ROANOKE

P R O J E C T M A N U A L

WEST END COMMERCIAL FACADE IMPROVEMENTS
ROANOKE, VIRGINIA

Invitation to Bid No. 16-07-20

Issue Date: February 29, 2016
Opening Date: March 22, 2016

Issued By:

Purchasing Division
Monica Cole, Senior Buyer
215 Church Avenue, S.W., Room 202
Roanoke, Virginia 24011
(540) 853-2871

CITY OF ROANOKE, VIRGINIA

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INVITATION TO BID

CITY OF ROANOKE, VIRGINIA

Sealed Bids for:

WEST END COMMERCIAL FACADE IMPROVEMENTS

ROANOKE, VIRGINIA

The required Work will generally consist of façade improvements to three properties within the City of Roanoke and associated Work, as more particularly described herein. The properties are as follows: 312 13th Street, S.W.; 1201 Patterson Avenue, S.W.; and 631 Campbell Avenue, S.W.

INVITATION TO BID NO. 16-07-20

Sealed bids will be received by the City of Roanoke by the City of Roanoke Purchasing Division, Noel C. Taylor Municipal Building, 215 Church Avenue, S.W., Room 202, Roanoke, Virginia 24011, at or before 2:00 p.m., local time, on March 22, 2016, at which time all bids received will be publicly opened and read. Bids received after 2:00 p.m. will not be accepted or considered. The time of receipt shall be determined by the time clock stamp in the Purchasing Office, or if it is not working, such time shall be determined by the Purchasing official who is to open the bids. This project is generally described as set forth above.

If the Noel C. Taylor Municipal Building is closed for business at the time scheduled for the proposal opening, the sealed proposal will be accepted and opened on the next business day of the City, at the originally scheduled hour.

The Instructions to Bidders, plans, specifications, the Contract, and other Contract Documents are incorporated herein by reference. Copies of these items may be examined during business hours in the Purchasing Division, Noel C. Taylor Municipal Building, 215 Church Avenue, S.W., Room 202, Roanoke, Virginia 24011 (Phone: 540-853-2871). Bidders are cautioned to review bid documents thoroughly before submitting a bid. Copies of the documents may be downloaded from the City's Vendor Self Service (VSS) at https://VSS.roanokeva.gov as well as the Current Bids/RFP Requests tab on the Purchasing Division's web page at www.roanokeva.gov/purchasing. . The City will not be responsible for documents obtained from any other source.

All Contract Documents prepared and/or furnished by the City shall be the exclusive property of the City of Roanoke, Virginia, and shall not be used for any other project(s).

Each bidder is solely responsible for ensuring that such bidder has the current complete version of the Bid Documents prepared for the project, including any addenda issued by the City, before submitting a bid.

A non-mandatory pre-bid conference will be conducted on March 10, 2016, at 11:00 a.m., local time, at 215 Church Avenue, SW, Room 350, Roanoke, Virginia 24011, in the Engineering Conference Room. It is strongly recommended that Bidders attend this conference.

This Project and the work, services, and materials for such Project are subject to a U.S. Department of Housing and Urban Development Grant Agreement dated July 31, 2013, for Community Development Block Grant (CDBG), together with any special terms and conditions, and various Federal, State, and/or local terms and provisions as set forth therein or referred to therein and in the bid documents and/or any resultant Contract documents. Current Davis-Bacon wage rates apply.

Bidders and all subcontractors are required to comply with all applicable city, state, and federal laws, ordinances, and regulations; and are required to be properly licensed under Sections 54.1-1100, et seq., Code of Virginia (1950), as amended. Bidders shall deposit with their bid a Bid Security executed in the amount and form stipulated in the Instructions to Bidders.

The City expressly reserves the right to cancel this ITB and/or reject any or all bids, to waive any informality or irregularity in the bids received, and to accept a bid from the lowest responsive and responsible bidder which is deemed to be in the best interest of the City.

If an award is made for the item(s) and/or services requested, a notice of award will be made which will be posted to a file in the City's Purchasing Division, Room 202, telephone no. 540-853-2871, and notification of such award will be made available for Public view in the lobby of the Noel C. Taylor Municipal Building, 215 Church Ave., S.W., Roanoke, VA. 24011, as well as, on City's electronic procurement website.

To determine the lowest responsive and responsible bidder who may be awarded a Contract for the Work, the criteria set forth in or requested pursuant to the Instructions to Bidders or in the Bid Documents may be considered.

By submitting a bid, each bidder agrees that this is a solicitation of bids and each bidder agrees to be solely responsible for the cost or expense of its bid and the City shall have no responsibility for such costs or expenses.

If a certain brand, make, item or manufacturer is specifically and exclusively required or called for in the plans, specifications, or other contract documents, then that brand, make, item, or manufacturer shall be used unless otherwise agreed to by the City, in its sole discretion.

If the bid by the lowest responsive and responsible bidder exceeds available funds, the City reserves the right to negotiate with the apparent low bidder pursuant to Section 2.2-

4318 of the Code of Virginia. The conditions and procedures under which such negotiation may be undertaken are set forth in Section 2.2-4318, and Section 14.3 of Instructions to Bidders. Any such negotiated Contract shall be subject to final approval by the City in its sole discretion.

Bids may not be withdrawn for a period of sixty (60) calendar days after the opening of bids unless the bid is substantially lower than the other bids because of a clerical error as defined in Section 2.2 – 4330, of the Code of Virginia (1950), as amended. Pursuant to Section 2.2 - 4330 (B)(1), the bidder shall give notice in writing and shall submit the original work papers with such notice to the City of its claim of right to withdraw the bid within two (2) business days after the opening of bids.

The Successful Bidder shall comply with the Code of Virginia nondiscrimination provisions of Section 2.2-4311 and the Drug-free workplace provisions of Section 2.2-4312.

Pursuant to Code of Virginia, Section 2.2 - 4343.1, be advised that the City of Roanoke does not discriminate against faith-based organizations.

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CITY OF ROANOKE, VIRGINIA

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CITY OF ROANOKE, VIRGINIA

INSTRUCTIONS TO BIDDERS

SECTION 1. DEFINITIONS

Definitions contained in Section 1 of the General Conditions are incorporated herein by reference. The bidder should refer to the General Conditions for definitions used in the Contract Documents. Whenever used in the General Conditions or in the Contract Documents, the following terms have the meanings indicated, which are applicable to both the singular and plural and the male and female gender thereof, and where applicable to any other legal entity such as a corporation, partnership, limited liability company, etc.

The section and paragraph headings are inserted for convenience only.

SECTION 2. EXAMINATION OF SITE AND CONTRACT DOCUMENTS

2.1 Each bidder is responsible for examining carefully the site of the Work and the Contract and Bid Documents relating to the Work. By submitting a bid, the bidder acknowledges and agrees that it has examined and considered the conditions to be encountered at and adjacent to the site, the character, quality, and quantities of work to be performed, the material to be furnished, other requirements of the Contract Documents, and to have waived any claim or objection based thereon. Claims as a result of failure to have done such examination will not be considered by the City. See Section 8 of the General Conditions entitled "Conditions at Site."

2.2 Each bidder shall promptly notify, in writing, the Purchasing Division of any ambiguity, inconsistency, or error which may be discovered upon examination of the Invitation to Bid, any Bid Documents, and/or any related documents.

