grain Douglas Fir veneer.
 - 1. Kiln-dried to moisture content no greater than twelve (12) percent at the time of fabrication
 - 2. Water repellant preservative treated in accordance with WDMA I.S.4.
- B. Frame exterior aluminum clad with 0.050 inch (1.3mm) thick extruded aluminum
- C. Frame thickness: 1 3/16" (30mm)

- D. Frame depths for full frame units have an overall 5 21/32" jamb (144mm). 4 9/16" (116mm) jamb depth from the nailing fin plane to the interior face of the frame for new construction.
- E. Frame depth for replacement frame units have an overall 3 1/4" jamb (83mm) for replacement application and 2 3/16" (56mm) jamb depth from the nailing fin plane to the interior face of the frame for new construction
- F. Frame bevel: Standard is no bevel, optional available are 8 degree and 14 degree bevel (Narrow Frame frame only)

2.3 Sash Description

- A. Interior: Non Finger-Jointed Pine or finger-jointed core with non finger-jointed Pine veneer.
 - 1. Kiln-dried to moisture content no greater than twelve (12) percent at the time of fabrication
 - 2. Water repellant preservative treated with accordance with WDMA I.S.4
- B. Sash exterior aluminum clad with 0.050" (1.3mm) thick extruded aluminum
- C. Sash thickness: 1 5/8" (41mm) and 1 7/8" (48mm) for full frame units. Narrow Frame frame will have a sash thickness of 1 5/8" (41mm).
- D. Stiles and Rails: 2 1/16" (52mm)
- E. Sash Option: Optional tall bottom rail: 3 9/16" (90mm)
- F. Interior Sash Sticking
 - 1. Standard is: Ogee
 - 2. Optional: Square Sticking and Ovolo profile

2.4 Glazing

- A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC certified to performance level CBA when tested in accordance with ASTM E 2190
- B. Glazing method: Insulating glass
- C. Glazing seal: Silicone bedding at interior and exterior
- D. Insulating glass will be altitude adjusted with capillary tubes for higher elevations. Argon gas is not available for elevations that require capillary tubes
- E. Glass Type: Gray, E2 with or without Argon.

2.5 Finish

- A. Exterior: Aluminum clad. Fluoropolymer modified acrylic topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
 - 1. Aluminum clad color: Cashmere
- B. Interior Finish options:
 - 1. Prime: Factory-applied enamel primer. Available on Pine product only. Meets WDMA TM-11 requirements.

2.6 Hardware

- A. Awning hardware:
 - 1. Locks: Uses a multipoint sequential concealed locking system in both jambs. Lock handles are removable, non-handed and are available in the same finishes as the handles. Standard tie bars and cams – steel coated with E-Gard™. Standard keepers – steel coated with E-Gard™. Keeper features a roller for reduce average lock force and dies not easily disengage with the cam even under severe loading.
 - 1. Handles: Standard operating handle is a folding handle, zinc painted with the standard folding cover being molded plastic. Available colors: standard is Satin Taupe (painted), White (painted), Bronze (painted), Matte Black (painted), Satin Chrome (plated), Satin Nickel (plated), Oil Rubbed Bronze (plated), Brass (plated), Antique Bras (plated)
 - 2. Hinges: Two hinges that connect the stiles of the sash to the jambs of the frame. Hinges are steel coated with E-Gard™ and the hinge track is stainless steel. Hinges designed to support up to a 210 lb sash.
 - 3. Optional: Op-O-Lock Hardware: Requires the folding handle. Minimum frame OM width is 28" (711mm). A minimum frame OM height is 15 1/8" (384mm). Maximum frame OM width is 72" (1829mm). Maximum frame OM height is 47 1/8" (1197mm).

2.7 Weather Strip

- A. Weather strip at the frame is a hollow-foamed material bent around 90 degree corner to allow for seamless corner joints
 - 1. Color: Beige
- B. Sash weather strip bulb shaped glass filled material
 - 1. Color: White, beige or black

2.8 Jamb Extension

- A. Jamb extensions are available for various wall thickness factory-applied up to a 12 (305mm) wide
- B. Finish: Match interior frame finish

2.9 Insect Screen

- A. Crank Out
 - 1. Aluminum frame finish is available in Satin, Bronze, Stone White, or Ebony
 - 2. Screen mesh: Charcoal Fiberglass, Charcoal Aluminum Wire, Black Aluminum Wire, Bright Aluminum Wire; Bright Bronze Wire, High Transparency Mesh (Hi-Tran) Charcoal Fiberglass
 - 3. Optional Wood Screen Surround with Hi Tran Fiberglass Screen. Species will match unit species
 - 4. Optional Retractable Wood Screen with Hi Tran Fiberglass Screen

