

PROJECT MANUAL FOR:

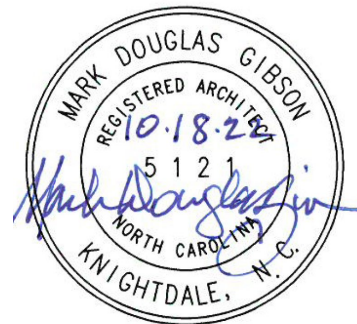
Window Replacement for NCDMV-State Highway Patrol Communications & Logistics Building

1300 BLUE RIDGE ROAD
RALEIGH, NORTH CAROLINA 27607

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Architect:

FACILITIES DESIGN
NCDOT FACILITIES MAINTENANCE UNIT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601



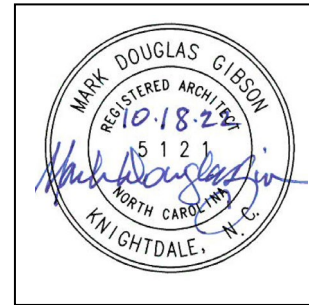
October 18, 2022

SET NO. _____

PROJECT: Window Replacement for NCDMV-State Highway Patrol
Communications & Logistics Building
1300 Blue Ridge Road, Raleigh, NC 27607

OWNER: NC Department of Transportation

ARCHITECT: NCDOT Facilities Design Unit,
1 S. Wilmington Street
Raleigh, NC 27601
(919) 707-4550
Mark D. Gibson, RA



**WINDOW REPLACEMENT FOR NCDMV-STATE HIGHWAY PATROL
C&L BUILDING, RALEIGH, NORTH CAROLINA**

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C&L BUILDING, RALEIGH, NORTH CAROLINA**

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C&L Building, Raleigh, North Carolina**

ADVERTISEMENT FOR BIDS

Sealed proposals will be received until

2:00 PM on Thursday, December 15, 2022,

in the NCDMV-State Highway Patrol C&L Building, 1300 Blue Ridge Road,
Raleigh, North Carolina 27607 for the construction of

**Window Replacement for NCDMV-Highway Patrol
Communications & Logistics (C&L) Building, Raleigh, North Carolina**

at which time and place bids will be opened and read.

A **MANDATORY Pre-Bid Meeting** will be held on

Wednesday, November 16, 2022 at 2:00 PM in the Conference Room of the
NCDMV-State Highway Patrol C&L Maintenance Building, 1300 Blue Ridge
Road, Raleigh, North Carolina 27607 A site visit will be conducted
immediately following the Pre-Bid Meeting.

Complete plans and specifications for this project may be obtained from

**MARK D. GIBSON RA,
NCDOT FACILITIES DESIGN UNIT
1 SOUTH WILMINGTON STREET,
RALEIGH, NORTH CAROLINA 27601
OR
1525 MAIL SERVICE CENTER,
RALEIGH, NC 27699-1525**

during normal office hours: Plan Deposit \$100.00 per printed set; or
by free download at

https://connect.ncdot.gov/letting/Pages/Letting-List.aspx?let_type=5&let_status=Advertised

The state reserves the unqualified right to reject any and all proposals.

Signed:_____
Michael D. Mountcastle PE
Director, Facilities Management Unit
North Carolina Department of Transportation
1525 Mail Service Center
Raleigh, NC 27699-1525

**Window Replacement for NCDMV-State Highway Patrol
C&L Building, Raleigh, North Carolina**

NOTICE TO BIDDERS

Sealed proposals will be received by Mark D. Gibson RA, NCDOT, in the NCDMV-State Highway Patrol C&L Building, 1300 Blue Ridge Road, Raleigh, North Carolina 27607 up to **2:00 PM** for Single Prime bids on **Thursday, December 15, 2022**, and immediately thereafter publicly opened and read for the furnishing of labor, material, and equipment entering into the construction of the **Window Replacement for NCDMV-State Highway Patrol Communications & Logistics (C&L) Building, Raleigh, North Carolina.**

The project consists of Demolition of all existing single-pane steel sash windows and select exterior hollow metal doors and frames and installation of new Contractor-provided fixed sash aluminum frame windows, storefront, and entrance doors with insulating glass units. Contractor shall also provide associated door hardware and new window sills and stools and make minor repairs to surrounding materials affected by this work as required to match adjacent finishes.

Bids will be received as a Single Prime Contract, combined bid for all work as defined in the construction documents. All proposals shall be lump sum.

Pre-Bid Meeting

An open **MANDATORY Pre-Bid Meeting** will be held on **Wednesday, November 16, 2022 at 2:00 PM** in the Conference Room of the NCDMV-State Highway Patrol C&L Maintenance Building, 1300 Blue Ridge Road, Raleigh, North Carolina 27607. Any preferred brand alternates and their performance standards that the owner will consider for approval on this project will be identified.

PLANS and SPECIFICATIONS WILL BE AVAILABLE IN PAPER FORMAT FOR A COST OF \$100.00 PER SET. Contact Mark D. Gibson RA at the address or telephone number below. Complete plans, specifications, and contract documents will also be posted in .pdf format at the following web addresses:

https://connect.ncdot.gov/letting/Pages/Letting-List.aspx?let_type=5&let_status=Advertised

Firms bidding this project are not required to be Prequalified by NCDOT.

All questions during the Bid Period shall be directed to the Architect, Mr. Mark D. Gibson RA, in the form of a written RFI, via e-mail: mdgibson1@ncdot.gov. **ALL DOCUMENTATION, DURING THE BID PERIOD, WILL BE POSTED ON THE WEBSITE.** IT IS THE RESPONSIBILITY OF ALL THOSE PARTICIPATING IN THE BID TO CHECK THE WEBSITE AT INTERVALS FOR ADDENDA, LIST OF REGISTERED GENERAL CONTRACTORS, ETC. THE LIST OF GENERAL CONTRACTORS ATTENDING THE MANDATORY PRE-BID WILL BE POSTED ON THE WEBSITE AFTER THE PREBID MEETING IN ADDENDUM NO. 1.

Digital documents will be available through the following plan rooms: *iSqFt* at www.isqft.com, (312-380-4782); *Dodge Data & Analytics* at www.construction.com (800-393-6343); *CMD Group* at www.cmdgroup.com, (312-380-4782); and in Minority Plan Room: National Institute of Minority Economic Development, Inc. at www.theinstitutenc.org; 114 West Parrish Street, 4th Floor, Durham, NC. 27701 (919-956-8889).

**Window Replacement for NCDMV-State Highway Patrol
C&L Building, Raleigh, North Carolina**

NOTICE TO BIDDERS

NTB-1

NOTE: The bidder shall identify on his bid proposal the minority business participation he will use on the project (*Identification of Minority Business Participation*) form and shall include either *Affidavit A* or *Affidavit B* as applicable. Forms and instructions are included within the Proposal Form in the bid documents. Failure to complete these forms is grounds for rejection of the bid. (GS143-128.2c Effective 1/1/2002.)

All contractors are hereby notified that they must have the proper license as required under the state laws governing their respective trades.

General contractors are notified that Chapter 87, Article 1, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General contractors submitting bids on this project must have license classification for Building Construction. A bid bond is not required for this proposal.

Neither performance nor payment bonds are required for this project.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of 30 days.

The owner reserves the right to reject any or all bids and to waive informalities.

Architect:
Mark D. Gibson RA
Facilities Design Unit, NCDOT
1 South Wilmington Street
Raleigh, North Carolina 27601
(919) 707-4550

Owner:
Michael D. Mountcastle PE
Director
Facilities Management Unit, NCDOT
1 South Wilmington Street
Raleigh, North Carolina 27601
(919) 707-4552

NOTICE TO BIDDERS

NTB-2

STATE OF NORTH CAROLINA STANDARD FORM OF INFORMAL CONTRACT AND GENERAL CONDITIONS

FOR

*North Carolina Department of Transportation
Window Replacement for NCDMV-State Highway Patrol
Communications & Logistics (C&L) Building, Raleigh, North Carolina*

SCOPE OF WORK

The project consists of Demolition of all existing single-pane steel sash windows and select exterior hollow metal doors and frames and installation of new Contractor-provided fixed sash aluminum frame windows, storefront, and entrance doors with insulating glass units. Contractor shall also provide associated door hardware and new window sills and stools and make minor repairs to surrounding materials affected by this work as required to match adjacent finishes.

NOTICE TO BIDDERS

Sealed bid for this work will be received by: *Mark D. Gibson RA, NCDOT Facilities Design Unit* in the Conference Room of the NCDMV-State Highway Patrol C&L Maintenance Building, 1300 Blue Ridge Road, Raleigh, North Carolina 27607.

Telephone: 919-814-6086

up to **2:00 PM**, on **Thursday, December 15, 2022**, and immediately thereafter publicly opened and read aloud. Complete plans and specification and contract documents can be obtained from

**MARK D. GIBSON RA,
NCDOT FACILITIES DESIGN UNIT
1 SOUTH WILMINGTON STREET,
RALEIGH, NORTH CAROLINA 27601
Telephone: 919-707-4550; Email: mdgibson1@ncdot.gov
OR
1525 MAIL SERVICE CENTER,
RALEIGH, NC 27699-1525**

Contractors are hereby notified that they must have proper license under the State laws governing their respective trades and that North Carolina General Statute 87 will be observed in receiving and awarding contracts. General Contractors must have general license classification for General Construction.

No bid may be withdrawn after the opening of bids for a period of 30 days. The Owner reserves the right to reject any or all bids and waive informalities. Bids shall be made only on the BID/ACCEPTANCE form provided herein with all blank spaces for bids properly filled in and all signatures properly executed.

Please note on the envelope – **Bid: Attn: Mark D. Gibson RA**

*Window Replacement for NCDMV-State Highway Patrol
C&L Building, Raleigh, North Carolina 27607
December 15, 2022
(Contractor Name)
(License Number)*

A **MANDATORY Pre-Bid Meeting** will be held on **Wednesday, November 16, 2022, at 2:00 PM** in the Conference Room of the NCDMV-State Highway Patrol C&L Maintenance Building, 1300 Blue Ridge Road, Raleigh, North Carolina 27607. A site visit will be conducted immediately following the Pre-Bid Meeting.

BID/ACCEPTANCE FORM

for

North Carolina Department of Transportation
Window Replacement for NCDMV-State Highway Patrol
C&L Building, Raleigh, North Carolina 27607

We are in receipt of Addendum _____1 _____2 _____3 _____4

The undersigned, as bidder, proposes and agrees if this bid is accepted to contract with the State of North Carolina through the North Carolina Department of Transportation for the furnishing of all materials, equipment, and labor necessary to complete the construction of the work described in these documents in full and complete accordance with plans, specifications, and contract documents, and to the full and entire satisfaction of the State of North Carolina and the North Carolina Department of Transportation for the sum of:

BASE BID: _____ **Dollars \$** _____

Respectively submitted this _____ day of _____ 2022

(Contractor's Name)

Federal ID#: _____

By: _____

Witness: _____

Title: _____

(Owner, partner, corp. Pres. Or Vice President)

(Proprietorship or Partnership)

Address: _____

Attest: *(corporation)*

Email Address: _____

(Corporate Seal)

By: _____ License #: _____

Title: _____

(Corporation, Secretary./Ass't Secretary.)

ACCEPTED by the STATE OF NORTH CAROLINA
through the

North Carolina Department of Transportation
(Agency/Institution)

Total amount accepted by the Owner, including base bid and bid alternates: _____

BY: _____ TITLE: _____

Date: _____

GENERAL CONDITIONS

1. GENERAL

It is understood and agreed that by submitting a bid that the Contractor has examined these contract documents, drawings and specifications and has visited the site of the Work, and has satisfied himself relative to the Work to be performed.

2. DEFINITIONS

Owner: "Owner" shall mean, The State of North Carolina through the North Carolina Department of Transportation.

Contractor: "Contractor" shall mean the entity that will provide the services for the Owner.

Designer: The **designer(s)** are those referred to within this contract, or their authorized representatives. The Designer(s), as referred to herein, shall mean architect and/or engineer responsible for preparing the project plans and specifications. They will be referred to hereinafter as if each were of the singular number, masculine gender.

Contract Documents: "Contract Documents" shall consist of the Notice to Bidders; General Conditions of the Contract; special conditions if applicable; Supplementary General Conditions; the drawing and specifications, including all bulletins, addenda or other modifications of the drawings and specifications incorporated into the documents prior to their execution; the bid; the contract; the performance bond if applicable; and insurance certificates. All of these items together form the contract.

INTENT AND EXECUTION OF DOCUMENTS

The drawings and specifications are complementary, one to the other. That which is shown on the drawings or called for in the specifications shall be as binding as if it were both called for and shown. The intent of the drawings and specifications is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a complete job. In case of discrepancy or disagreement in the Contract Documents, the order of precedence shall be: Form of Contract, specifications, large-scale detail drawings, small-scale drawings.

In such cases where the nature of the work requires clarification by the Designer/ Owner, the Designer/ Owner shall furnish such clarification. Clarifications and drawings shall be consistent with the intent of the Contract Documents, and shall become a part thereof.

4. AS-BUILT MARKED-UP CONSTRUCTION DOCUMENTS

Contractor shall provide one complete set of legible "as-built" marked-up construction drawings and specifications recording any and all changes made to the original design during the course of construction. In the event no changes occurred, submit construction drawings and specifications set with notation "No Changes." The Designer/Owner must receive "As-built" marked-up construction drawings and specifications before the final pay request can be processed.