SECTION 3. CLARIFICATION AND ADDENDA

3.1 **Contact:** Direct contact with any City employee without the permission of the Purchasing Manager or her designated representative, on the subject of this bid, is strictly forbidden. Violation of this Instruction may result in disqualification of Bid.

3.2 **Questions on Contract Documents:** All questions about the meaning or intent of the Contract Documents shall be directed to the Purchasing Division. Questions received less than seven (7) calendar days prior to the date for opening bids may not be answered. Bidders may only rely upon written addenda issued by the Purchasing Division and no other communication or interpretation, whether oral or written, shall have any effect or efficacy.

3.3 **Addenda:** If you download this ITB from the City website and intend to submit a proposal, you should notify Purchasing that you have done so. However, each

Bidder is solely responsible for ensuring that such Bidder has the current, complete version of the ITB documents, including any addenda, before submitting a bid. Receipt by the bidder of such addendum should be acknowledged on the Bid Form and/or addendum. Addenda will be posted on Vendor Self Service (VSS) at https://VSS.roanokeva.gov as well as the Current Bids/RFP Requests tab on the Purchasing Division's web page at www.roanokeva.gov/purchasing. The City is not responsible for any ITB obtained from any source other than the City. Contact Monica Cole, Senior Buyer, by phone at 540-853-2871, or by email at monica.cole@roanokeva.gov.

3.4 Interpretation: All decisions made in good faith by the Purchasing Manager on the meaning or interpretation of the Contract Documents shall be final.

3.5 Bidders Responsibility: All bidders are responsible for ensuring that they have received and examined all addenda that may have been issued before submitting their bid.

If you download this Invitation to Bid from the City website and intend to submit a bid, you should notify Purchasing. The City is not responsible for any Invitation to Bid obtained from any source other than the City. Contact Purchasing by telephone at (540) 853-2871, or by email at monica.cole@roanokeva.gov.

3.6 Quantities: Where the bid documents stipulate a unit price, the quantities of the work and material set forth in the proposal form or on the plans approximately represent the work to be performed and material to be furnished and are for the purpose of comparing the bids on a uniform basis. Payment shall be made to the Contractor only for the actual quantities of work performed or material furnished in accordance with the plans and specifications and it is understood that the quantities may be increased or decreased as provided in the General Conditions without in any way invalidating the bid prices.

SECTION 4. TIME FOR COMPLETION

4.1 Time for Completion: Unless otherwise stated or a specific time period is set forth on the Bid Form, each bidder shall indicate in the appropriate blank the number of consecutive calendar days required by such bidder to substantially complete the specified Work, within one hundred sixty-five (165) consecutive calendar days, with Final Acceptance to be achieved within fifteen (15)consecutive calendar days thereafter. However, no such time period may exceed the number of consecutive calendar days set forth in the Bid Form.

4.2 Weather: The bidder, in preparing and submitting its bid, is required to take into consideration normal weather conditions. Normal weather means a range of weather conditions which might be anticipated, based on weather data for the past ten years. Unusual weather is weather which could not be anticipated based on such data. Normal weather conditions shall be determined from the public historical records available from the National Weather Service. The data sheets to be used shall be for the locality or localities closest to the site of the Work. No additional compensation will be paid to the Contractor because of

unusual weather conditions; however, an extension of time for unusual weather may be considered by the City as indicated in the General Conditions.

4.3 Liquidated Damages: The amounts indicated on the Bid Form as step one and step two liquidated damages as described in the General Conditions (Section 21) shall be due from and paid by the Contractor to the City for each consecutive calendar day of delay in excess of the stated time required to complete the Work, unless modified by Change Order.

SECTION 5. CONTRACTORS' LICENSES, PERMITS, FEES, AND TAXES

5.1 State License: Bidders and all subcontractors are required to comply with all applicable city, state, and federal laws, ordinances, and regulations, including, but not limited to, registration with the Virginia State Corporation Commission if required by law; and are required to be properly licensed in accordance with Sections 54.1-1100, et seq., of the Code of Virginia, which presently requires one to be licensed as a "Class A Contractor" before submitting a bid of One Hundred Twenty Thousand Dollars ($120,000) or more; or to be licensed as a "Class B Contractor" before submitting a bid of Seven Thousand Five Hundred Dollars to One Hundred Twenty Thousand Dollars ($7,500 to $120,000); or to be licensed as a "Class C Contractor" before submitting a bid of One Thousand Dollars to Seven Thousand Five Hundred Dollars ($1,000 to $7,500). There are also cumulative total amounts which can require a certain class of license and bidders should check these requirements as well. Bidders shall show evidence of being properly licensed and supply the documents required in Section 14.4 of these Instructions to Bidders. (See also Section 7 of the General Conditions.)

5.2 Other Licenses, Permits, Fees, and Taxes: Successful Bidder is responsible for paying for all licenses, permits, fees, and taxes applicable to the project. Such charges and fees include, but are not limited to the applicable building permits, mechanical and electrical permits, hauling and dumping of material, and if work performed in the City of Roanoke during a calendar year exceeds Twenty-five Thousand Dollars ($25,000), such bidder will have to possess a City business license and be responsible for paying City of Roanoke business license taxes. See Section 3 of the General Conditions.

5.3 Virginia State Corporation Commission: Each Bidder who is a stock or nonstock corporation, limited liability company, business trust, or a limited partnership or other business entity shall be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if required by law. Each such Bidder shall include in its bid response the Identification Number issued to it by the Virginia State Corporation Commission (SCC) and should list its business entity name as it is listed with the SCC. Any Bidder that is not required to be authorized to transact business in the Commonwealth as a domestic or foreign business entity as required by law shall include in its bid response a statement describing why the Bidder is not required to be so authorized. (See Va. Code Section 2.2-4311.2).

SECTION 6. PREPARATION AND SUBMISSION OF BIDS

6.1 Bid Form: Bids shall be submitted on the Bid Form furnished, or copy thereof, and shall be completed and signed in ink. A copy of the Bid Form is provided in these specifications for the information of bidders only. Except as may be otherwise stated, all blank spaces in the Bid Form should be filled in and under no conditions shall any changes be made in the phraseology of the Bid Form. Erasures or other changes in a bid amount must be explained or noted over the initials of the bidder. Bids containing any conditions, omissions, unexplained erasures, alterations or items not called for in the bid documents, or irregularities of any kind, may be rejected by the City as being incomplete and/or non-responsive. NO CHANGES MADE TO THE BID FIGURES BY NOTATIONS ON THE OUTSIDE OF THE ENVELOPE WILL BE CONSIDERED IN THE REVIEW AND TABULATION OF BIDS OR FOR ANY OTHER PURPOSE.

6.2 Escrow: In accordance with Section 2.2 - 4334, of the Code of Virginia, for bids of $200,000 or more for construction of highways, roads, streets, bridges, parking lots, demolition, clearing, grading, excavating, paving, pile driving, miscellaneous drainage structures, and the installation of water, gas, sewer lines and pumping stations, the Bid Form will include a space for the bidder to indicate an option to use the escrow account procedure in order to have retained funds paid to an escrow agent. Otherwise, unless stated in the Supplemental General Conditions, no escrow will be provided.