2.10 Accessories and Trim

- A. Installation Accessories:
 - 1. Factory-installed vinyl nailing/drip cap
 - 2. Installation brackets: 6 3/8" (162mm), 9 3/8" (283mm), 15 3/8" (390mm)
 - 3. Masonry brackets: 6" (152mm), 10" (254mm)
- B. Aluminum Extrusions:
 - 1. Profile: Brick mold casing, flat casing, various special casing, frame expander, jamb extender, mullion cover, mullion expander, subsill, subsill end cap and lineal cap
 - 2. Finish: Fluoropolymer modified acrylic topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
 - a. Available in all exterior aluminum clad colors

Part 3 Execution

3.1 Examination

- A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions as required in Section 01 71 00. Report frame defects or unsuitable conditions to the General Contractor before proceeding.
- B. Acceptance of Condition: Beginning on installation confirms acceptance of existing conditions.

3.2 Installation

- A. Comply with Section 01 73 00.
- B. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.
- C. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants. Do not use expansive foam sealant.
- D. Install accessory items as required.
- E. Use finish nails to apply wood trim and mouldings.

3.3 Field Quality Control

- A. Remove visible labels and adhesive residue according to manufacturer's instruction.
- B. Unless otherwise specified, air leakage resistance tests shall be conducted at a uniform static pressure of 75 Pa (~1.57 psf). The maximum allowable rate of air leakage shall not exceed 2.3 L/sm² (~0.45 cfm/ft²).
- C. Unless otherwise specified, water penetration resistance testing shall be conducted per AAMA 502 and ASTM E1105 at 2/3 of the fenestration products design pressure (DP) rating using "Procedure B" – cyclic static air pressure difference. Water penetration shall be defined in accordance with the test method(s) applied.

3.4 Cleaning

- A. Remove visible labels and adhesive residue according to manufacturer's instruction.
- B. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 74 00.

3.5 Protecting Installed Construction

- A. Comply with Section 07 76 00.
- B. Protecting windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

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End of Section

SECTION 088000

GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Glass for doors and storefront framing.
2. Glazing sealants and accessories.

1.2 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- C. IBC: International Building Code.
- D. Interspace: Space between lites of an insulating-glass unit.

1.3 COORDINATION

- A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of the following products; 12 inches square.
1. Coated glass.
 2. Insulating glass.
 3. Each decorative film overlay.

- C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.
- D. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer manufacturers of insulating-glass units with sputter-coated, low-E coatings and glass testing agency.
- B. Product Certificates: For glass.
- C. Product Test Reports: For coated glass and insulating glass, for tests performed by a qualified testing agency.
- D. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications for Insulating-Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved by coated-glass manufacturer.
- B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.
- C. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.

1.8 PRECONSTRUCTION TESTING

- A. Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.
 - 1. Testing is not required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.10 FIELD CONDITIONS

- B. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

- 1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F.

1.11 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

- 1. Warranty Period: 10 years from date of Substantial Completion.

- B. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

- 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 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. JE Berkowitz, LP.
 2. Pilkington North America.
 3. PPG Industries, Inc.
 4. Vetrotech Saint-Gobain.
- B. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
1. Obtain tinted glass from single source from single manufacturer.
 2. Obtain reflective-coated glass from single source from single manufacturer.
- C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design glazing.
- C. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined according to the IBC and ASTM E 1300.
1. Design Wind Pressures: As indicated on Drawings.
- D. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
- E. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
 2. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
 3. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F.

4. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
5. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 1. GANA Publications: "Glazing Manual."
 2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.
- D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated.
- E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 GLASS PRODUCTS

- A. Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.
- B. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
- C. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

2.5 INSULATING GLASS

- A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.

1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
2. Spacer: Manufacturer's standard spacer material and construction.
3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.6 GLAZING SEALANTS

- A. General:

1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

- B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

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. Dow Corning Corporation.
 - b. GE Construction Sealants; Momentive Performance Materials Inc.
 - c. Pecora Corporation.
 - d. Sika Corporation.
 - e. Tremco Incorporated.

2.7 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA800 for products indicated below:
 - 1. AAMA 804.3 tape, where indicated.
 - 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 - 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
 - 1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
 - 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, with requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.9 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product

manufacturer and referenced glazing publications, to comply with system performance requirements.

1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
 - a. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 2. Presence and functioning of weep systems.
 3. Minimum required face and edge clearances.
 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches.
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.
- J. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until right before each glazing unit is installed.
- F. Position glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

3.5 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

3.6 SEALANT GLAZING (WET)

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding

into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.7 CLEANING AND PROTECTION

- A. Immediately after installation remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
 - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION

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