5. SUBMITTAL DATA

The Contractor awarded the contract shall submit all specified submittals to the Owner/Designer. A minimum number of copies as specified by the owner, of all required submittal data pertaining to construction, performance and general dimensional criteria of the components listed in the technical specifications shall be submitted. No material or equipment shall be ordered or installed prior to written approval of the submittals by the Designer/Owner. Failure to provide submittal data for review on equipment listed in the technical specifications will result in removal of equipment by the Contractor at his expense if the equipment is not in compliance with the specifications.

6. SUBSTITUTIONS

In accordance with the provisions of G.S. 133-3, material, product, or equipment substitutions proposed by the bidders to those specified herein can only be considered during the bidding phase until five (5) days prior to the receipt of bids or by the date specified in the pre bid conference, when submitted to the Designer with sufficient data to confirm material, product, or equipment equality. Proposed substitutions submitted after this time will be considered only as potential change order.

Submittals for proposed substitutions shall include the following information:

- a. Name, address, and telephone number of manufacturer and supplier as appropriate.
- b. Trade name, model or catalog designation.
- c. Product data including performance and test data, reference standards, and technical descriptions of material, product, or equipment. Include color samples and samples of available finishes as appropriate.
- d. Detailed comparison with specified products including performance capabilities, warranties, and test results.
- e. Other pertinent data including data requested by the Designer to confirm product equality.

If a proposed material, product, or equipment substitution is deemed equal by the Designer to those specified, all bidders of record will be notified by Addendum.

7. WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

The contractor shall maintain, in readable condition at his job site one complete set of working drawings and specifications for his work including all shop drawings. Such drawings and specifications shall be available for use by the owner, designer, or his authorized representative.

The contractor shall maintain at the job site, a day-to-day record of work-in-place that is at variance with the contract documents. Such variations shall be fully noted on project drawings by the contractor and submitted to the designer upon project completion and no later than 30 days after acceptance of the project.

8. MATERIALS, EQUIPMENT, EMPLOYEES

- a. The contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, fuel, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.
- b. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.
- c. Upon notice, the contractor shall furnish evidence as to quality of materials.
- d. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth

and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the designer for approval or disapproval; the designer prior to the opening of bids shall make such approval or disapproval. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the owner and the designer and owner approves.

- e. The designer is the judge of equality for proposed substitution of products, materials or equipment.
- f. If at any time during the construction and completion of the work covered by these contract documents, the language, conduct, or attire of any workman of the various crafts be adjudged a nuisance to the owner or designer, or if any workman be considered detrimental to the work, the contractor shall order such parties removed immediately from grounds.
- g. The Contractor shall cooperate with the designer and the owner in coordinating construction activities.
- h. The Contractor shall maintain qualified personnel and effective supervision at the site at all times during the project, and exercise the appropriate quality control program to ensure compliance with the project drawings and specifications. The designer is responsible for determining compliance with the drawings and specifications.

9. CODES, PERMITS AND INSPECTIONS

The Contractor shall obtain the required permits, if required, give all notices, and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Designer in writing. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the Owner, he shall bear all cost arising there from.

All work under this contract shall conform to the current North Carolina Building Code and other state and national codes as are applicable.

Projects constructed by the State of North Carolina or by any agency or institution of the State are not subject to county or municipal building codes and may* not be subject to inspection by county or municipal authorities. Where appropriate, the Contractor shall, cooperate with the county or municipal authorities by obtaining building permits. The contractor at no cost may obtain permits to the owner.

All fire alarm work shall be in accordance with the latest State Construction Office (SCO) *Guidelines for Fire Alarm Installation* (NFPA72). Where the contract documents are in conflict with the SCO guidelines, the SCO guidelines shall govern. The Contractor shall be responsible for all the costs for the correction of the work where he installs it in conflict with the latest edition of the SCO *Guidelines for Fire Alarm Installation*.

*Inspection and certification of compliance by local authorities is necessary if an architect or engineer was not employed on the project, or if the plans and specifications were not approved and the construction inspected by the State Construction Office.

10. PROTECTION OF WORK, PROPERTY, THE PUBLIC AND SAFETY

- a. The contractors shall be jointly responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the owner or designer, and by laws or ordinances governing such conditions. They shall be responsible for any damage to the owner's property or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages. They shall be responsible for and pay for any damages caused to the owner. All contractors shall have access to the project at all times, except as indicated in the Supplemental General Conditions.
- b. The contractor shall provide cover and protect all portions of the structure when the work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other

materials necessary to protect all the work on the building, whether set by him, or any of the subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the owner.

- c. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the designer and owner.
- d. The contractor shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around it. He shall barricade all walks, roads, etc., as directed by the designer to keep the public away from the construction. All trenches, excavations or other hazards in the vicinity of the work shall be well barricaded and properly lighted at night.
- e. The contractor shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. *Accident Prevention Manual in Construction*, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts, stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.
- f. The contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974, *Federal Register*), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.
- i. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the contractor is hereby authorized to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage. Any compensation claimed by the contractor on account of such action shall be determined as provided for under Article 13(b).
- j. Any and all costs associated with correcting damage caused to adjacent properties of the construction site or staging area shall be borne by the contractor. These costs shall include but not be limited to flooding, mud, sand, stone, debris, and discharging of waste products.

11. SUBCONTRACTS AND SUBCONTRACTORS

The Contractor is and remains fully responsible for his own acts or omissions as well as those of any subcontractor or of any employee of either. The Contractor agrees that no contractual relationship exists between the subcontractor and the Owner in regard to the contract, and that the subcontractor acts on this work as an agent or employee of the Contractor.

12. CONTRACTOR-SUBCONTRACTOR RELATIONSHIPS

The Contractor agrees that the terms of these Contract Documents shall apply equally to each Subcontractor as to the Contractor, and the Contractor agrees to take such action as may be necessary to bind each Subcontractor to these terms. The Contractor further agrees to conform to the Code of Ethical Conduct as adopted by the Associated General Contractors of America, Inc., with respect to Contractor-Subcontractor relationships. The Owner reserves the right to limit the amount of portions of work to be subcontracted as hereinafter specified.

13. CHANGES IN THE WORK AND CLAIMS FOR EXTRA COST

- a. The owner may have changes made in the work covered by the contract. These changes will not invalidate and will not relieve or release the contractor from any guarantee given by him pertinent to the contract provisions. These changes will not affect the validity of the guarantee bond and will not relieve the surety or sureties of said bond. All extra work shall be executed under conditions of the original contract.
- b. Except in an emergency endangering life or property, no change shall be made by the contractor except upon receipt of approved change order from the designer, countersigned by the owner

authorizing such change. No claim for adjustments of the contract price shall be valid unless this procedure is followed. Should a claim for extra compensation by the contractor be denied by the designer or the owner, the contractor may pursue his claim in accordance with G.S. 143-135.3.

In the event of emergency endangering life or property, the contractor may be directed to proceed on a time and material basis whereupon the contractor shall proceed and keep accurately on such form as specified by the designer or owner, a correct account of costs together with all proper invoices, payrolls and supporting data. Upon completion of the work the change order will be prepared as outlined under either Method "c(1)" or Method "c(2)" or both.

- c. In determining the values of changes, either additive or deductive, contractors are restricted to the use of the following methods:
1. Where the extra work involved is covered by unit prices quoted in the proposal, or subsequently agreed to by the Contractor, Designer, Owner and State Construction Office the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed of the items involved, except in such cases where a quantity exceeds the estimated quantity allowance in the contract by one hundred percent (100%) or more. In such cases, either party may elect to proceed under subparagraph c (2) herein. If neither party elects to proceed under c (2), then unit prices shall apply.
 2. The contracting parties shall negotiate and agree upon the equitable value of the change prior to issuance of the change order, and the change order shall stipulate the corresponding lump sum adjustment to the contract price.
- d. Under Paragraph "b" and Methods "c(2)" above, the allowances for overhead and profit combined shall be as follows: all contractors (the single contracting entity (prime), his subcontractors(1st tier subs), or their sub-subcontractors (2nd tier subs, 3rd tier subs, etc.) shall be allowed a maximum of 10% on work they each self-perform; the prime contractor shall be allowed a maximum of 5% on contracted work of his 1st tier sub; 1st tier, 2nd tier, 3rd tier, etc. contractors shall be allowed a maximum of 2.5% on the contracted work of their subs. ; Under Method "c(1)", no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method "c(2)" and Paragraph (b) above, the contractor shall include no less than five percent (5%) profit, but no allowances for overhead.
- e. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:
1. The actual costs of materials and supplies incorporated or consumed as part of the work;
 2. The actual costs of labor expended on the project site; labor expended in coordination, change order negotiation, record document maintenance, shop drawing revision or other tasks necessary to the administration of the project are considered overhead whether they take place in an office or on the project site.
 3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of 30 days per year; retirement contributions; worker's compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts; the total of which shall not exceed thirty percent (30%) of the actual costs of labor;
 4. The actual costs of rental for tools, excluding hand tools; equipment; machinery; and temporary facilities required for the work;
 5. The actual costs of premiums for bonds, insurance, permit fees and sales or use taxes related to the work.

Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the owner.

- f. Should concealed conditions be encountered in the performance of the work below grade, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the contract documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods. All change orders shall be supported by a unit cost breakdown showing method of arriving at net cost as defined above.
- g. Change orders shall be submitted by the contractor in writing to the owner/designer for review and approval. The contractor will provide such proposal and supporting_data in suitable format. The designer shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the contractor of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within fourteen (14) days after receipt of the contractor's accepted proposal including all supporting documentation required by the designer, the designer shall prepare the change order and forward to the contractor for his signature or otherwise respond, in writing, to the contractor's proposal. Within seven (7) days after receipt of the change order executed_by the contractor, the designer shall, certify the change order by his signature, and forward the change order and all supporting data to the owner for the owner's signature. The owner shall execute the change order, within seven (7) days of receipt.

At the time of signing a change order, the contractor shall be required to certify as follows:

"I certify that my bonding company will be notified forthwith that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety."

- h. A change order, when issued, shall be full compensation, or credit, for the work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the project as a result of the change in the work.
- i. If, during the progress of the work, the owner requests a change order and the contractor's terms are unacceptable, the owner, may require the contractor to perform such work on a time and material basis whereupon the contractor shall proceed and keep accurately on such form as specified by the Designer or owner, a correct account of cost together with all proper invoices, payrolls and supporting data. Upon completion of the work a change order will be prepared with allowances for overhead and profit per paragraph d. above and "net cost" and "cost" per paragraph e. above. Without prejudice, nothing in this paragraph shall preclude the owner from performing or to have performed that portion of the work requested in the change order.

14. ANNULMENT OF CONTRACT

If the contractor fails to begin the work under the contract within the time specified, or the progress of the work is not maintained on schedule, or the work is not completed within the time specified, or fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work, or shall perform the work unsuitably or shall discontinue the prosecution of the work, or if the contractor shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors, or for any other cause whatsoever shall not carry on the work in an acceptable manner, the owner may give notice in writing, sent by certified mail, return receipt requested, to the contractor and his surety (if applicable) of such delay, neglect or default, specifying the same, and if the contractor within a period of seven (7) days after such notice shall not proceed in accordance therewith, then the owner shall, declare this contract in default, and, thereupon, the surety shall promptly take over the work and complete the performance of this contract in the manner and within the time frame specified. In the event the contractor, or the surety (if applicable) shall fail to take over the work to be done under this contract within seven (7) days after being so notified and notify the owner in writing, sent by certified mail, return receipt requested, that he is taking the same over and stating that he will diligently pursue and complete the same, the owner shall have full power and authority, without violating the contract, to take the prosecution of the work out of the hands of said contractor, to appropriate or use any or all

contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement, either by public letting or negotiation, for the completion of said contract according to the terms and provisions thereof or use such other methods as in his opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the owner, together with the costs of completing the work under contract, shall be deducted from any monies due or which may become due said contractor and surety (if applicable). In case the expense so incurred by the owner shall be less than the sum which would have been payable under the contract, if it had been completed by said contractor, then the said contractor and surety (if applicable) shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the contract, then the contractor and the surety (if applicable) shall be liable and shall pay to the owner the amount of said excess.

15. TERMINATION FOR CONVENIENCE

- a. Owner may at any time and for any reason terminate Contractor's services and work at Owner's convenience, after notification to the contractor in writing via certified mail. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.
- b. Upon such termination, Contractor shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement; plus, (2) such other costs actually incurred by Contractor as approved by Owner; (3) plus ten percent (10%) of the cost of the balance of the work to be completed for overhead and profit. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to Contractor prior to the date of the termination of this Agreement. Contractor shall not be entitled to any claim or claim of lien against Owner for any additional compensation or damages in the event of such termination and payment.

16. OWNER'S RIGHT TO DO WORK

If, during the progress of the work or during the period of guarantee, the contractor fails to prosecute the work properly or to perform any provision of the contract, the owner, after seven (7) days' written notice sent by certified mail, return receipt requested, to the contractor from the designer, may perform or have performed that portion of the work. The cost of the work may be deducted from any amounts due or to become due to the contractor, such action and cost of same having been first approved by the designer. Should the cost of such action of the owner exceed the amount due or to become due the contractor, then the contractor or his surety, or both, shall be liable for and shall pay to the owner the amount of said excess.