6.3 Signatures: Each bid must give the full business address of the bidder and be signed by bidder with its usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the state in which they are incorporated and by the signature and designation of the president or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below each signature. A bid by a person who affixes to his signature the word "President," "Authorized Agent," or other designation without disclosing such principal firm or employer, may be held to be the bid of the individual signing. Satisfactory evidence of the authority of the president or authorized agent signing on behalf of the corporation shall be furnished upon request by the City.

6.4 Bid Amounts: Bidders shall indicate in the appropriate blank spaces on the Bid Form the amounts for the base bid and any alternates, written with ink or typed, in both words and figures. In the event of a discrepancy between the words and figures expressed in the base bid or alternates, the word amount shall govern. Any unit prices for separate items as called for on the Bid Form shall be written with ink or typed in figures in the appropriate blanks.

6.5 NOT USED

6.6 Bid Package Checklist: Bidders shall deposit with their bid the documents or information set forth in the Bid Package Checklist. See Section 16.

SECTION 7. RECEIPT AND OPENING OF BIDS

7.1 Delivery of Bid: It is the responsibility of the bidder to assure that its bid is delivered to the place designated for receipt of bids and prior to the time set for receipt of bids. No bids received after the time designated for receipt of bids will be considered.

7.2 Receipt of Bid: The Bid Form, the Bid Security, and all other documents required to be submitted with the bid shall be enclosed in a sealed opaque envelope and addressed as follows:

Purchasing Division
Noel C. Taylor Municipal Building
215 Church Avenue, S.W., Room 202
Roanoke, Virginia 24011

Place on front of the envelope the project title and bid number as indicated at the top of the Invitation to Bid. Place on front of the envelope the bidder's name, mailing address, and Virginia Contractor number.

7.3 Opening of Bid: Bids will be opened and read at the time and place stated in the Invitation to Bid. The contents may be made public in accordance with Section 2.2-4342 of the Code of Virginia. The officer or agent of the City, whose duty it is to open them, will decide when the specified time has arrived. No responsibility will be attached to any officer or agent for the premature opening of a bid not properly addressed and identified.

7.4 Withdrawing Bid: After the date of opening of bids, no bid may be withdrawn for at least sixty (60) calendar days after such opening date, except as provided in Section 12 of these Instructions to Bidders.

SECTION 8. BID SECURITY

Each bid, for construction services in excess of $100,000, must be accompanied by a Bid Security in an amount equal to five (5%) percent of the maximum possible bid price in accordance with Sections 2.2-4336 and 4338 of the Code of Virginia. The Bid Security shall be furnished in one of the following forms:

a. Bid Bond, in a form substantially as provided in the Contract Documents, made payable to the City of Roanoke and properly executed by the bidder as Principal and a Corporate Surety authorized to transact business in the Commonwealth of Virginia. Attorneys-in-fact who execute Bid Bonds must file with the bond a certified copy of their Power of Attorney.

b. Certified Check, cashier's check, or cash deposited with the City of Roanoke Treasurer in the face amount required for the Bid Security and made payable to the City of Roanoke.

c. Personal Bond, Property Bond, or Letter of Credit issued by an authorized financial institution in the face amount required for the Bid Security, made payable to the City of Roanoke. These forms of security shall be submitted for review and must be approved by the City Attorney, in his sole discretion, at least three (3) working days prior to receipt of bids. Approval will be based upon a determination that the form of security offered will adequately protect the interests of the City as equivalent to a corporate surety's bond.

d. For return of Bid Security, see Sections 13 and 14 of these Instructions to Bidders.

SECTION 9. INTENT

9.1 Work Required: The City requires that the successful bidder perform a complete and satisfactory job in accordance with the Contract Documents.

9.2 Conflicts in Contract Documents: Anything called for by one of the Contract Documents and not called for by the others shall be of like effect as if required or called for by all Contract Documents. In the case of conflict between the Contract Documents, the Contract Documents shall take precedence in the following order: The Contract; addenda starting with the last issued addendum; the Supplemental General Conditions; the General Conditions; the Special Conditions; the specifications with attachments; and the drawings.

9.3 Work Not Described: All work not specifically described in the Contract Documents, yet required to produce a fully functional and properly operating project shall be provided even though every item or minor detail for the proper installation or successful operation of the entire Work is not mentioned in the Contract Documents.

9.4 Completion of Work: The Successful Bidder acknowledges and agrees that it has taken into account in its bid the requirements of the bid and Contract Documents, local conditions, availability of material, equipment, labor, and any other factors which may affect the performance of the Work. The Successful Bidder agrees and warrants that it will complete the Work not later than the time period or date indicated for completion.

SECTION 10. MATERIAL AND WORKMANSHIP

10.1 "Or Equal" Clause: The particular brand, make of material, device, or equipment described in the Contract Documents establishes a standard of required function, economy of operation, dimension, appearance, and quality to be met by any proposed substitution. No substitution will be considered unless a written request for approval has been submitted by the bidder and has been received by the Purchasing Division at least ten (10) calendar days prior to the

date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data, and any other information necessary or required by the City for an evaluation. A statement setting forth any changes in other material, equipment, or work that incorporation of the substitute would require shall be included. The burden of proof of merit of the proposed substitute is upon the bidder.

10.2 Approval of Substitution: The City's decision of approval or disapproval of a proposed substitution shall be in its sole discretion and shall be final. If the Public Work Transportation Division approves any proposed substitution, such approval will be set forth in an addendum issued to all recorded bidders. Bidders shall not rely on approvals made in any other manner.

10.3 Adaptation Due to Substitution: The Successful Bidder shall be responsible for making all changes in the Work necessary to adapt and accommodate any equivalent product or item which it uses. The necessary changes shall be made at the Successful Bidder's sole expense.

SECTION 11. STATEMENT OF QUALIFICATIONS

Each bidder shall be prepared to submit evidence of qualifications, experience, and financial ability to perform the Work set forth in the Contract Documents, should such be required by the Contract Documents or requested by the Purchasing Division. Furthermore, each bidder must notify the Purchasing Division if bidder has been terminated from any contract or job in the last three (3) years and/or if bidder has been during the last three (3) years debarred from bidding on or performing any federal, state or local procurement or job. If so, bidder must supply details of such matters by separate written statements included with bidder's response. Any bidder who is currently debarred will not be eligible to bid on this project.

SECTION 12. ERRORS IN BIDS

12.1 Withdrawal of Bid: A bidder may withdraw its bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor, or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents, and material used in the preparation of the bid sought to be withdrawn.

12.2 Withdrawal Procedure: The bidder shall give notice in writing and shall submit the original work papers with such notice to the City of its claim of right to withdraw its bid within two (2) business days after the conclusion of the opening of bids as set forth in Section 2.2 - 4330 (B)(1), of the Code of Virginia.

12.3 Withdrawal Requirements: Other applicable provisions of Section 2.2 - 4330, of the Code of Virginia shall apply to any errors in bids or any requested withdrawal due to errors in bids.

SECTION 13. REJECTION OF BIDS

13.1 Rejection of Bids: The City reserves the right to cancel the Invitation to Bid, to reject any or all bids, to reject the bid of a bidder who is not in a position to perform the contract, or to waive any informalities in any bid.

13.2 Bid Security Return for Rejected Bids: The Bid Security will be returned to all rejected bidders after the City has issued and posted an Award.

13.3 Bid Security Return for Unsuccessful Bids: Should a bid not be accepted by the City within sixty (60) consecutive calendar days after the opening of bids, or within such other time specified in the Bid Documents, each bidder may obtain its Bid Security from the City.

SECTION 14. ACCEPTANCE OF BIDS, EVALUATION OF BIDS, AWARD OF CONTRACT, AND SECURITY REQUIREMENTS

14.1 Acceptance of Bids: Each bidder should submit with its bid: documentation of bidder's legal name and indicate the type of business entity bidder is operating under; i.e., if a corporation, bidder should enclose a copy of the Certificate of Incorporation issued by the State Corporation Commission; if a partnership, bidder should enclose a copy of the relevant portions of the Partnership Agreement; if a limited liability company, bidder should enclose a copy of the Certificate of Organization.

14.2 Evaluation and Award to Lowest Responsive and Responsible Bidder: To determine the lowest responsive and responsible bidder with respect to this bid, the following items may be considered so as to protect the interest of the City:

a. The total base bid price plus the price of any alternates (aka- additive bid item) the City elects to accept, if any. (This is where a lump sum amount is required.) The City reserves the right to accept alternates in any order or combination.

b. If a unit price contract is requested, the total amount based on the estimated quantities as set forth in the Bid Form will be considered. (The listed unit prices for each item will control and any multiplication errors may be adjusted by the Purchasing Division using the proper estimated quantities.)

c. The ability, capacity and skill of the bidder to perform the contract or provide the services and/or items required.

d. Whether the bidder can perform the contract promptly and within the time specified, without delay or interference.

e. The character, integrity, reputation, judgment, experience and efficiency of the bidder.

f. The quality of performance of previous contracts or services.

g. The previous and existing compliance by the bidder with laws and ordinances relating to the contract, purchase or service.

h. The equipment and facilities available to the bidder to perform the contract or provide the services and/or items.

i. The sufficiency of the financial resources and ability of the bidder to perform the contract or provide the services and/or items.

j. The quality, availability and adaptability of the supplies, materials, equipment or services to the particular use required.

k. The ability of the bidder to provide future maintenance, parts and service for the use of the subject of the purchase or contract, if required.

l. Bids shall be evaluated based on the requirements set forth in this Invitation to Bid, and other criteria to determine acceptability such as inspection, testing, quality, workmanship, delivery, suitability for a particular purpose and life cycle cost. The City, in its sole discretion, may elect to waive an informality in any bid.

Should a Contract be awarded to a bidder, it will be awarded to the lowest responsive and responsible bidder. If an award of a contract is made, notice of the award, or the announcement of the decision to award, will be made by posting a notice of such award or announcement in the foyer area of the second floor of the Noel C. Taylor Municipal Building at 215 Church Avenue, S.W., Roanoke, Virginia 24011**,** as well as, on City's electronic **procurement website**.

14.3 Negotiation of Bid: If the bid by the lowest responsive and responsible bidder exceeds available funds, the City reserves the right to negotiate with the apparent low bidder pursuant to Section 2.2-4318 of the Code of Virginia. The conditions and procedures under which such negotiation may be undertaken are that the appropriate City officials shall determine that the lowest responsive and responsible bid exceeds available funds and notify such bidder in writing of its desire to negotiate. Thereafter, negotiations with the apparent low bidder may be held to obtain a Contract within available funds involving discussions of reduction of quantity, quality, or other cost saving mechanisms. Any such negotiated Contract shall be subject to final approval of the City, in the sole discretion of the City.

14.4 Contract Execution: The Successful Bidder shall be required, within fourteen (14) consecutive calendar days after receipt of the Contract, to return the signed Contract, and furnish to the City all other documents as enumerated hereinafter:

a. Performance Security (if applicable)

b. Labor and Material Payment Security (if applicable)

c. Certificate of Insurance

d. Escrow Agreement (if applicable)

e. Employment Projection Form (if applicable):

If applicable, the Successful Bidder for a project requiring at least thirty (30) calendar days work will be required to submit a completed Employment Projection Form along with the signed Contract. A copy of this form is included in these bid documents. Completion of the form does not create an obligation on the part of the bidder to hire any referred applicant.

14.5 Security: A Performance Security and a Labor and Material Payment Security each in the amount of one hundred percent (100%) of the contract amount for all contracts in accordance with Sections 2.2-4337 and 4338 of the Code of Virginia, shall be furnished by the Successful Bidder in one of the following forms:

a. A Performance Bond and a Labor and Material Payment Bond, on forms as provided in the Contract Documents, made payable to the City of Roanoke, properly executed by the successful bidder as Principal and a Corporate Surety authorized to transact business in the Commonwealth of Virginia. Attorneys-in-fact who execute the bonds must file with each bond a certified copy of their Power of Attorney.

b. Certified Checks, Cashier's Check, or Cash Escrow in the face amount required for the Performance Security and the Labor and Material Payment Security each made payable to the City of Roanoke.

c. Personal Bond, Property Bond, or Letter of Credit issued by an authorized financial institution in the face amount required for the Performance Security and the Labor and Material Payment Security, made payable to the City of Roanoke. These forms of security must be approved by the City Attorney, in his/her sole discretion. Approval will be based upon a determination that the form of security offered will adequately protect the interests of the City as equivalent to a corporate surety's bond.

14.6 Escrow Agreement Form: In the event the Contract meets the requirements as stipulated in Section 6.2 of these Instructions to Bidders and the Successful Bidder elects to use the escrow account procedure, the Escrow Agreement Form, as provided in the Contract Documents, shall be executed and submitted to the City within fifteen (15) calendar days after receipt of written notification of bid acceptance. If the executed Escrow Agreement Form is not submitted within the fifteen-day period, the Successful Bidder shall forfeit and waive the rights to the use of the escrow account procedure.

14.7 Bid Security Return for Successful Bid: Upon the execution of the Contract and approval of the Performance and Payment Securities, the Bid Security will be returned to the Successful Bidder upon request. Should the successful bidder fail or refuse to execute the Contract or furnish the required Performance and Payment Securities within the stipulated time, the Bid Security shall be due and paid to the City and the City shall be entitled to collect the Bid Security. In addition, the City may pursue any and all other remedies available to it at law or in equity against said bidder.

SECTION 15. ETHICS IN PUBLIC CONTRACTING

The provisions, requirements, and prohibitions as contained in Sections 2.2 - 4367 through 2.2-4377, of the Code of Virginia, pertaining to bidders, offerors, contractors, and subcontractors are applicable to this project. Direct contact with any City employee without the permission of the Purchasing Manager or her designated representative, on the subject of this bid, is strictly forbidden. Violation of this Instruction may result in disqualification of Bid.

SECTION 16. BID PACKAGE CHECKLIST

The following items must be completed and included in your bid package. Failure to include all required forms may result in rejection of the bid. If any of these documents were not included with your Project Manual, please contact the Purchasing Division at (540) 853-2871.

a. Completed Bid Form (all pages)

b. Properly Executed Bid Security (Bid Bond, Certified or Cashier's Check, etc., if applicable)

SECTION 17. PROTESTS

Any bidder who wishes to protest or object to any award made or other decisions made pursuant to the Invitation to Bid may do so only in accordance with the provisions of Sections 2.2-4357, 4358, 4359, 4360, 4363, and 4364 of the Code of Virginia, and only if such is provided for in such Code section.