17. REQUESTS FOR PAYMENT

Contractor shall refer to the Supplemental General Conditions for specific directions on payment schedule, procedures and the name and address where to send applications for payments for this project. It is imperative that invoices be sent only to the above address in order to assure proper and timely delivery and handling.

The Designer/Owner will process all Contractor pay requests as the project progresses. The Contractor shall receive payment within thirty (30) consecutive days after Designer/Owner's approval of each pay request. Payment will only be made for work performed as determined by the Designer/Owner.

Retainage:

- a. Retainage withheld will not exceed 5% at any time.
- b. The same terms apply to general contractor and subcontractors alike.
- c. Following 50% completion of the project no further retainage will be withheld if the contractor/subcontractor has performed their work satisfactorily.
- d. Exceptions:
 1. Owner/Contractor can reinstate retainage if the contractor/subcontractor does not continue to perform satisfactorily.

2. Following 50% completion of the project, the owner is authorized to withhold additional retainage from a subsequent periodic payment if the amount of retainage withheld falls below 2.5%.

Final payment will be made within forty-five (45) consecutive days after acceptance of the work, receipt of marked-up "as-built" drawings and specifications and the submission both of notarized Contractor's affidavit and final pay request. All pay requests shall be submitted to the Designer/Owner for approval.

THE CONTRACTOR'S FINAL PAYMENT AFFIDAVIT SHALL STATE: "THIS IS TO CERTIFY THAT ALL COSTS OF MATERIALS, EQUIPMENT, LABOR, SUBCONTRACTED WORK, AND ALL ELSE ENTERING INTO THE ACCOMPLISHMENT OF THIS CONTRACT, INCLUDING PAYROLLS, HAVE BEEN PAID IN FULL."

18. PAYMENTS WITHHELD

The designer with the approval of the Owner may withhold payment for the following reasons:

- a. Faulty work not corrected.
- b. The unpaid balance on the contract is insufficient to complete the work in the judgment of the designer.
- c. To provide for sufficient contract balance to cover liquidated damages that will be assessed.
- d. The secretary of the Department of Administration may authorize the withholding of payment for the following reasons:
 - i. Claims filed against the contractor or evidence that a claim will be filed.
 - ii. Evidence that subcontractors have not been paid.

When grounds for withholding payments have been removed, payment will be released. Delay of payment due the contractor without cause will make owner liable for payment of interest to the contractor as provided in G.S. 143-134.1. As provided in G.S. 143-134.1(e), the owner shall not be liable for interest on payments withheld by the owner for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the owner or reasonable evidence that a third-party claim will be filed.

19. MINIMUM INSURANCE REQUIREMENTS

The work under this contract shall not commence until the contractor has obtained all required insurance and verifying certificates of insurance have been approved in writing by the owner. These certificates shall document that coverages afforded under the policies will not be cancelled, reduced in amount or coverages eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the owner of such alteration or cancellation. If endorsements are needed to comply with the notification or other requirements of this article copies of the endorsements shall be submitted with the certificates.

a. Worker's Compensation and Employer's Liability

The contractor shall provide and maintain, until final acceptance, workmen's compensation insurance, as required by law, as well as employer's liability coverage with minimum limits of \$100,000.

b. Public Liability and Property Damage

The contractor shall provide and maintain, until final acceptance, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property

damages which may arise from operations under this contract, whether such operations be by the contractor or by any subcontractor, or by anyone directly or indirectly employed by either of them and the minimum limits of such insurance shall be as follows:

Bodily Injury: \$500,000 per occurrence
Property Damage: \$100,000 per occurrence / \$300,000 aggregate

In lieu of limits listed above, a \$500,000 combined single limit shall satisfy both conditions.

Such coverage for completed operations must be maintained for at least two (2) years following final acceptance of the work performed under the contract.

c. **Property Insurance (Builder's Risk/Installation Floater)**

The contractor shall purchase and maintain property insurance until final acceptance, upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the owner, the contractor, the subcontractors and sub-subcontractors in the work and shall insure against the perils of fire, wind, rain, flood, extended coverage, and vandalism and malicious mischief. If the owner is damaged by failure of the contractor to purchase or maintain such insurance, then the contractor shall bear all reasonable costs properly attributable thereto; the contractor shall effect and maintain similar property insurance on portions of the work stored off the site when request for payment per articles so includes such portions.

d. **Deductible**

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the contractor.

e. **Other Insurance**

The contractor shall obtain such additional insurance as may be required by the owner or by the General Statutes of North Carolina including motor vehicle insurance, in amounts not less than the statutory limits.

f. **Proof of Carriage**

The contractor shall furnish the owner with satisfactory proof of carriage of the insurance required before written approval is granted by the owner.

20. ASSIGNMENT

No assignment of the Contractor's obligations or the Contractor's right to receive payment hereunder shall be permitted. However, upon written request approved by the Owner and solely as a convenience to the Contractor, the Owner may: (1) forward the Contractor's payment check directly to any person or entity designated by the Contractor, and (2) include any person or entity designated by Contractor as a joint payee on the Contractor's payment check. In no event shall such approval and action obligate the Owner to anyone other than the Contractor, and the Contractor shall remain responsible for fulfillment of all contract obligations.

21. CLEANING UP AND RESTORATION OF SITE

The Contractor shall keep the sites and surrounding area reasonably free from rubbish at all times and shall remove debris from the site from time to time or when directed to do so by the Owner. Before final inspection and acceptance of the project, the Contractor shall thoroughly clean the sites, and completely prepare the project and site for use by the Owner.

At the end of construction, the contractor shall oversee and implement the restoration of the construction site to its original state. Restoration includes but not limited to walks, drives, lawns, trees and shrubs, corridors, stairs and other elements shall be repaired, cleaned or otherwise restored to their original state.

22. GUARANTEE

The contractor shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve (12) months following the final acceptance of the work and shall replace such defective materials or workmanship without cost to the owner.

Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The contractor shall replace such defective equipment or materials, without cost to the owner, within the manufacturer's warranty period.

Additionally, the owner may bring an action for latent defects caused by the negligence of the contractor, which is hidden or not readily apparent to the owner at the time of beneficial occupancy or final acceptance, whichever occurred first, in accordance with applicable law.

Guarantees for roofing workmanship and materials shall be stipulated in the specifications sections governing such roof, equipment, materials, or supplies.

23. STANDARDS

All manufactured items and/or fabricated assemblies subject to operation under pressure, operation by connection to an electric source, or operation involving a connection to a manufactured, natural, or LP gas source shall be constructed and approved in a manner acceptable to the appropriate State inspector which customarily requires the label or re-examination listing or identification marking of appropriate safety standard organization, such as the American Society of Mechanical Engineers for pressure vessels; the Underwriters Laboratories and/or National Electrical Manufacturers Association for electrically operated assemblies; or the American Gas Association for gas operated assemblies, where such approvals of listings have been established for the type of device offered and furnished. Further, all items furnished shall meet all requirements of the Occupational Safety and Health Act (OSHA), and State and federal requirements relating to clean air and water pollution.

All equipment and products must be independent third party tested and labeled (UL, FM, or CTS) before final connections to Owner services or utilities.

24. TAXES

- a. Federal excise taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3442(3)).
- b. Federal transportation taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3475(b) as amended).
- c. North Carolina sales tax and use tax, as required by law, do apply to materials entering into state work and such costs shall be included in the bid proposal and contract sum.
- d. Local option sales and use taxes, as required by law, do apply to materials entering into state work as applicable and such costs shall be included in the bid proposal and contract sum.
- e. **Accounting Procedures for Refund of County Sales & Use Tax**

Amount of county sales and use tax paid per contractor's statements:

Contractors performing contracts for state agencies shall give the state agency for whose project the property was purchased a signed statement containing the information listed in G.S. 105-164.14(e).

The Department of Revenue has agreed that in lieu of obtaining copies of sales receipts from contractors, an agency may obtain a certified statement as of April 1, 1991 from the contractor setting forth the date, the type of property and the cost of the property purchased from each vendor, the county in which the vendor made the sale and the amount of local sales and use taxes paid thereon. If the property was purchased out-of-state, the county in which the property was

delivered should be listed. The contractor should also be notified that the certified statement may be subject to audit.

In the event the contractors make several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, the counties, and the county sales and use taxes paid thereon.

Name of taxing county: The position of a sale is the retailer's place of business located within a taxing county where the vendor becomes contractually obligated to make the sale. Therefore, it is important that the county tax be reported for the county of sale rather than the county of use.

When property is purchased from out-of-state vendors and the county tax is charged, the county should be identified where delivery is made when reporting the county tax.

Such statement must also include the cost of any tangible personal property withdrawn from the contractor's warehouse stock and the amount of county sales or use tax paid thereon by the contractor.

Similar certified statements by his subcontractors must be obtained by the general contractor and furnished to the claimant.

Contractors are not to include any tax paid on supplies, tools and equipment which they use to perform their contracts and should include only those building materials, supplies, fixtures and equipment which actually become a part of or annexed to the building or structure.

25. EQUAL OPPORTUNITY CLAUSE

The non-discrimination clause contained in Section 202 (Federal) Executive Order 11246, as amended by Executive Order 11375, relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the secretary of Labor, are incorporated herein.

The contractor(s) agree not to discriminate against any employee or applicant for employment because of physical or mental disabilities in regard to any position for which the employee or applicant is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with such disabilities without discrimination based upon their physical or mental disability in all employment practices.

26. MINORITY BUSINESS PARTICIPATION

GS 143-128.2 establishes a ten percent (10%) goal for participation by minority business in total value of work for each State building project.

For construction contracts with a value of less than \$300,000, the Owner has the responsibility to make a good faith effort to solicit minority bids and to attain the goal. The contractor shall include with his bid a completed Identification of HUB Certified/Minority Business Participation form. Contractor shall submit completed Appendix E MBE Documentation for Contract Payments form with final payment request.

For construction contracts with a value of \$300,000 or greater, the contractor shall comply with the document *Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts* including Identification of Minority Business Participation, Affidavits A, B, C, and D, and Appendix E. These forms provided herein are hereby incorporated and made a part of this contract.

27. ACCESS TO PERSONS AND RECORDS

The State Auditor shall have access to persons and records as a result of all contracts or grants entered into by the Owner in accordance with General Statute 147-64.7. The Owner's internal auditors shall also have the right to access and copy the Contractor's records relating to the Contract and Project during the term of the Contract and within two years following the completion of the Project/close-out of the Contract to verify accounts, accuracy, information, calculations and/or data affecting and/or relating to Contractor's requests for payment, requests for

change orders, change orders, claims for extra work, requests for time extensions and related claims for delay/extended general conditions costs, claims for lost productivity, claims for lost efficiency, claims for idle equipment or labor, claims for price/cost escalation, pass-through claims of subcontractors and/or suppliers, and/or any other type of claim for payment or damages from Owner and/or its project representatives.

28. GOVERNING LAWS

This contract is made under and shall be governed by and construed in accordance with the laws of the State of North Carolina. The Contractor shall comply with all applicable federal, State and local laws, statutes, ordinances and regulations including, but not limited to, the Omnibus Transportation Act of 1991 and its implementing regulations.

29. CONTRACTOR EVALUATION

The contractor's overall work performance on the project shall be fairly evaluated in accordance with the State Building Commission policy and procedures, for determining qualifications to bid on future State projects. In addition to final evaluation, an interim evaluation may be prepared during the progress of project. The owner may request the contractor's comments to evaluate the designer.

SUPPLEMENTARY GENERAL CONDITIONS

TIME OF COMPLETION

The Contractor shall commence work to be performed under this Contract on a date to be specified in written order from the Designer/Owner and shall fully complete all work hereunder within 60 consecutive calendar days from the Notice to Proceed. For each day in excess of the above number of days, the Contractor shall pay the Owner the amount of Five Hundred Dollars (\$ 500.00) as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the Owner should the Contractor fail to complete the Work within the time specified.

If the Contractor is delayed at any time in the progress of his work by any act or negligence of the Owner, his employees or his separate contractor, by changes ordered in the work; by abnormal weather conditions; by any causes beyond the Contractor's control or by other causes deemed justifiable by Owner, then the contract time may be reasonably extended in a written order from the Owner upon written request from the contractor within ten days following the cause for delay. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the Owner do not entitle the Contractor to compensable damages for delays. Any contractor claim for compensable damages for delays is limited to delays caused solely by the owner or its agents.

CONSTRUCTION SCHEDULE:

Contractor shall submit Construction Schedule for Architect's approval and shall revise schedule as requested to reflect changes in contract time.

UTILITIES

On-site power and water utilities are available for the Contractor's use.

TOILET FACILITIES

Contractor shall provide and properly maintain temporary toilet facilities for his workers.

SECURITY

Coordinate construction operations with the Facilities Maintenance Supervisor and his staff to comply with on-site security requirements.

USE OF SITE

Normal work hours shall be 7:00 AM through 5:00 PM Monday through Friday. Extended work hours and other site access issues may be negotiated after award of the contract.

NO SMOKING POLICY

Smoking is not permitted on the property of the North Carolina Department of Transportation.

FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS THAT _____

_____ as principal, and _____, as surety, who is duly licensed to act as surety in North Carolina, are held and firmly bound unto the State of North Carolina through the North Carolina Department of Transportation as obligee, in the penal sum of _____ DOLLARS, lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this _____ day of _____, 2022

WHEREAS, the said principal is herewith submitting proposal for and the principal desires to file this bid bond in lieu of making the cash deposit as required by G.S. 143-129.