SECTION 18. MISCELLANEOUS

a. No bidder shall confer on any public employee having official responsibility for a purchasing transaction any payment, loan, subscription, advance, deposit or money, service, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is exchanged.

b. The City may make investigations to determine the ability of the bidder to perform or supply the services or items as described in this Invitation to Bid. The City

reserves the right to reject any bid if the bidder fails to satisfy the City that it is qualified to carry out the obligations of the proposed contract.

c. The Successful Bidder must comply with the nondiscrimination provisions of Section 2.2-4311 of the Code of Virginia, which are incorporated herein by reference.

d. The Successful Bidder must comply with the drug-free workplace provisions of Section 2.2-4312 of the Code of Virginia, which are incorporated herein by reference.

e. It is the policy of the City of Roanoke to maximize participation by minority, women, small, and service disabled veteran-owned businesses in all aspects of City contracting opportunities.

f. The Successful Bidder shall comply with all applicable City, State, and Federal laws, codes, provisions, and regulations.

g. Providers of any outside services shall be subject to the same conditions and requirements as the Successful Bidder in regards to law, code or regulation compliance. The City reserves the right of approval for any subcontract work, including costs thereof.

h. This Invitation to Bid and all responses are subject to Section 2.2-4342 of the Code of Virginia regarding public inspection of records and the procedures a bidder must follow to protect trade secrets and proprietary information.

i. Conflict of Interests Act. The provisions, requirements and prohibitions as contained in Sections 2.2-3100, et. seq. of the Code of Virginia are applicable to this Invitation to Bid.

j. The procurement provisions of the Code of the City of Roanoke (1979), as amended, Sections 23.2-1, et. seq., as well as the City Procurement Manual, apply to this Invitation to Bid, unless specifically modified herein. The City's Procurement Manual can be reviewed at the Purchasing office, as well as on City's electronic procurement website.

k. Insurance. Successful Bidder, and any of its subcontractors, shall, at its or their sole expense, obtain and maintain during the life of the resulting contract the insurance policies and bonds required. Any required insurance policies and bonds shall be effective prior to the beginning of any work or other performance by Successful Bidder, or any of its subcontractors, under any resultant contract. The policies and coverages required are those as may be referred to in the sample contract and/or the general conditions or other documents of this Invitation to Bid.

l. Each bidder is to notify the Purchasing Division if any of bidder's owners, officers, employees, or agents, or their immediate family members, is currently, or has been in the past year, an employee of the City of Roanoke or has any

responsibility or authority with the City that might affect the procurement transaction or any claim resulting therefrom. If so, please provide the Purchasing Division with the complete name and address of each such person and their connection to the City of Roanoke. Each bidder is advised that the Ethics in Public Contracting and Conflict of Interests Act of the Code of Virginia, as set forth in this Invitation to Bid, apply to this Invitation to Bid. Such information should be provided in writing before the bid opening date or may also be provided with the bid response.

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ADOPTED FEBRUARY 22, 2005

CITY OF ROANOKE, VIRGINIA

Plan for Participation in Procurement
Transactions of Small Businesses and
Businesses Owned by Women and Minorities

1. POLICY STATEMENT

It is the policy of the City of Roanoke to encourage participation by small businesses and minority-owned and women-owned business enterprises in all aspects of City contracting opportunities. In order to demonstrate its commitment to this policy, the procedures set forth in this document shall be followed whenever possible.

2. DEFINITIONS

A minority business enterprise ("MBE" or "MBES" in the plural form) is a business that is both owned and controlled by minorities. This means that minorities must own fifty-one percent of the business, and that they must control the management and daily operations of the business.

A women business enterprise ("WBE" or "WBES" in the plural form) is a business that is both owned and controlled by women. This means that women must own fifty-one percent of the business, and that they must control the management and daily operations of the business.

A small business ("SB" or "SBS" in the plural form) is a United States business that does not exceed fifty employees, is independently owned and operated, and is not dominant in its field or operation or an affiliate or subsidiary of a business dominant in its field of operation.

A minority is an individual who is a citizen or lawful resident of the United States and is Black, Hispanic, Asian American, American Indian, Alaskan Native or a member of another group who the Small Business Administration has determined is economically and socially disadvantaged under Section 8 (a) of the Small Business Act.

3. EMPLOYMENT DISCRIMINATION PROHIBITED

Every contract of over ten thousand dollars ($10,000.00) to which the City is a party shall contain the provisions in subparagraphs (a) and (b) herein:

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

1. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age,

disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

2. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

3. Notices, advertisement and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

(b) The contractor will include the provisions of the foregoing subparagraphs (a)(1), (2) and (3) in every subcontract or purchase order of over ten thousand dollars ($10,000), with regard to the contract with the City, so that the provisions will be binding upon each subcontractor or vendor.

4. <u>LIST OF MBEs, WBEs AND SBs</u>

The City's Purchasing Division will establish and maintain a list of minority-owned and women-owned business enterprises. As appropriate, this list may include vendors at regional, state and national levels. A separate list of local MBES and WBES shall be established and, when established, be made available or the master list shall be searchable for local vendors. The local area shall consist of the Roanoke Valley, which shall include those areas included in the metropolitan statistical area as defined by the United States Office of Management and Budget for Census Bureau data purposes. The regional area shall include all cities, counties and towns, within the Commonwealth of Virginia, any part of which fall within a 50 mile radius of the City of Roanoke.

The City's Purchasing Division will establish and maintain a list of small businesses at the regional level.

The Purchasing Division shall serve as the primary contact for businesses to request to be added to the MBE/WBE list or the small business list and for businesses, organizations or individuals desiring access to the lists.

In maintaining these lists, the City's Purchasing Division will cooperate with the Virginia Department of Minority Business Enterprise, the United States Small Business Administration and other public or private agencies.

The Purchasing Division will maintain a list of agencies and organizations that provide assistance and/or education to MBES, WBES and SBS and inform such businesses of the resources available to them. The list will contain the types of services offered and contact information. The Purchasing Division will assist other organizations in publicizing training opportunities for MBES, WBES and SBS.

5. ALL CONTRACTS

In procuring goods and services for the City, all City employees shall follow the guidelines and mandates contained in the Purchasing Division's Procurement Manual with regard to solicitation of MBES and WBES.

When bids or proposals are solicited directly from potential contractors, solicitations shall include, when possible, appropriate businesses from the lists maintained by and/or available to the Purchasing Division, including but not limited to the list from the Virginia Department of Minority Business Enterprise.

All solicitation, addenda and award actions over $30,000 shall be posted on the City of Roanoke's web site http://www.roanokeva.gov.

Invitation to Bid solicitation notices over $50,000 and Requests for Proposals estimated to be over $30,000 shall be advertised in both The Roanoke Times and The Roanoke Tribune whenever possible. Such Invitation to Bid solicitation notices and Requests for Proposals shall also be advertised on RVTV.