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION is such, that if the principal shall be awarded the contract for which the bid is submitted and shall execute the contract and give bond for the faithful performance thereof within ten days after the award of same to the principal, then this obligation shall be null and void; but if the principal fails to so execute such contract and give performance bond as required by G.S. 143-129, the surety shall, upon demand, forthwith pay to the obligee the amount set forth in the first paragraph hereof. Provided further, that the bid may be withdrawn as provided by G.S. 143-129.1

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on State construction projects in the amount of \$300,000 or more. The legislation provides that the State shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

SECTION B: DEFINITIONS

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. Minority Business - means a business:
 - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.
3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
4. Public Entity - means State and all public subdivisions and local governmental units.
5. Owner - The State of North Carolina, through the Agency/Institution named in the contract.
6. Designer – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.
7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.
10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

- a. Identify those areas of work for which there are minority businesses, as requested.
- b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
- c. Assist in the determination of technical assistance needed by minority business contractors.

In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:

- (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
- (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the State Construction Office and other public entities.
- (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
- (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
- (5) The HUB Office also oversees the minority business program by:
 - a. Monitoring compliance with the program requirements.
 - b. Assisting in the implementation of training and technical assistance programs.
 - c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
 - d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. State Construction Office

The State Construction Office will be responsible for the following:

- a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
 - (1) Project description and location;
 - (2) Locations where bidding documents may be reviewed;
 - (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
 - (4) Date, time and location of the bid opening.
 - (5) Date, time and location of prebid conference, if scheduled.
- b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.

- c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
- d. Reviewing of minority business requirements at Preconstruction conference.
- e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
- f. Provide statistical data and required reports to the HUB Office.
- g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

3. Owner

Before awarding a contract, owner shall do the following:

- a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
- b. Attend the scheduled prebid conference.
- c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
 - 1. A description of the work for which the bid is being solicited.
 - 2. The date, time, and location where bids are to be submitted.
 - 3. The name of the individual within the owner's organization who will be available to answer questions about the project.
 - 4. Where bid documents may be reviewed.
 - 5. Any special requirements that may exist.
- d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
- e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the State Construction Office.
- g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
- h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
- i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

4. Designer

Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with

corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.

- e. During construction phase of the project, review “MBE Documentation for Contract Payment” – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the State Construction Office.
- f. Make documentation showing evidence of implementation of Designer’s responsibilities available for review by State Construction Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors

Under the single-prime bidding, the separate-prime bidding, construction manager at risk and alternative contracting methods, contractor(s) will:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
 - (1) A description of the work for which the subbid is being solicited.
 - (2) The date, time and location where subbids are to be submitted.
 - (3) The name of the individual within the company who will be available to answer questions about the project.
 - (4) Where bid documents may be reviewed.
 - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.

- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
- f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by State Construction Office and HUB Office, upon request.
- g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
- h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
- i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), “MBE Documentation for Contract Payment” – (Appendix E), for designer’s review.
- j. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, State Construction Office, and the Director of the HUB Office in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.

- k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
- l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities

While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

SECTION 4: DISPUTE PROCEDURES

It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

SECTION 5: These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: www.nc-sco.com

SECTION 6: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: <http://www.nc-sco.com>

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

OR

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- (5) Attending any prebid meetings scheduled by the public owner.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: _____ Approved/Certified By: _____

Name

_____ Title

_____ Signature

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT

Identification of HUB Certified/ Minority Business Participation

I, _____,
(Name of Bidder)

do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

The total value of minority business contracting will be (\$)_____.

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

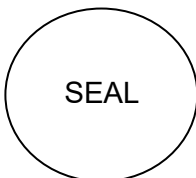
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____, 2022

Notary Public _____

My commission expires _____

State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the contract for the

Window Replacement for NCDMV-State Highway Patrol C&L Building, Raleigh, North Carolina

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type of project and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

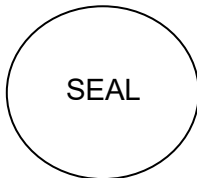
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____, 2022

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
 This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the _____
 (Name of Bidder)

Window Replacement for NCDMV-State Highway Patrol
C&L Building, Raleigh, North Carolina
 (Project Name)

Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

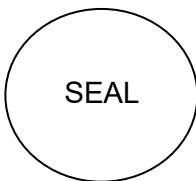
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 2022

Notary Public _____

My commission expires _____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the _____
 (Name of Bidder)

Window Replacement for NCDMV-State Highway Patrol
C&L Building, Raleigh, North Carolina
 (Project Name)

Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

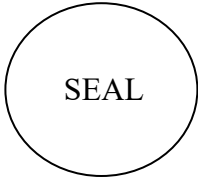
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 2022

Notary Public _____

My commission expires _____

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

APPROVAL OF THE ATTORNEY GENERAL

**CERTIFICATION BY THE OFFICE OF STATE
BUDGET AND MANAGEMENT**

Provision for the payment of money to fall due and payable by the

State of North Carolina through the North Carolina Department of Transportation

under this agreement has been provided for by allocation made and is available for the purpose of carrying out this agreement.

This _____ day of _____, 2022

Signed _____
Budget Officer

STATE OF NORTH CAROLINA
 COUNTY SALES AND USE TAX REPORT
 SUMMARY TOTALS AND CERTIFICATION

CONTRACTOR: _____

Page 1 of _____

PROJECT: _____

FOR PERIOD: _____

	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL ALL COUNTIES
CONTRACTOR						
SUBCONTRACTOR(S)*						
COUNTY TOTAL						

* Attach subcontractor(s) report(s)
 ** Must balance with Detail Sheet(s)

I certify that the above figures do not include any tax paid on supplies, tools and equipment which were used to perform this contract and only includes those building materials, supplies, fixtures and equipment which actually became a part of or annexed to the building or structure. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

This the _____ day of _____, 20_____

Signed

Notary Public

My Commission Expires: _____

Print or Type Name of Above

Seal

NOTE:
 This certified statement may be subject to audit.

**SECTION 01 1000
SUMMARY**

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Window Replacement for NCDMV-State Highway Patrol C&L Building, Raleigh, North Carolina.
- B. Owner's Name: State of North Carolina, through the North Carolina Department of Transportation.
- C. Architect's Name: Facilities Design Unit, NCDOT (Mark D. Gibson, RA).
- D. The Project consists of the following work:
 - 1. Demolition of all existing single-pane steel sash windows, interior sills and stools, and select exterior hollow metal doors and frames;
 - 2. Installation of new Contractor-provided fixed sash aluminum frame windows, storefront, and entrance doors with insulating glass units;
 - 3. Provide new finish hardware at new doors;
 - 4. Prepare new storefront doors and frames for Owner's security devices;
 - 5. Provide new window sills and stools;
 - 6. Make minor repairs to surrounding materials affected by this work as required to match adjacent finishes.
- E. Building Location: 1300 Blue Ridge Road, Raleigh, North Carolina 27607.
- F. Local permits and fees shall be paid by Contractor.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: Single prime contract based on a Lump Sum Price.

1.03 OWNER OCCUPANCY

- A. NCDMV and NCSHP intend to occupy the Project during construction period to the extent possible.

1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
 - 1. No work may take place outside of the designated work area except as indicated or as approved. No project-related operations shall occur beyond the property lines of this NCDOT parcel.
- B. Construction hours: Work shall occur between the hours of 7:00 AM and 5:00 PM Monday through Saturday or as permitted by Owner.

1.05 WORK SEQUENCE

- A. Work Area
 - 1. Identify and cordon off work areas; maintain construction warning devices throughout construction period for worker and public safety. Contractor shall be responsible for securing access to building outside of Owner's regular business hours. Coordinate security requirements with Owner.
- B. Demolition

1. Perform demolition work as required; minimize dust, debris, and noise; remove debris daily from premises; thoroughly clean work area daily, at completion of demolition work, and immediately prior to Final Acceptance.

C. Construction

1. Perform work as specified and as indicated on drawings.
2. Proceed with window demolition and replacement room by room to permit continued occupation of the building to the extent possible. Coordinate schedule with the Owner.
3. At end of construction, clean work area to occupiable condition.
4. Remove all debris from site to acceptable disposal location.

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values within 15 days after date of Owner-Contractor Agreement.
- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
- E. Revise schedule to list approved Change Orders with each Application For Payment.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Forms to be used: AIA G702 and G703.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for materials stored on-site.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- H. Submit each Application for Payment electronically to the Architect.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide data with cover letter electronically. Provide hard copy to Architect if requested. Show application number, date, and line item by number and description.

1.04 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within seven (7) days.

- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.
- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- F. Execution of Change Orders: Architect will log Change Orders into State Construction's Interscope system for approval by the appropriate parties.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Site mobilization meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Contractor's daily reports.
- F. Coordination drawings.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. General Conditions: Dates for applications for payment.
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents.
- D. North Carolina Department of Administration, State Construction Office: State Construction Manual, November, 2016; www.nc-sco.com.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor.
 - 4. Subcontractors.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties to Contract and Architect.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 7. Scheduling.
 - 8. Use of premises by Owner and Contractor.
 - 9. Owner's requirements and occupancy prior to completion.
 - 10. Construction facilities and controls provided by Owner.
 - 11. Temporary utilities provided by Owner.
 - 12. Survey and building layout.
 - 13. Security and housekeeping procedures.
 - 14. Schedules.

15. Application for payment procedures.
 16. Procedures for testing.
 17. Procedures for maintaining record documents.
 18. Requirements for start-up of equipment.
 19. Inspection and acceptance of equipment put into service during construction period.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

- A. Architect will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- B. Attendance Required:
1. Contractor.
 2. Owner.
 3. Architect.
 4. Special Consultants.
 5. Contractor's Superintendent.
 6. Major Subcontractors.
 7. Other parties whose work is to be discussed and/or coordinated.
- C. Agenda:
1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede or will impede planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Maintenance of quality and work standards.
 11. Effect of proposed changes on progress schedule and coordination.
 12. Other business relating to Work.
- D. Architect will record minutes and distribute copies within two days after meeting to Owner, Contractor, SCO monitor, participants, and those affected by decisions made.

3.04 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 calendar days after date established in Notice to Proceed, submit preliminary schedule defining planned operations for the first 60 calendar days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within ten (10) calendar days.
- C. Within twenty (20) calendar days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within ten (10) calendar days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

3.05 DAILY CONSTRUCTION REPORTS

- A. Include only factual information. Do not include personal remarks or opinions regarding operations and/or personnel.
- B. Prepare a daily construction report recording the following information concerning events at Project site and project progress:
 - 1. Date:
 - 2. High and low temperatures, and general weather conditions.
 - 3. List of subcontractors at Project site.
 - 4. Approximate count of personnel at Project site.
 - a. Include a breakdown for Supervisors, Laborers, Journeymen, Equipment Operators, and Helpers.
 - 5. Material deliveries.
 - 6. Safety, environmental, or industrial relations incidents.
 - 7. Meetings and significant decisions.
 - 8. Stoppages, delays, shortages, and losses. Include comparison between scheduled work activities (in Contractor's most recently updated and published schedule) and actual activities. Explain differences, if any. Note days or periods when no work was in progress and explain the reasons why.
 - 9. Meter readings and similar recordings.
 - 10. Emergency procedures.
 - 11. Change Orders received and implemented.
 - 12. Testing and/or inspections performed.
 - 13. List of verbal instruction given by Owner and/or Architect.
 - 14. Signature of Contractor's authorized representative.

3.06 COORDINATION DRAWINGS

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect.

3.07 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for purposes of record documentation described in Section 01 7800 - Closeout Submittals.

3.08 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator for Owner. No action will be taken.

3.09 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Final Acceptance.
- B. Submit Final Correction Punch List for Final Acceptance.
- C. When the following are specified in individual sections, submit them at project closeout:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Bonds.
 - 5. Other types as indicated or required per State Construction. See State Construction Manual.
- D. Submit for Owner's benefit during and after project completion.

3.10 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
 - 1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit the number of copies that Contractor requires, plus two copies that will be retained by Architect.
- B. Documents for Information: Submit two copies.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Contractor unless specifically so stated.
- D. Per Architect's preference, appropriate submittals may be made electronically.

3.11 SUBMITTAL PROCEDURES

- A. Shop Drawing Procedures:
 - 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
 - 2. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- B. Transmit each submittal with a copy of approved submittal form.
- C. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- D. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow fifteen (15) calendar days excluding delivery time to and from the Contractor.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- I. Provide space for Contractor and Architect review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

END OF SECTION

SECTION 01 3216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

- A. Section 01 1000 - Summary.

1.03 REFERENCE STANDARDS

- A. M-H (CPM) - CPM in Construction Management - Project Management with CPM; O'Brien; 2006.

1.04 SUBMITTALS

- A. Within ten (10) calendar days after date of Agreement, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within ten (10) calendar days.
- C. Within twenty (20) calendar days after review of preliminary schedule, submit draft of proposed complete schedule for review.

1.05 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with one year's minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.06 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 22 x 17 inches.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction, including early start, late start, early finish, and late finish dates.
- B. Identify each item by specification section number.
- C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- D. Indicate delivery dates for owner-furnished products.
- E. Coordinate content with schedule of values specified in Section 01 2000 - Price and Payment Procedures.
- F. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.04 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Final Acceptance.
- F. Submit reports required to support recommended changes.