6. CONSTRUCTION CONTRACTS

This paragraph shall apply to all construction contracts whenever advertising of the Invitation to Bid is required.

The bid documents will contain a list of, or a reference to a list of, MBES, WBES and SBS. The list will be provided to assist and encourage the general contractors' use of the listed businesses as subcontractors.

The City will provide a copy of the plans and specifications for all construction projects to the Southwest Virginia Community Development Fund, F. W. Dodge of Roanoke, and Valley Construction News plan room(s) so that MBES, WBES and SBS can review the documents. The documents will also be available for review, at no charge, at the Office of Community Resources Program Administrator.

Community Resources Program Administrator, the Purchasing Manager and the Project Engineer will require that general contractors make a "best or good faith effort" to seek the participation of and utilize MBES, WBES and SBS as suppliers and subcontractors. General contractors will be required to show that they have made efforts to recruit MBES, WBES and SBS by incorporating into the bid or proposal form:

a. Statements indicating efforts to negotiate with MBES, WBES and SBS and the results of such efforts. Bidders will be required to list those MBES, WBES and SBS from whom quotations for labor, materials, and/or services have been solicited, and state which MBES, WBES and SBS, if any, the contractor will use on the project if awarded the bid; and

b. A certification that the contractor has made a good faith effort to utilize MBES, WBES and SBS whenever possible.

A bid response that does not contain such statements and certification will be deemed non-responsive and will be rejected.

If the contractor listed MBES, WBES and/or SBS that it would use on the project if awarded the bid and the contractor is awarded the bid, the contractor will be required to use his or her best efforts to utilize the MBES, WBES and SBS identified by the contractor unless the contractor can demonstrate a nondiscriminatory, sound, business reason for not using the MBE, WBE or SB. Community Resources Program Administrator, in his or her sole discretion, will determine whether or not the contractor has demonstrated a nondiscriminatory, sound, business reason.

The contractor, in every monthly request for payment, shall submit a status report of MBE, WBE, and SB participation in the project to date. Payment shall not be issued to the contractor until such status report is submitted.

The Purchasing Manager will closely monitor the requirements of this section.

7. RACIAL DISCRIMINATION IN CONSTRUCTION CONTRACT BONDING AND INSURANCE

In construction contracting, if any person is found by the City Manager or a designee to have engaged in discrimination on the basis of race or gender in the granting of bonds or insurance to persons who contract with or desire to contract with the City, or to persons who receive subcontracts or desire to receive a subcontract in connection with a City contract, the person shall be deemed unqualified to submit a bond or insurance for any City construction contract unless and until the City Manager or designee determines that the discrimination has been purged and that adequate assurances have been made that it will not recur. Any determination by the City Manager of a violation of this section shall be reported in writing to City Council.

8. FEDERAL, STATE OR OTHER GRANT REQUIREMENTS

In addition to the provisions of this Plan, when the City is using funds subject to federal, state or other grant requirements with regard to MBES, WBES and/or SBS, the City's Department managing the specific solicitation will take all necessary affirmative steps to assure that the requirements of the grant or program are met.

9. ECONOMIC DEVELOPMENT

The Department of Economic Development will assist the Purchasing Division by providing MBES, WBES and SBS with information regarding the resources available to them and by referring such businesses to the Purchasing Division for additional information.

The Department of Economic Development will also include MBES, WBES and SBS in any programs it has to introduce and familiarize businesses with opportunities in the City.

10. DEBARMENT

Any offeror or bidder, or any principal thereof or person associated therewith, found to have engaged in substantial and intentional misrepresentation concerning either good faith MBE, WBE and/or SB participation efforts or its status as a minority owned, women owned or small business shall be debarred from any City contracting for a period of two (2) years. This debarment shall also extend to any successor firm substantially controlled or managed, whether directly or indirectly, by any debarred individual. This determination shall be made by the City Manager or a designee; and any debarment shall be reported in writing to Council.

11. REPORTING

The Purchasing Manager shall, at the conclusion of each fiscal year, report to the City Manager for report to City Council on the Purchasing Division's compliance with this Plan and efforts made pursuant to the Plan. The report shall also include the level of participation by MBES, WBES and SBS in contracts that have been awarded by the City through formal solicitations during that fiscal year.

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CITY OF ROANOKE, VIRGINIA

BID FORM

DATE:_____

SUBMITTED BY:_____
(Exact Legal Name of Bidder)

NOTE: ALL PAGES OF THE BID FORM ARE TO BE INCLUDED IN THE COMPLETED BID. ALSO, BIDS CONTAINING ANY CONDITIONS, OMISSIONS, UNEXPLAINED ERASURES, ALTERATIONS OR ITEMS NOT CALLED FOR IN THE BID, OR IRREGULARITIES OF ANY KIND, MAY BE REJECTED BY THE CITY AS BEING NON-RESPONSIVE. NO CHANGES ARE TO BE MADE TO THE BID FORM. ANY CHANGES TO A BID AMOUNT MUST BE INITIALED BY THE AUTHORIZED PERSON SIGNING THE BID FORM.

The undersigned hereby proposes and agrees, if this bid is accepted by the City of Roanoke, to enter into a Contract with the City of Roanoke, Virginia, (hereafter - City or Owner) to furnish all equipment, materials, labor, and services necessary to provide West End commercial façade improvements and associated Work , Invitation to Bid No. 16-07-20, in accordance with the Contract Documents as prepared by or for the City of Roanoke.

The undersigned agrees that the following Lump Sum Prices will become a part of the Contract and in accordance with the Contract Documents shall be used for the purpose of adjusting the Contract Sum up or down for changes made by the City for increased or decreased quantities of work from estimated quantities as indicated on the Drawings and/or in the Specifications. The Unit Prices shall include all labor, materials, equipment, services, overhead, profit, insurance, bonds, taxes, etc., to cover the finished work of the several kinds called for in place.

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LOCATION #1: 1201 PATTERSON AVENUE, S.W., ROANOKE, VA

ITEM DESCRIPTION FOR LOCATION #2	ESTIMATED QUANTITIES	UNIT	UNIT PRICE	EXTENDED BID AMOUNT
MASONRY REPOINTING	60	SF	$_____	$_____
GLASS BLOCK REPOINTING	30	SF	$_____	$_____
WOOD DECK BOARDS	0	SF	$_____	$_____
WOOD JOISTS	0	LF	$_____	$_____
ROOF SHEATHING	0	SF	$_____	$_____
TOTAL BID PRICE (LOCATION #1)				$_____

LOCATION #2: 312 13TH STREET, ROANOKE, VIRGINIA

ITEM DESCRIPTION FOR LOCATION #1	ESTIMATED QUANTITIES	UNIT	UNIT PRICE	EXTENDED BID AMOUNT
MASONRY REPOINTING	100	SF	$_____	$_____
GLASS BLOCK REPOINTING	0	SF	$_____	$_____
WOOD DECK BOARDS	80	SF	$_____	$_____
WOOD JOISTS	60	LF	$_____	$_____
ROOF SHEATHING	80	SF	$_____	$_____
TOTAL BID PRICE (LOCATION #2)				$_____

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LOCATION #3: 631 CAMPBELL AVENUE, S.W., ROANOKE, VIRGINIA

ITEM DESCRIPTION FOR LOCATION #2	ESTIMATED QUANTITIES	UNIT	UNIT PRICE	EXTENDED BID AMOUNT
MASONRY REPOINTING	40	SF	$_____	$_____
GLASS BLOCK REPOINTING	20	SF	$_____	$_____
WOOD DECK BOARDS	0	SF	$_____	$_____
WOOD JOISTS	0	LF	$_____	$_____
ROOF SHEATHING	0	SF	$_____	$_____
TOTAL BID PRICE (LOCATION #3)				$_____

TOTAL EXTENDED BID FOR ALL LOCATIONS: $_____

THE CITY WILL REVIEW EACH BID AND MAY ELECT TO ISSUE SEPARATE AWARDS TO THE LOWEST RESPONSIVE AND RESPONSIBLE BIDDER(S) FOR SUCH GOODS/SERVICES. THE DETERMINATION TO AWARD PER LOCATION AND/OR FOR THE TOTAL EXTENDED BID AMOUNT FOR ALL LOCATIONS IS AT THE SOLE DISCRETION OF THE CITY OF ROANOKE.