END OF SECTION

**SECTION 01 4000
QUALITY REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Testing agencies and services.
- C. Control of installation.
- D. Tolerances.
- E. Manufacturers' field services.
- F. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- C. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Conformance with Contract Documents.
 - k. When requested by Architect, provide interpretation of results.
 - 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- F. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.

1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- G. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner's information.
 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.04 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform certain specified testing under a separate contract.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

- A. Testing Agency Duties:
 1. Test samples of mixes submitted by Contractor.
 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 3. Perform specified sampling and testing of products in accordance with specified standards.
 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 5. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
 6. Perform additional tests and inspections required by Architect.
 7. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.

2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, testing, and adjustment and balancing of equipment as applicable and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, the Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Utilities.
- B. Telecommunications services.
- C. Sanitary facilities.
- D. Temporary Controls: Barriers and enclosures.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.

1.02 UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power consisting of connection to existing facilities.
 - 2. Water supply, consisting of connection to existing facilities.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services as required at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Internet Connections: Minimum of one; DSL modem or faster.

1.04 SANITARY FACILITIES

- A. Contractor is permitted to use Owner's sanitary facilities. At the Contractor's option, he may provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Contractor shall maintain the facilities he uses daily in clean and sanitary condition.

1.05 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades required by governing authorities for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- D. Provide appropriate and approved enclosures during demolition activities to protect interior spaces from contamination of hazardous materials and from moisture and thermal damage.

1.06 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.07 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with governing authorities and Owner.
- B. Provide and maintain access to fire hydrants, free of obstructions.

- C. Coordinate with Owner temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- E. Areas for construction parking will be available on the property as designated by the Owner.

1.08 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material in safe location unless otherwise approved by the authorities having jurisdiction.
- D. Provide approved equipment and materials for proper containment and disposal of hazardous demolished materials. Dispose of such demolished materials in strict accordance with requirements the North Carolina Health Hazards Control Unit.

1.09 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate ten (10) persons.
- C. Locate offices a minimum distance of 30 feet from existing and new structures.

1.10 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Final Inspection/Acceptance.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Procedures for Owner-supplied products.
- G. Maintenance materials, including extra materials, spare parts, tools etc..

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 – Summary.
- B. Section 01 4000 - Quality Requirements.

1.03 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate anchorage requirements for each condition.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials removed from existing premises unless specifically required or permitted by the Contract Documents.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:
 - 1. Made outside the United States, its territories, Canada, or Mexico, unless specifically permitted by individual specification sections.
 - 2. Made using or containing CFC's or HCFC's.
 - 3. Made of wood from newly cut old growth timber.
 - 4. Containing lead, cadmium, asbestos.
- C. The Architect/Engineer may reject as non-complying such materials and products that do not bear identification satisfactory to the Architect/Engineer as to manufacturer, grade, quality, and other pertinent information.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed after receipt of bids.

- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named not less than ten (10) calendar days prior to receipt of bids.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Architect will consider requests for substitutions only within ten (10) calendar days before receipt of bids.
- B. Substitutions after contract award will be considered when a product, through no fault of the Contractor, becomes unavailable or unsuitable due to regulatory change.
 - 1. Submit request for Substitution for Cause within fourteen (14) calendar days of discovery of need for substitution, but not later than fourteen (14) calendar days prior to time required for review and approval by Architect.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- E. Substitution Submittal Procedure (after contract award):
 - 1. Submit request for substitution for consideration to Architect. Limit each request to one proposed substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 3. Architect will notify Contractor in writing of decision to accept or reject request.

3.02 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.

- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.
- L. In the event of damage, promptly make replacements and repairs to the approval of the Architect/Engineer and at no additional cost to the Owner.
- M. Additional time required to secure replacements and to make repairs will not be considered by the Architect/Engineer to justify an extension in the contract time of completion.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 – Summary.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- E. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.
- B. North Carolina Department of Administration - State Construction Manual: latest edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
- D. Project Record Documents: Accurately record all deviations from the construction documents.

1.06 PROJECT CONDITIONS

- A. Provide water barriers as required to protect building from water intrusion .
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.07 COORDINATION

- A. See Section 01 1000 for occupancy-related requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. ICoordinate completion and clean-up of work of separate sections.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections and indicated in drawing.
- D. Take field measurements before confirming product orders or beginning fabrication to minimize waste due to over-ordering or misfabrication.
- E. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.
- F. Report to Architect substrate conditions detrimental to the integrity of envelope materials or construction of the building or to the permanent and stable anchorage of the new work to the substrate. Do not proceed with work until approval of the Architect is issued.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect at least four (4) calendar days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Match work that has been cut to adjacent work.
 - 4. Repair areas adjacent to cuts to required condition.
 - 5. Repair new work damaged by subsequent work.
 - 6. Remove samples of installed work for testing when requested.
 - 7. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.06 SALVAGE AND RECYCLING

- A. Materials to be demolished and removed from the existing construction shall become the property of the Contractor to be disposed of properly.
- B. The North Carolina Department of Transportation prefers that materials being demolished and removed from the existing construction shall be recycled to the extent possible. No additional costs shall be borne by NCDOT for salvaging or recycling such materials above and beyond the normal costs of normal disposal.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- C. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site in manner compliant with all current laws and regulations.

3.07 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

- E. Protect finished floors and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic from landscaped areas.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum soft surfaces.
- C. Remove all labels that are not permanent.
- D. Clean finish surfaces to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner.

3.10 CLOSEOUT PROCEDURES

- A. Make submittals that are required by State Construction Office and other authorities.
- B. Accompany Architect on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's comprehensive list of items to be completed or corrected.
- C. Notify Architect when work is considered ready for Architect's Preliminary Final inspection.
- D. Submit written certification containing Contractor's Correction Punch List and stating that Contract Documents have been reviewed, that work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Preliminary Final inspection.
- E. Conduct Preliminary Final Inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected, and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List.
- G. Notify Architect when work is considered finally complete and ready for Architect's and State Construction Office's Final Inspection.
- H. Provide documentation to Architect as required by State Construction Office for project close-out.

END OF SECTION

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Instructions to Bidders and General Conditions of the Contract and Supplementary General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit a digital copy of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and comment.
 - 2. Submit a digital copy of completed documents fifteen (15) calendar days prior to Final Inspection. This copy will be reviewed and returned after Final Inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit two sets of revised final documents in final hard copy form within ten (10) days after Final Inspection/Acceptance.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten (10) calendar days after Final Acceptance.
 - 2. Make other submittals within ten (10) calendar days after Date of Final Acceptance, prior to final Application for Payment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.

- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 1. Field changes of dimension and detail.
 2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 1. Product data, with catalog number, size, composition, and color and texture designations.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Additional information as specified in individual product specification sections.
- D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 1. Description of unit or system, and component parts.
 2. Identify function, normal operating characteristics, and limiting conditions.
 3. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- H. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as and identified by the specification sections.

- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor, and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten (10) calendar days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Final Acceptance is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

**SECTION 02 4100
DEMOLITION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 3216 – Construction Progress Schedule.
- C. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

1.04 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of five years of documented experience.

1.05 SUBMITTALS

- A. Provide a written plan to the Architect for the removal and disposal of Asbestos Containing Materials for approval.
 - 1. Provide detailed information regarding materials and methods proposed for temporarily separating the work area from other parts of the building to prevent asbestos contamination.
 - 2. Provide information regarding cleaning work areas after demolition work has been completed.
 - 3. Provide information regarding materials and methods to be used for disposal of demolition materials, including but not limited to bagging materials and the ultimate disposition of demolition materials.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 DEMOLITION

- A. Remove items indicated through proper handling and disposal.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Conduct a pre-construction meeting with the Architect and the Owner to determine the scheduling of work and the means and methods required to conduct the work.
- B. Coordinate demolition work with new work to avoid prolonged exposure of building interiors to exterior humidity and temperatures.
- C. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Provide, erect, and maintain temporary barriers and security devices.
 - 3. Conduct operations to minimize effects on and interference with building structure and occupants.
 - 4. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
- D. Do not begin removal until receipt of notification to proceed from Owner.
- E. Protect existing structures and other elements to remain in place.

1. Provide bracing and shoring where required.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- F. Hazardous Materials:
1. Asbestos Containing Materials have been identified in the glazing material of the existing steel sash windows.
 2. Asbestos Survey Reports are attached to the Project Manual as Appendices A and B.
 3. Confirm removal procedure with North Carolina Health Hazards Control Unit: Telephone: 919-707-5950; www.epi.state.nc.us/epi/asbestos/ahmp.html.
- G. Safety Equipment:
1. Workers handling Asbestos Containing Materials shall use proper Personal Protective Equipment (PPE) as appropriate and necessary for the materials being demolished.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction indicated on drawings is based on casual field observation and existing record documents only.
1. Verify construction is as indicated.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
- C. Remove existing work as indicated and required to accomplish new work.
1. Remove items indicated on drawings.
- D. Protect existing work to remain.
1. Prevent movement of structure. Provide shoring and bracing as required.
 2. Perform cutting neatly to accomplish removal work and as required or specified for installation of new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Patch to match existing adjacent work to remain.
- E. Remove existing storefronts, window sashes, glass, glazing, and frames. Avoid dislodging the window glazing as much as possible. Do not disassemble window sashes. Place demolished components with Asbestos Containing Materials in appropriate bags prominently marked "ASBESTOS" and properly seal containment bags. Transport bagged demolished materials to places of disposal certified by authorities having jurisdiction to receive such materials.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

**SECTION 066510
SOLID SURFACE FABRICATIONS**

PART 1 — GENERAL

1.01 SUMMARY

- A. This Section includes the following horizontal and trim solid surface product types:
 - 1. Interior window sills and stools.

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 085113 - Aluminum Windows: Fixed sash within glazing system.
- C. Section 088000 - Glazing: Glass and glazing accessories.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.

1.04 SUBMITTALS

- A. Product data: Provide manufacturer's product data for the following:
 - 1. Solid surface fabrications.
 - a. Window sills and stools.
 - b. Indicate material composition.
 - c. Provide color charts for Architect's selection.
- B. Shop Drawings: Provide scaled and dimensioned drawings indicating the following:
 - 1. Indicate location of each type of window sill and stool. Indicate window types to which sills and stools are associated.
 - 2. Indicate joints required for long sills and stools.
 - 2. Provide large scale details indicating the configuration of each type of window sill and stool. Details shall be at a minimum scale of one-half (1/2) inch equals twelve (12) inches.
 - 2. Thicknesses of material.
 - 3. Method of attachment to existing substrate and other components required.
- C. Manufacturer's qualification statement.
- D. Installer's qualification statement.

1.05 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
 - 2. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.
Shop that employs skilled workers who custom fabricate products similar to those indicated.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver no components to project site until areas are ready for installation.
- B. Store components indoors prior to installation.
- C. Handle materials to prevent damage to finished surfaces.
 - 1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.07 WARRANTY

- A. Provide manufacturer's warranty against defects in materials.
 - 1. Warranty shall provide material and labor to repair or replace defective materials.
 - 2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.
- B. Manufacturer's warranty period:
 - 1. Ten years from date of substantial completion.

1.08 MAINTENANCE

- A. Provide maintenance requirements as specified by the manufacturer.

PART 2 — PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Subject to compliance with requirements, provide products by one of the following:
 - a. Du Pont Company; Corian®: www.corian.com.
 - b. Lotte Chemical USA; Staron: www.staron.com.
 - c. Wilsonart Engineered Surfaces; Wilsonart Solid Surface: www.wilsonartengineeredsurfaces.com.
- B. Substitutions:
 - 1. See Section 016000 - Product Requirements.

2.02 MATERIALS

- A. Solid polymer components
 - 1. Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.
 - 2. Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.
- B. Thickness: 1/2 inch.

2.03 PERFORMANCE CHARACTERISTICS

- A. Tensile Strength: 6,000 psi per ASTM D 638.
- B. Tensile Modulus: 1.5 x 10⁶ psi per ASTM D 638.
- C. Tensile Elongation: 0.4% minimum per ASTM D 638.
- D. Flexural Strength: 10,000 psi per ASTM D 790.
- E. Flexural Modulus: 1.2 x 10⁶ psi per ASTM D 790.
- F. Hardness: >85 Rockwell "M" Scale per ASTM D 785.
- G. Flammability: Per ASTM E 84, NFPA 255, and UL 723:
 - 1. Flame Spread Index: <25.
 - 2. Smoke Developed Index <25.

2.04 ACCESSORIES

- A. Joint adhesive:
 - 1. Manufacturer's standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.
- B. Sealant:
 - 1. Manufacturer's standard mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

2.05 FACTORY FABRICATION

- A. Shop assembly
 - 1. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed instructions and technical bulletins.
 - 2. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints. a. Reinforce with strip of solid polymer material, 2" wide.
 - 3. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
 - 4. Rout and finish component edges with clean, sharp returns.
 - a. Rout cutouts, radii and contours to template.
 - b. Smooth edges.
 - c. Repair or reject defective and inaccurate work.

PART 3 — EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install components plumb, level, and rigid, scribed to adjacent finishes in accordance with approved shop drawings and product data.
 - 1. Provide product in the largest pieces available.
 - 2. Form field joints using manufacturer's recommended adhesive with joints inconspicuous in finished work.
 - a. Exposed joints/seams shall not be allowed.
 - 3. Reinforce field joints with solid surface strips extending a minimum of 1 inch on each side of the seam with the strip being the same thickness as the top.
 - 4. Cut and finish component edges with clean, sharp returns.
 - 5. Rout radii and contours to template.
 - 6. Anchor securely to substate or other supports.
 - 7. Align adjacent sills and form seams to comply with manufacturer's written recommendations using adhesive in color to match sill.
 - 8. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - 9. Install sills with no more than 1/16-inch sag, bow or other variation from a straight line.

3.03 REPAIR

- A. Repair or replace damaged work which cannot be repaired to architect's satisfaction.

3.04 CLEANING AND PROTECTION

- A. Keep components clean during installation.
- B. Remove excess adhesives, sealants, and other stains.

END OF SECTION

SECTION 076200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings and counterflashings.
- B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2021, with Errata (2022).
- B. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2020.
- C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- F. CDA A4050 - Copper in Architecture - Handbook current edition.
- G. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Samples: Submit two samples, minimum 2 inches by 4 inches in size, illustrating metal finish color.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with three (3) years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Sheet Metal Flashing and Trim Manufacturers:
 - 1. Fairview Architectural LLC; Edgeline: www.fairview-na.com.
 - 2. Americlad Quality Metalcrafts; Americlad Flat Sheets: www.americlad.com
 - 3. Tamlyn; Xtreme Trim: www.tamlyn.com.

4. Substitutions: See Section 016000 - Product Requirements.

2.02 SHEET MATERIALS

- A. Pre-Finished Aluminum: ASTM B209/B209M, 3005 alloy, H12 or H14 temper; 20 gauge, 0.032 inch (1.02 mm) thick; plain finish shop pre-coated with silicone modified polyester coating.
 1. Polyvinylidene Fluoride (PVDF) Coating: Superior performing organic powder coating, AAMA 2605; pretreated metal with two-coat system including primer and color coat with at least 70 percent PVDF coating.
 2. Color: As selected by Architect from manufacturer's full range of colors.

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18-inch (450 mm) long legs; seam for rigidity, seal with sealant.
- F. Fabricate vertical faces of sill flashing with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.

2.04 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Protective Backing Paint: Asphaltic mastic, ASTM D4479 Type I.
- D. Concealed Sealants: Non-curing butyl sealant.
- E. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- F. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify opening substrates are dry, solid, stable, clean, and ready to receive flashing materials.

3.02 INSTALLATION

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted. The color of exposed fasteners shall match flashing metal color.
- B. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- C. Exterior Flashing Receivers: Install in accordance with manufacturer's recommendations, and in proper relationship with adjacent construction, and as follows:
 1. Secure receiver at perimeter of wall opening with adhesives or fasteners.
 2. Place flashing into receiver channel.
- D. Seal metal joints watertight.

3.03 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for field inspection requirements.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

SECTION 079200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag, single-component, gunnable joint sealants.
- B. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants 2018.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems 2016.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2018.
- G. ASTM C1311 - Standard Specification for Solvent Release Sealants 2014.
- H. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants 2018.
- I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints 2019 (Reapproved 2020).

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
- C. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.
- D. Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.
- E. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.
- F. Executed warranty.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Field Adhesion Test Procedures:
 - 1. Allow sealants to fully cure as recommended by manufacturer before testing.

2. Have a copy of the test method document available during tests.
3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.

1.06 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Nonsag Sealants:
 1. Pecora Corporation; 864 NST Low modulus: www.pecora.com.
 2. Sika Corporation; Sikasil WS-290: www.usa.sika.com.
 3. Tremco Commercial Sealants & Waterproofing; Spectrem 3: www.tremcosealants.com.
 4. Substitutions: See Section 016000 - Product Requirements.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between different exposed materials.
 - c. Other joints as indicated.
 2. Do not seal the following types of joints:
 - a. Intentional weep holes in masonry or window sill sections.
 - b. Joints indicated to be treated with manufactured expansion joint cover, or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
- B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.
 1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, noncuring.
- C. Interior Joints: Use nonsag paintable polyurethane sealant, unless otherwise indicated.

2.03 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products with low levels of volatile organic compound (VOC) content.

2.04 NONSAG JOINT SEALANTS

- A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 1. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 2. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer's standard range.

- B. Noncuring Butyl Sealant: Solvent-based, single component, nonsag, nonskinning, nonhardening, nonbleeding; non-vapor permeable; intended for fully concealed applications.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 - 2. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.
- D. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.
 - 1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
 - 2. Notify Architect of date and time that tests will be performed, at least seven days in advance.
 - 3. Record each test on Preinstallation Adhesion Test Log as indicated.
 - 4. If any sample fails, review products and installation procedures, consult manufacturer, or take other measures that are necessary to ensure adhesion; retest in a different location; if unable to obtain satisfactory adhesion, report to Architect.
 - 5. After completion of tests, remove remaining sample material and prepare joints for new sealant installation.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Install bond breaker backing tape where backer rod cannot be used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

- A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION

**SECTION 084313
ALUMINUM-FRAMED STOREFRONTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
- B. Aluminum doors.
- C. Weatherstripping.

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 085113 - Aluminum Windows: Operable sash within glazing system.
- C. Section 087100 - Finish Hardware: Hardware items other than specified in this section.
- D. Section 088000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- D. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- E. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- H. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- I. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).
- J. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
 - 1. Include design engineer's stamp or seal on shop drawings for attachments and anchors.

- D. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- E. Installer's qualification statement.
- F. Specimen warranty.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).
- C). Maintain this minimum temperature during and 48 hours after installation.

1.09 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five-year period after Date of Final Acceptance.
- C. Provide five-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable manufacturers:
 1. Kawneer; Trifab 451: www.kawneer.com
 2. Wausau Window and Wall Systems; T140000 I/O Series Storefront: www.wausauwindow.com.
 3. YKK Architectural Products; YKK YES 45 TU : www.ykkap.com.

2.02 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING

- A. Front-Set Style, Thermally-Broken:
 1. Basis of Design: YKK YES 45 TU
 2. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep (50 mm wide by 114 mm deep).
- B. Substitutions: See Section 016000 - Product Requirements.
 1. For any product not identified as "Basis of Design", submit information as specified for substitutions.

2.03 BASIS OF DESIGN -- SWINGING DOORS

- A. Medium Stile, Insulating Glazing, Thermally-Broken:
 1. Basis of Design: YKK 35XT Megatherm Door.
 2. Stile Dimension: 2-3/8 inches x 3-1/2 inches.
 3. U-value: 0.53.
 4. Bottom rail: Comply with Accessibility requirements.
- B. Other Acceptable Manufacturers:
 1. Kawneer; 350T Insulpour Thermal Entrance, 3 1/2 inch wide stile.
 2. Wausau Window and Wall Systems; Thermal=Block Series Medium Stile.

2.04 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members and related flashings, anchorage and attachment devices.
 - 1. Glazing Rabbet: For 1 inch (25 mm) insulating glazing.
 - 2. Glazing Position: Front-set.
 - 3. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep (50 mm wide by 114 mm deep).
 - 4. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 - 5. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 - 6. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 - 7. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F (95 degrees C) over a 12-hour period without causing detrimental effect to system components, anchorages, and other building elements.
 - 8. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
 - 9. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
- B. Performance Requirements
 - 1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: Comply with requirements of ASCE 7.
 - b. Positive Design Wind Load: 14 lbf/sq ft
 - c. Negative Design Wind Load: 19 lbf/sq ft
 - d. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
 - 2. Air Leakage: 0.06 cfm/sq ft (0.3 L/sec sq m) maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf (75 Pa) pressure difference.
 - 3. Condensation Resistance Factor of Framing: 68 minimum, measured in accordance with AAMA 1503.
 - 4. Overall U-value Including Glazing: 0.40 Btu/(hr sq ft deg F) maximum.

2.05 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
 - 1. Glazing Stops: Flush.
 - 2. Cross-Section: 2 by 4 1/2 inches nominal dimension.
- B. Glazing: See Section 088000.
- C. Swing Doors: Glazed aluminum.
 - 1. Thickness: 1-3/4 inches (43 mm).
 - 2. Top Rail: 4 inches (100 mm) wide.
 - 3. Vertical Stiles: 4-1/2 inches (115 mm) wide.
 - 4. Bottom Rail: Comply with accessibility requirements.
 - 5. Glazing Stops: Square.

6. Finish: Same as storefront.

2.06 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Fasteners: Stainless steel.
- C. Concealed Flashings: Stainless steel, 26 gauge, 0.0187 inch (0.48 mm) minimum thickness.
- D. Sill Flashing Sealant: Elastomeric, silicone or polyurethane, compatible with flashing material.
- E. Sealant for Setting Thresholds: Non-curing butyl type.
- F. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- G. Shop and Touch-Up Primer for Steel Components: Zinc oxide, alkyd, linseed oil primer appropriate for use over hand cleaned steel.

2.07 FINISHES

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils (0.018 mm) thick.

2.08 HARDWARE

- A. For each door, include weatherstripping, sill sweep strip, and threshold.
- B. Other Door Hardware: See Section 087100. Prepare doors and frames for hardware specified.
- C. Prepare doors and frames as required to permit installation of Owner's security devices by others.
- D. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
- E. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.
- F. Threshold: Extruded aluminum, one piece per door opening, ribbed surface; provide on all doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form watertight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Set thresholds in bed of sealant and secure.
- J. Install hardware using templates provided.
 1. See Section 087100 for hardware installation requirements.

- K. Install glass using glazing method required to achieve performance criteria; see Section 088000.
- L. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet (1.5 mm per m) non-cumulative or 0.06 inch per 10 feet (1.5 mm per 3 m), whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch (0.8 mm).

3.04 ADJUSTING

- A. Adjust operating hardware for smooth operation.

3.05 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

**SECTION 085113
ALUMINUM WINDOWS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Extruded aluminum windows with fixed sash.

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealing joints between window frames and adjacent construction.
- B. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- C. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- D. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- E. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2021, with Errata (2022).
- F. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2020.
- G. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- H. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- I. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- J. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- K. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- L. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- M. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).
- N. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference 2015.
- O. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation 2016.
- P. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights 2019c.
- Q. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.
- C. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, anchorage locations, and installation requirements.
- D. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
 - 1. Evidence of AAMA Certification.
 - 2. Evidence of WDMA Certification.
 - 3. Evidence of CSA Certification.
 - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- E. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.
- F. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.
- G. Manufacturer's qualification statement.
- H. Installer's qualification statement.
- I. Specimen warranty.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of AAMA CW-10.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).
- B. Maintain this minimum temperature during and 24 hours after installation of sealants.

1.09 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a five-year period after Date of Substantial Completion.
- C. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with manufacturer.
- D. Manufacturer Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Acceptable Aluminum Windows Manufacturers:
 - 1. Kawneer Company Inc.; 8825TLF Thermal Windows: www.kawneer.com.
 - 2. Wausau Window and Wall Systems; 2250i Invent Energy Efficient Window: www.wausauwindow.com.
 - 3. YKK AP America Inc.; Series YOW 225 TU Thermabond Plus® Fixed Aluminum Window System; www.ykkap.com.
 - 4. Substitutions: See Section 016000 - Product Requirements.

2.02 BASIS OF DESIGN - AW PERFORMANCE CLASS WINDOWS

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 Having Performance Class of AW and Performance Grade at least as high as Specified Design Pressure.
- B. Fixed, Thermally-Broken:
 - 1. Basis Of Design: YKK AP America Inc.; Series YOW 225 TU Thermabond Plus® Fixed Aluminum Window System.
- C. AAMA Designation: AW-100 (Fixed).

2.03 ALUMINUM WINDOWS

- A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with related flashings and anchorage and attachment devices.
 - 1. Frame Depth: 2-1/4 inch (57 mm).
 - 2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
 - 3. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
 - 4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
 - 5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 - 6. Thermal Movement: Design to accommodate thermal movement caused by 180 degrees F (82.2 degrees C) surface temperature without buckling stress on glass, joint seal failure, damaging loads on structural elements, damaging loads on fasteners, reduction in performance or other detrimental effects.
- B. Fixed, Non-Operable Type:
 - 1. Construction: Thermally broken.
 - 2. Glazing: Double; clear; transparent.

2.04 PERFORMANCE REQUIREMENTS

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
 - 1. Performance Class (PC): AW.
 - 2. Performance Grade (PG): 25, with minimum design pressure (DP) of 25.06 psf.
- B. Design Pressure (DP):
 - 3. Positive Design Wind Load: 15 psf.
 - 4. Negative Design Wind Load: 19 psf.
- C. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.

- D. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 12.11 psf.
- E. Air Leakage: 0.1 cfm/sq ft (0.5 L/sec sq m) maximum leakage per unit area of outside window frame dimension when tested at 1.57 psf pressure difference in accordance with ASTM E283/E283M.
- F. Condensation Resistance Factor of Frame: 57 minimum, measured in accordance with AAMA 1503.
- G. Overall Thermal Transmittance (U-value): 0.39, maximum, including glazing, measured on window sizes required for this project.
- H. Acoustic Performance: Minimum outdoor-indoor transmission class (OITC) rating of 32, when tested in accordance with ASTM E90 and ASTM E1332.

2.05 COMPONENTS

- A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.
- B. Frames: 2 1/4 inch wide by 2 3/16 inch deep profile; thermally broken with interior portion of frame insulated from exterior portion; flush glass stops of snap-on type.
- C. Glazing: See Section 088000.
- D. Reinforced Mullion: profile of extruded aluminum with integral reinforcement of shaped steel structural section.
- E. Sills: extruded aluminum; sloped for positive wash; fit under sash leg to 1/2 inch (12 mm) beyond wall face; one piece full width of opening; jamb angles to terminate sill end.
- F. Fasteners: Stainless steel.
- G. Glazing Materials: See Section 088000.
- H. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.
 - 1. See Section 079200 for additional requirements.