The undersigned acknowledges the receipt of the following addenda to the Contract Documents:

Addendum Number _____ Dated _____
Addendum Number _____ Dated _____
Addendum Number _____ Dated _____

The undersigned hereby agrees, if this bid is accepted by the City, to commence work with an adequate force and equipment on the date stipulated in the written "Notice to Proceed" from the Community Resources Program Administrator and, unless otherwise directed by the Community Resources Program Administrator to complete all West End Commercial Facade Improvements and associated work, at all three properties, within one hundred eighty (180) consecutive calendar days from the date stipulated in the written "Notice to Proceed" and to pay as liquidated damages the sum of Two Hundred and 00/100 Dollars ($200.00) per day as step one liquidated damages and the sum of One Hundred and 00/100 Dollars ($100.00) per day as step two liquidated damages to the City of Roanoke for each consecutive calendar day in excess of the time indicated to fully and satisfactorily complete the Work. **City reserves the right to add to and/or remove from the list of locations provided with this ITB as it may deem necessary and appropriate.**

By submitting a bid, the undersigned agrees it will not withdraw its bid during the time period provided for in the Invitation to Bid, except as provided for therein.

The Project and the work, services, and materials for such Project are subject to a U.S. Department of Housing and Urban Development Grant Agreement for Community Development Block Grant (CDBG) Funds dated July 31, 2013, with Special Conditions, and various Federal, State, and/or local terms and provisions as set forth therein or referred to therein and in the bid documents and/or any resultant contract documents.

The Bidder, by submission of this bid, hereby certifies that such Bidder has read all of the bid documents and such Bidder is making the certifications contained in, required by, and/or referred to in the bid documents and agrees to be bound by such certifications. Such Bidder further agrees that Bidder, if awarded a contract for this Project, shall provide the work, services, materials, and any other items as required by the bid documents and in compliance with such bid documents, including but not limited to, the HUD Agreement and any HUD documents, Federal, state, and/or local rules, regulations, and/or procedures contained in the bid documents and/or any resultant contract, or referred to therein. Furthermore, if there is any conflict in any of the documents, the more stringent provisions shall take precedence unless otherwise required by HUD, Federal, State, and/or local laws, documents, regulations, rules, and/or procedures, in which case they will take precedence in that order unless otherwise required by law.

Bidders are advised that any resultant contract will involve Federal and/or State and/or local funds and that the provisions of the Davis-Bacon Act will apply to this Project. The Successful Bidder shall be required to comply with the applicable provisions of this Act, including the applicable wage and record keeping provisions of such Act, and by submitting a bid, such Bidder agrees to comply with the above items.

The undersigned agrees that if this bid is accepted by the City, the failure or refusal of the undersigned to execute the Contract with the City and furnish to the City the required bonds and certificates of insurance within fourteen (14) consecutive calendar days from receipt of the Contract Documents may result in a payment of the Bid Security to the City as liquidated damages.

The attention of each bidder is directed to Code of Virginia, Sections 54.1-1100, et. seq., which requires certain licenses for contractors, tradesmen, and others. Each bidder is required to determine which license, if any, it is required to have under such sections. Complete the following:

Bidder _____ does have _____ does not have a Virginia Contractor's License. (Check appropriate blank.)

If bidder has a Virginia Contractor's License, circle the class bidder has and list the number.
Licensed "Class A", "Class B", or "Class C" Virginia Contractor Number _____
Identify Specialty _____

If bidder has another type of Virginia License, please list the type and number:
Type of license: _____ Number: _____

Bidder is a _____ resident or _____ nonresident of Virginia. (Check appropriate blank. See Code of Virginia, Sections 54.1-1100, et. seq.)

Virginia Code Section 2.2-4311.2 requires a bidder organized or authorized to transact business in the Commonwealth of Virginia pursuant to Title 13.1 or Title 50 of the Code of Virginia, as amended, or as otherwise required by law, to include in its bid the Identification Number issued to such bidder by the Virginia State Corporation Commission (SCC). Furthermore, any bidder that is not required to be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid a statement describing why the bidder is not required to be so authorized. Please complete the following by checking the appropriate line that applies and providing the requested information:

A._____ Bidder is a Virginia business entity organized and authorized to transact business in Virginia by the SCC and such bidder's Identification Number issued to it by the SCC is _____.

B._____ Bidder is an out-of-state (foreign) business entity that is authorized to transact business in Virginia by the SCC and such bidder's Identification Number issued to it by the SCC is _____.

C._____ Bidder does not have an Identification Number issued to it by the SCC and such bidder is not required to be authorized to transact business in Virginia by the SCC for the following reason(s):

_____
_____
_____
_____

Please attach additional sheets of paper if you need more space to explain why such bidder is not required to be authorized to transact business in Virginia.

The undersigned states and certifies that it has made a best or good faith effort to seek the participation of and utilize small, minority, women, and service disabled veteran–owned businesses as suppliers and subcontractors whenever possible for this Project.

State the complete legal name of the bidder, exactly as it is recorded with the State Corporation Commission, if recorded there.

LEGAL NAME_____

BY_____ TITLE_____
(TYPED NAME:)

SIGNED NAME_____
State Corporation Commission Identification No. _____
DELIVERY ADDRESS_____

MAILING ADDRESS_____

CITY_____ STATE _____ ZIP CODE _____

TELEPHONE_____FAX_____

CONTACT EMAIL ADDRESS
_____

ESCROW ACCOUNT REQUESTED (if applicable): YES _____ NO _____
DELIVERY OF BIDS: See Section 7.1 of the Instructions to Bidders.

Purchasing Division
Noel C. Taylor Municipal Building
215 Church Avenue, S.W., Room 202,
Roanoke, Virginia 24011

Place on front of the envelope the project title as indicated at the top of the Invitation to Bid. Place on front of the envelope the bidder's name, mailing address, and Invitation to Bid No.

WEST END COMMERCIAL FACADE IMPROVEMENTS
ROANOKE, VIRGINIA
ITB# 16-07-20

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CITY OF ROANOKE, VIRGINIA

BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED, _____ _____, as Principal, and _____ _____, as Surety, are hereby held and firmly bound unto _____, as City or Owner, in the penal sum of _____ _____($_____) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns. Signed, sealed, and delivered this _____ day of_____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to the _____ a certain bid, attached hereto and hereby made a part hereof, to enter a contract in writing for the _____ _____ _____.