2.06 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Concealed Steel Items: Profiled to suit mullion sections; galvanized in accordance with ASTM A123/A123M.
- C. Polyurethane spray foam insulation: High-density closed-cell flame retardant. Minimum R-7 per inch thickness. Compliant with ASTM E-84. Install spray foam insulation at all voids and cavities exposed by window demolition.

2.07 FINISHES

- A. A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils (0.018 mm) thick.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that the existing window and all appurtenances have been removed.
- B. Verify that voids and cavities exposed at masonry opening jambs and sills are completely sealed with spray foam insulation.
- C. Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows.

3.02 PRIME WINDOW INSTALLATION

- A. Install windows in accordance with manufacturer's instructions.

- B. Install window assembly in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
- C. Install bent plates where required. Paint surfaces of aluminum bent plates in contact with masonry with bituminous paint. Securely attach to substrates.
- D. Install sheet metal jamb and sill flashings accurately and securely to substrates of masonry openings. Provide full beds of mastic on all overlapping surfaces. Join separate metal flashing components tightly with rivets. Secure sheet metal flashing window surrounds to opening substrates with fasteners that will be hidden by aluminum window frames where possible. Provide continuous sealant beads at hemmed edges to masonry.
- E. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- F. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- G. Set sill members and sill flashing in continuous bead of sealant.
- H. Install glass in accordance with requirements; see Section 088000.

3.03 TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft (1.5 mm/m) non-cumulative or 1/8 inches per 10 ft (3 mm/3 m), whichever is less.

3.04 CLEANING

- A. Remove protective material from factory finished aluminum surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Do not remove labels identifying glass type.

END OF SECTION

**SECTION 087100
FINISH HARDWARE**

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Acceptable Designs: Specified products and their manufacturers establish acceptable design, material, type, grade, size, function, and finish of hardware items required. Do not substitute other products, except with Architect's and Owner's acceptance.
- B. Manufacturer: Obtain each kind of hardware - latch, locksets, hinges, closers, etc. - from only one manufacturer, although several may be indicated as offering products complying with the manufacturer's requirements.
- C. Supplier: The hardware supplier shall be a full member of the Society of Architectural Hardware Consultants and shall be available during normal working hours during the course of the project for hardware consultation to the Owner, Architect, and Contractor.

1.02 SUBMITTALS

- A. Product Data: Submit in accordance with the requirements of Section 01300. Include installation and maintenance instructions for operating parts and finish. Transmit copy of applicable data to Installer.
- B. Certificates: Any hardware that is furnished other than that scheduled on the drawings shall have manufacturer's certificates certifying that the hardware meets this specification submitting the hardware shop drawings.
- C. Hardware Schedule: Submit final hardware schedule in the manner and format indicated below. Hardware schedules are intended for coordination of work.
 - 1. Organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening, including:
 - a. Type, style, function, size and finish of each hardware item.
 - b. Name and manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of hard set cross-referenced to indications on Drawings both of floor plans and in door and frame schedule.
 - e. Explanation of all abbreviations, symbols, code, etc. contained in schedule.
 - f. Mounting locations for hardware.
 - g. Door and frame sizes and materials.
 - 2. Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work which is critical in the project construction schedule.
 - 3. Include product data, samples, shop drawings of other work affected by builder's hardware, and other information essential to the coordinated review of hardware schedule.

4. Templates: Furnish for the installation of all hardware and to the manufacturer of related equipment for his preparation of that equipment for all hardware that must be attached thereto. Templates shall also be furnished to the manufacturer of wood doors for use on all wood doors that are factory fitting and factory machined for hardware.

D. Keying: Provide for keying by Owner under separate contract.

1.03 JOB CONDITIONS:

- A. Coordinate hardware with other work. Tag each item or package separately with identification related to the final hardware schedule. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security, and similar requirements indicated as necessary for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper location as determined for installation.
- B. Packing and Marking: Package each item of hardware separately in individual containers, complete with necessary screws, keys, instructions and installation templates for spotting mortising tools. Mark each container with item's number corresponding to number shown on hardware supplier's schedule and properly tag each cylinder's key.
- C. Provide secure lock-up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items, which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation.
- D. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check the shop drawings of such other work to confirm that adequate provisions are made for the proper installation of hardware.
- E. The Contractor shall turn over to the owner, after completion of the work, all tools, wrenches and templates that come packaged with the hardware for the Owner's use in servicing the hardware.

PART 2 - PRODUCTS

2.01 PRODUCTS:

- A. Acceptable Manufacturers:
 1. Hinges: Hager, Best, Mckinney
 2. Continuous Gear Hinges: ABH, Best, NGP
 3. Cylinders: Best (no substitution)
 4. Door Closers: Dorma 8900, LCN 4040, Norton 7500
 5. Locks, Latches: Best, Schlage, Sargent
(Owner's preferred alternate for Best "no substitution")
 6. Silencers, Stops & Flush Bolts: Baldwin, Burns, Trimco
 7. Kick Plates, & Misc.: Baldwin, Burns, Trimco
 8. Weatherstrip: National Guard, Reese, Zero
 9. Push/Pulls: Baldwin, Burns, Trimco
 10. Exit Devices: Dorma, Sargent, Von Duprin
(Owner's preferred alternate for Sargent)

11. Thresholds: National Guard, Reese, Zero
12. Overhead Stops/holders: ABH, Rixson, Sargent
13. Electronics: Best, SDC, Stanley – coordinate with Owner's equipment.
14. Auto Operators: Dormakaba, LCN

2.02 MATERIALS, FABRICATION, AND FINISHES:

A. General:

1. Manufacturer's Name Plate: Do not use products which have manufacturer's name or trade name displayed in a visible location except in conjunction with required UL labels.
2. Unless otherwise noted, exposed hardware items shall receive satin stainless steel finish.
3. Furnish screws of type as required for substrates indicated with each hardware item. Finish exposed screws to match the hardware finish or, if exposed in surfaces of other work, to match the finish of such other work as closely as possible.
4. Unless otherwise noted, provide concealed fasteners for hardware units that are exposed when door is closed. Where fasteners must remain exposed when door is closed. Where fasteners must remain exposed, provide vandal resistant fasteners.
5. Finish shall be as scheduled. Dull Chrome [US26D], Dull Stainless Steel [US32D] Aluminum Lacquer [AL], Extruded Aluminum [Alum] and Prime Coat [USP] as listed.
6. Tools for maintenance: Furnish a complete set of specialized tools as needed for Owner's continued adjustment, maintenance and removal and replacement of builder's hardware.
7. Hardware Operation: Force required to activate door hardware shall be not greater than 5 lbf.
8. Door Opening Force: Maximum force for pushing or pulling open a door shall comply with this paragraph. For hinged doors the force shall be applied perpendicular to the door at the door opener or 30 inches from the hinged side whichever is farther from the hinge.
 - a. Exterior hinged doors shall not exceed 8.5 lbf. Slight increases in opening force shall be allowed where 8.5 lbf. is insufficient to compensate for air pressure differentials.
 - b. Interior hinged doors shall not exceed 5.0 lbf.
 - c. Fire doors shall be adjusted to meet the minimum opening force permitted by governing fire safety standards.

B. Hinges:

1. Provide template-produced hinges complying with ANSI A156.1.
2. Provide stainless steel pins, non-removable type for exterior doors and non-rising types for interior doors. Pins shall have flat button ends finished to match hinge leaves.
3. Hinges shall be full-mortised, 4½" x 4½" unless otherwise noted; five knuckle ball bearing type, heavy duty rated.

C. Keys and Keying:

1. All cylinders/Cores shall be Best 7-pin interchangeable cores and keyed into the existing factory registered Grand Master Key System.
2. All keying must be approved by the NCDOT Lock Shop, during a keying conference, before cylinders/locks are ordered. A "key schedule" will be determined at this time. Three keys shall be supplied with each core combination.
3. The exterior locksets and exit devices shall be provided with construction key cores. Construction keyed cores are to be replaced with "permanent" cores in the presence of Owner and turn over all building keys.
4. Owner shall provide and install permanent cores at Final Acceptance.
5. All keys shall be stamped with appropriate key symbols and "DO NOT DUPLICATE." No biting numbers are to be stamped on the key.
6. Hardware Supplier shall supply both a Best IMPKSW-2 code import with each new project.

D. Locksets and Latchsets:

1. Base Specification: Best Access Systems components as listed.
2. Locksets and latchsets of other acceptable manufacturers must conform to the requirements of Subparagraphs 3 and 4.
3. Mortise Type:
 - a. Locksets and latchsets shall be heavy duty mortise type with hinged, anti-friction, $\frac{3}{4}$ inch throw latchbolt with anti-friction piece made of self-lubricated stainless steel. Functions and design as indicated in the hardware groups. Deadbolt functions shall be one-inch projection stainless steel construction. Both deadbolt and latchbolt shall extend into lock case a minimum of $\frac{3}{8}$ inch when fully extended.
 - b. Levers shall be 14H design.
 - c. Furnish locksets and latchsets with sufficient strike lip to protect door trim.
 - d. Provide locksets with Best 7 pin interchangeable core cylinders. All mortise cylinders shall have a concealed internal set screw for securing the cylinder to the lockset. The internal set screw shall be accessible only by removing the core from the cylinder body.
 - e. All mortise locksets and latchsets shall conform to ANSI A156.13, Series 1000, Operational Grade 1 and be listed by UL.
 - f. Locksets shall fit ANSI A115.1 door preparation.
 - g. Locksets and latchsets shall have self-aligning through-bolted trim.
 - h. Auxiliary deadlatch shall be made of one-piece stainless steel, permanently lubricated.
 - i. Lever handles shall be of forged or cast brass, bronze or stainless steel construction and conform to ANSI A117.1. Levers, which contain a hollow cavity, are not acceptable.

- E. Exit Devices: Exit devices shall be as scheduled with no substitutes accepted. Exit devices shall comply with ANSI Standard 156.3 Grade 1 modified as follows:

1. The devices shall be "touchpad" type and include sound reduction dampening for both depression and extension of the touchpad. The touchpad shall extend a minimum of 1/2 of the door width.
 2. Devices should have a 1/4" gap between the face of the door and the touchbar unit eliminating the need for shims or cutting away the glass moulding.
 3. Lock stile chassis shall be investment cast steel. Stamped steel units will not be accepted. All device latchbolts shall be stainless steel and shall be deadlocking type.
 4. Device strikes shall be investment cast stainless steel.
 5. Device end cap shall be all metal and secured with bracket that completely inserts into device housing. Mounting bracket shall interlock both at the touchbar channel and hinge side filler to prevent end cap "peel-back".
 6. All outside device trim shall be cast or forged brass full escutcheon. Lever trim shall be "vandal resistant" with substantial resistance to rotation when locked. Lever shall return to home position when released.
 7. Device housing and all exposed surfaces of the device shall be manufactured from Brass, Bronze or Stainless Steel.
 8. Devices must be non-handed and convertible from one function to another in the field. .
 9. Device shall be secured to the door with sex bolts and through bolting at both ends.
 10. All devices shall be UL approved for all types and functions indicated in the Hardware Schedule.
 11. Devices shall have published five-year warranty.
 12. All exit devices shall be by the same manufacturer.
- F. Closers: Shall be as scheduled with no substitutes accepted. Closers shall comply with ANSI Standard A156.4 Grade 1 modified as follows:
1. Closer shall be non-handed and have adjustable spring power range from size 1 to 6 plus 50% (ANSI PT-4C).
 2. Closer shall have R14 high silicone aluminum alloy cylinder body with 1 1/2" diameter steel piston.
 3. Closer shall have 3 hydraulic adjustments to control backcheck, closing and latching speeds. Adjustment shall be by means of non-critical "v-slot" regulating valves. Closer shall not incorporate pressure relief valves on the opening or closing cycle.
 4. Closer shall have hydraulic fluid with a consistent viscosity range of no less than 0 to 100 degrees Fahrenheit to eliminate seasonal adjustment.
 5. Closer shall be U.L. Listed and meet positive pressure testing requirements of UL10C and UBC 7-2.
 6. Closers shall have forged main arms. Parallel mounted closers shall have Extra Duty (EDA) arm incorporating forged main and forearms, and a cast mounting shoe.
 7. Closer shall have thirty-year warranty.
- G. Overhead Stops/holders: Shall be as scheduled.
1. Units shall have metal/plated end plugs.

2. Units mounting screws shall be designed so that they go through housing and end plug.
 3. Units shall have metal slide.
 4. All stops shall be by same manufacturer.
- H. Silencers, Stops & Flush Bolts: Shall be as scheduled.
1. Silencers: Provide plug-type [not adhered type] silencers in all metal door frames unless continuous bumper-type weather-stripping is shown or specified. Provide 3 silencer units in door frames.
 2. All Stops (wall and floor) shall be by the same manufacturer.
 3. Flush bolts shall have 3/4" throw with 2" vertical adjustment. Shall have override feature and stainless steel cams and rubplates. All flush bolts shall be by the same manufacturer.
- I. Door Stripping and Seals: Unless otherwise indicated, provide full-length weather-stripping at each edge of every exterior swing door leaf. All weather-stripping to be by same manufacturer.
- J. Thresholds: Extruded aluminum, smooth commercial mill finish, grooved tread, 4" minimum tread by full door width. Thickness of threshold shall be 0.5" at primary tread surfaces, 0.1875" for secondary tread surfaces, and 0.125" for concealed flanges and legs.

2.3 SCHEDULE OF HARDWARE

Hardware Set #1 – Doors# 101, 102

Each to have:

1 ea. Continuous Hinge	A110HD x EPT x Clear	ABH
1 ea. Power Transfer	EPT-12C	PHI
1 ea. Exit Device	8800 x OP03 x US32D	SGT
1 ea. Cylinder	Rim	BES
1 ea. Closer	8916-SDS-BSHD-NFHD-689	DOR
1 ea. Stop	1209	TRM
1 ea. Threshold	8413	NGP
1 set Weatherstrip	A625A	NGP
1 ea. Door Bottom	600A	NGP
1 ea. Power Supply	PS610RF	DOR
1 ea. Door Position Switch	MC4	SDC
1 ea. Card Reader	By Others	

MANUFACTURER'S ABBREVIATIONS:

ABH	ABH MANUFACTURING
BES	BEST ACCESS SYSTEMS
DOR	DORMA
NGP	NATIONAL GUARD PRODUCTS
PHI	PRECISION HARDWARE
SDC	SECURITY DOOR CONTROLS
SGT	SARGENT
TRM	TRIMCO MANUFACTURING

PART 3 – EXECUTION

3.01 INSTALLATION

- A. General: Apply hardware in accordance with templates and manufacturer's instructions; mortise and fit accurately; apply securely and adjust carefully.
1. All hardware and cylinders shall be installed by the hardware supplier. Final adjustments of all hardware shall be performed prior to Final Acceptance. Installation shall be performed by the hardware supplier using personnel experienced in the installation of commercial hardware. Personnel shall have a minimum of 5 years of documented experience doing this type of work.
 2. Mount hardware units at heights recommended in "Recommended Locations for Builders Hardware" by DHI, except where shown otherwise on drawings.
 3. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Do not install surface mounted items until finishes have been completed on the substrate.
 4. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
 5. Exercise care not to damage work when applying hardware. Review shop drawings and Contract Drawings for proper location. Cover door hardware with a heavy cloth until adjacent work is completed. At completion of the work, examine doors and hardware, adjust as required and leave hardware in proper working order, free from defects.
 6. At all times be responsible for the distribution of keys for hardware installed during construction, and cause all keys to be returned prior to Final Acceptance of the building.
- B. Preparation:
1. Do not install finish hardware until the wet trades have been fully completed.
 2. Supplier shall mark each item of hardware for location. Protect markings until each item is installed. If any item of hardware is delivered to the Project not properly marked, return it to the supplier for marking before attempting to install it.
 3. Install and make necessary adjustments for proper working order. Hardware damaged by improper adjustments or abuse will be rejected.
 4. Provide clean, properly sized, and accurately placed mortises and drilled holes for all mortise and surface mounted finish hardware. Use appropriate jigs, templates, and power mortising equipment for the installation of all mortised hardware items.
 5. Metal frames to receive hardware items shall be drilled and tapped accurately.
 6. Coordinate with Owner's security devices and systems.
 7. Removal for Painting:
 - a. Before painters' finish is applied, remove all finish hardware except prime-coated items.

- b. After final paint and finish coats are dry, permanently replace and adjust finish hardware for proper operation.

C. Thresholds:

1. Cut and fit threshold to profile door frames, with mitered corners and hairline joints. Screw thresholds to substrate with No. 10 or larger bronze or stainless steel screws.
2. Set thresholds in a bed of either butyl/rubber sealant or polyisobutylene mastic sealant to completely fill concealed voids and exclude moisture from every source. Do not plug drainage holes or block weeps in masonry or aluminum storefront assemblies. Remove excess sealant.

- D. Weatherstrip: Accurately install weatherstrip to the door and/or frames where scheduled using proper type flush fasteners spaced not over 18" o.c. Installed work shall make continuous contact with the abutting surfaces and shall function for use intended. Adjust seals as required.

- E. Mounting Heights: Comply with accessibility requirements.

3.2 ADJUST AND CLEAN:

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Lubricate moving parts with type lubricant recommended by manufacturer, e.g. graphite-type if no other recommended. Replace units that cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.
- B. Upon completion of the work and before Final Acceptance demonstrate that all hardware is in satisfactory working order, that all keys fit in their respective locks, and upon acceptance of the work, tag and deliver all keys to the Owner.
- C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy and make a final check and adjustment of all hardware items in such space or area. Clean and re-lubricate operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- D. Instruct Owner's personnel in proper adjustment and maintenance of hardware and hardware finish during the final adjustment of hardware.

END OF SECTION

**SECTION 088000
GLAZING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulating glass units.
- B. Coatings.
- C. Tinting

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealants for other than glazing purposes.
- B. Section 084313 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.
- C. Section 085113 - Aluminum Windows: Glazing provided by window manufacturer.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings – Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers 2005 (Reapproved 2019).
- E. ASTM C1036 - Standard Specification for Flat Glass 2021.
- F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- G. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a.
- H. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres 2020.
- I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.
- J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019.
- K. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2020.
- L. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2020.
- M. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data on Insulating Glass Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Samples: Submit two samples 12 inches by 12 inches in size of glass units.
- E. Manufacturer's qualification statement.
- F. Installer's qualification statement.
- G. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Provide certified glass products through ANSI accredited certifications that include plant audits

- and independent laboratory performance testing.
1. Insulating Glass Certification Council (IGCC).
 2. Safety Glazing Certification Council (SGCC).
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.
- D. Provide company, field supervisors, and installers that hold active ANSI accredited certifications in appropriate categories for work specified.
1. North American Contractor Certification (NACC) for glazing contractors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Glass Manufacturers:
1. Guardian Glass, LLC: www.guardianglass.com.
 2. Pilkington North America Inc: www.pilkington.com.
 3. Viracon, Inc: www.viracon.com.
 4. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com.
 5. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
- B. Design Pressure: Calculated in accordance with ASCE 7.
- C. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
- E. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
- E. Glass thicknesses listed are minimum.
- F. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
- G. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.02 GLASS MATERIALS

- A. Float Glass: Provide float glass-based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
 2. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
 3. Tinted Type: ASTM C1036, Class 2 - Tinted, Quality - Q3, with color and performance characteristics as indicated.

2.03 INSULATING GLASS UNITS

- A. Manufacturers:
1. Guardian Glass, LLC: www.guardianglass.com.
 2. Pilkington North America Inc: www.pilkington.com.
 3. Viracon, Apogee Enterprises, Inc: www.viracon.com.
 4. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com.
 5. Substitutions: See Section 016000 - Product Requirements.
- B. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.
- C. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.

2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV.
 3. Spacer Color: Black.
 4. Edge Seal: Color: Black.
 5. Purge interpane space with dry air, hermetically sealed.
 6. Basis of Design: Vitro Architectural Glass;
- D. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
 2. Space between lites filled with air.
 3. Outboard Lite: Fully tempered float glass, 1/4 inch (6.4 mm) thick, minimum.
 - a. Tint: Azuria.
 - b. Coating: Low-E (passive type), on #2 surface: Solarban 60.
 4. Metal edge spacer.
 5. Inboard Lite: Fully tempered float glass, 1/4 inch (6.4 mm) thick, minimum.
 - a. Tint: Clear.
 6. Total Thickness: 1 inch (25.4 mm).
 7. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.27, nominal.
 8. Visible Light Transmittance (VLT): 54 percent, nominal.
 9. Shading Coefficient: 0.32, nominal.
 10. Solar Heat Gain Coefficient (SHGC): 0.28, nominal.
 11. Visible Light Reflectance, Outside: 8.0 percent, nominal.
 12. Glazing Method: Dry glazing method, gasket glazing.
- E. Type IG-2 - Insulating Glass Units: Vision glass, double glazed.
1. Applications:
 - a. Glazed lites in exterior windows.
 - b. Other locations permitted by applicable federal, state, and local codes and regulations.
 2. Space between lites filled with air.
 3. Outboard Lite: Fully tempered float glass, 1/4 inch (6.4 mm) thick, minimum.
 - a. Tint: Azuria.
 - b. Coating: Low-E (passive type), on #2 surface: Solarban 60.
 - c. Metal edge spacer.
 4. Inboard Lite: Fully tempered float glass, 1/4 inch (6.4 mm) thick, minimum.
 - a. Tint: Clear.
 5. Total Thickness: 5/8 inch (15.9mm).
 6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.27, nominal.
 7. Visible Light Transmittance (VLT): 54 percent, nominal.
 8. Shading Coefficient: 0.32, nominal.
 9. Solar Heat Gain Coefficient (SHGC): 0.28, nominal.
 10. Visible Light Reflectance: 8.0 percent, nominal.
 11. Glazing Method: Dry glazing method, gasket glazing.

2.04 ACCESSORIES

- A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.
- B. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including size, squareness, and offsets at corners.
- B. Verify that the minimum required face and edge clearances are being provided.
- C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may

Window Replacement for

NCDMV-NCSHP C&L Building
Raleigh, NC

088000 - 3

Glazing

impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

- D. Verify that sealing between joints of glass framing members has been completed effectively.
- E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
- C. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
- D. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.
- E. Glazing units shall be set in their frames such that permanent labels indicating glass type are easily visible.

3.05 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.

3.06 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Final Acceptance in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Final Acceptance.

END OF SECTION

June 24, 2022

North Carolina Department of Transportation - Facilities Maintenance Unit
1300 Blue Ridge Road
Raleigh, NC 27699

CLIENT PROJECT: Asbestos Misc.
CEI LAB CODE: A227143

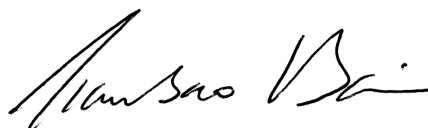
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on June 22, 2022. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director



CEI

ASBESTOS ANALYTICAL REPORT

By: Polarized Light Microscopy

Prepared for

North Carolina Department of Transportation - Facilities

CLIENT PROJECT: Asbestos Misc.

LAB CODE: A227143

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 06/24/22

TOTAL SAMPLES ANALYZED: 1

SAMPLES >1% ASBESTOS: 1

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Asbestos Misc.

LAB CODE: A227143

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A227143.1	White, Gray	Glazing	Chrysotile 2%

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: North Carolina Department of Transportation - Facilities
 Maintenance Unit
 1300 Blue Ridge Road
 Raleigh, NC 27699

Lab Code: A227143
Date Received: 06-22-22
Date Analyzed: 06-24-22
Date Reported: 06-24-22

Project: Asbestos Misc.

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID	Lab	Lab	NON-ASBESTOS COMPONENTS		ASBESTOS
Lab ID	Description	Attributes	Fibrous	Non-Fibrous	%
1	Glazing	Heterogeneous	3%	Paint	2% Chrysotile
A227143.1		White, Gray	50%	Binder	
		Fibrous	45%	Calc Carb	
		Bound			

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*


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Information provided by customer includes customer sample ID and sample description.

ANALYST: _____


Greg Ruff

APPROVED BY: _____


Tianbao Bai, Ph.D., CIH
Laboratory Director





EMSL Analytical, Inc.

2500 Gateway Centre Blvd., Suite 600 Morrisville, NC 27560

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<http://www.EMSL.com> / raleighlab@emsl.com

EMSL Order: 292206361

Customer ID: CCWX42

Customer PO:

APPENDIX B

Project ID:

Attention: Jesse Banks
Carolina Construction Worx, LLC
2128 Old Milburnie Road
Raleigh, NC 27604

Phone: (919) 427-1402

Fax:

Received Date: 08/01/2022 11:06 AM

Analysis Date: 08/01/2022

Collected Date: 07/27/2022

Project: 1300 Blue Ridge

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1 <small>292206361-0001</small> <i>Sample contains coating only</i>	Window Glazing	Tan/Variou Non-Fibrous Homogeneous	<1% Cellulose	2% Ca Carbonate 98% Non-fibrous (Other)	None Detected
2 <small>292206361-0002</small>	Window Glazing	Gray Fibrous Homogeneous		20% Ca Carbonate 78% Non-fibrous (Other)	2% Chrysotile
3 <small>292206361-0003</small> <i>Sample contains coating only</i>	Window Glazing	Gray/Tan Non-Fibrous Homogeneous		2% Ca Carbonate 98% Non-fibrous (Other)	None Detected
4 <small>292206361-0004</small>	Window Glazing	Various/Beige Fibrous Homogeneous	2% Wollastonite	15% Ca Carbonate 81% Non-fibrous (Other)	2% Chrysotile
5 <small>292206361-0005</small>	Window Glazing	Various/Beige Fibrous Homogeneous		15% Ca Carbonate 83% Non-fibrous (Other)	2% Chrysotile
5 <small>292206361-0006</small> <i>Sample bag labeled 1300 BR Window Glaze # 5</i>	Window Glazing	Various/Beige Fibrous Homogeneous	2% Wollastonite	15% Ca Carbonate 81% Non-fibrous (Other)	2% Chrysotile

Analyst(s)

Patrick Yarnell (3)

Roxsee Stover (3)

Billy Barnes, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Morrisville, NC NVLAP Lab Code 200671-0, VA 3333 000278, WVA LT000296

Initial report from: 08/01/2022 12:30:30