NOW, THEREFORE, if the bid shall be rejected, or if the bid shall be accepted and the Principal shall execute and deliver to the City a Contract in the Form of Contract contained in the proposed Contract Documents, properly completed in accordance with the bid, and shall furnish bond for his faithful performance of the Contract and for the payment of all persons performing labor or furnishing materials in connection herewith within the specified time period, and shall in all other respects perform the agreement created by the acceptance of the bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of the Surety and its bond shall be in no way impaired or affected by any extension of the time within which the City may accept such bid; and the Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunder set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Attest: _____(SEAL)
Principal

_____ By_____
Title

Witness to signature of
Attorney-in-Fact: _____(SEAL)
Surety

_____ By_____
Witness Attorney-in-Fact

(Attorneys-in-fact affix seal and attach current original or certified copy of power of attorney.)

CITY OF ROANOKE, VIRGINIA

ESCROW AGREEMENT

(ONLY IF APPLICABLE)

THIS AGREEMENT ("Agreement"), made and entered into this _____ day of _____, 20_____ by, between and among the City of Roanoke, Virginia ("City" or "Owner"), _____ _____ ("Contractor"),

_____
(Name of Escrow Agent)

_____
(Address of Escrow Agent)

a trust company, bank, or savings and loan institution (hereinafter referred to collectively as "Escrow Agent") with its principal office located in the Commonwealth of Virginia ("Commonwealth") and _____ _____ ("Surety") provides:

I.

The City and the Contractor have entered into a contract dated _____ _____ with respect to City of Roanoke Invitation to Bid No. _____, for _____ _____ _____ ("the contract"). This Agreement is pursuant to, but in no way amends or modifies, the contract. Payments made hereunder or the release of funds from escrow shall not be deemed approval or acceptance of performance by the Contractor. Payments should be made to _____ _____and mailed to_____ _____ _____ (Name and Address of Escrow Agent).

II.

In order to assure full and satisfactory performance by the Contractor of its obligations under the contract, the City is required thereby to retain certain amounts otherwise due the Contractor. The Contractor has, with the approval of the City, elected to have these retained amounts held in escrow by the Escrow Agent. This agreement sets forth the terms of the escrow. The Escrow Agent shall not be deemed a party to, bound by, or required to inquire into the terms of, the contract or any other instrument or agreement between the City and the Contractor.

III.

The City shall from time to time pursuant to its contract pay to the Escrow Agent amounts retained by it under the contract. Except as to amounts actually withdrawn from escrow by the City, the Contractor shall look solely to the Escrow Agent for the payment of funds retained under the contract and paid by the City to the Escrow Agent.

The risk of loss by diminution of the principal of any funds invested under the terms of this contract shall be solely upon the Contractor.

Funds and securities held by the Escrow Agent pursuant to this Escrow Agreement shall not be subject to levy, garnishment, attachment, lien, or other process whatsoever. Contractor agrees not to assign, pledge, discount, sell or otherwise transfer or dispose of his interest in the escrow account or any part thereof, except to the Surety.

IV.

Upon receipt of checks drawn by the City and made payable to it as escrow agent, the Escrow Agent shall promptly notify the Contractor, negotiate the same and deposit or invest and reinvest the proceeds in approved securities in accordance with the written instructions of the Contractor. In no event shall the Escrow Agent invest the escrowed funds in any security not approved, as set forth in Section V. below.

V.

The following securities, and none other, are approved securities for all purposes of this Agreement:

(1) United States Treasury Bonds, United States Treasury Notes, United States Treasury Certificates of Indebtedness or United States Treasury Bills,

(2) Bonds, notes and other evidences of indebtedness unconditionally guaranteed as to the payment of principal and interest by the United States,

(3) Bonds or notes of the Commonwealth of Virginia,

(4) Bonds of the City of Roanoke, Virginia, if such bonds carried, at the time of purchase by the Escrow Agent or deposit by the Contractor, a Standard and Poor's or Moody's Investor Service rating of at least "A", and

(5) Certificates of deposit issued by commercial Banks located within the Commonwealth, including, but not limited to, those insured by the Escrow Agent and its affiliates.

(6) Any bonds, notes, or other evidences of indebtedness listed in Sections (1) through (3) may be purchased pursuant to a repurchase agreement with a bank, within or without the Commonwealth of Virginia having a combined capital, surplus and undivided profit of not less than $25,000,000, provided the obligation of the Bank to repurchase is within the time limitations established for investments as set forth herein. The repurchase agreement shall be considered

a purchase of such securities even if title, and/or possession of such securities is not transferred to the Escrow Agent, so long as the repurchase obligation of the Bank is collateralized by the securities themselves, and the securities have on the date of the repurchase agreement a fair market value equal to at least 100% of the amount of the repurchase obligation of the Bank, and the securities are held by a third party, and segregated from other securities owned by the Bank.

No security is approved hereunder which matures more than five years after the date of its purchase by the Escrow Agent or deposit by the Contractor.

VI.

The Contractor may from time to time withdraw the whole or any portion of the escrowed funds by depositing with the Escrow Agent approved securities as set forth in Section V. above in an amount equal to, or in excess of, the amount so withdrawn. Any securities so deposited or withdrawn shall be valued at such time of deposit or withdrawal at the lower of par or market value, the latter as determined by the Escrow Agent. Any securities so deposited shall thereupon become a part of the escrowed fund.

Upon receipt of a direction signed by the City Manager or Assistant City Manager, the Escrow Agent shall pay the principal of the fund, or any specified amount thereof, to the City or the Contractor as the City may direct. If payment is to be made to the City, it shall be made in cash. However, if payment has been authorized to be made to the Contractor, the Contractor may specify to the Escrow Agent if payment is to be made in cash or in kind. Such payment and delivery shall be made as soon as is practicable after receipt of the direction.

VII.

For its services hereunder the Escrow Agent shall be entitled to a reasonable fee in accordance with its published schedule of fees or as may be agreed upon by the Escrow Agent and the Contractor. Such fee and any other costs of administration of this Agreement shall be paid from the income earned upon the escrowed fund and, if such income is not sufficient to pay the same, by the Contractor.

VIII.

The net income earned and received upon the principal of the escrowed fund shall be paid over to the Contractor in quarterly or more frequent installments. Until so paid or applied to pay the Escrow Agent's fee or any other costs of administration such income shall be deemed a part of the principal of the fund.

IX.

The Surety undertakes no obligation hereby but joins in this Agreement for the sole purpose of acknowledging that its obligations as surety for the Contractor's performance of the contract are not affected hereby.

WITNESS the following signatures, all as of the day and year first above written.

_____
Typed Name of Contractor

Attest: (if corporation)
Witness: (if individual)

_____ _____
President/Vice-President;
Partner or Owner (Seal)

_____
Typed Name of Escrow Agent

Attest:

_____ _____
Bank Officer Vice President

_____
Typed Name of Surety Company

Witness:

_____ By:_____
Attorney-In-Fact

City of Roanoke, Virginia

Attest:

_____ _____
City Clerk/Deputy City Clerk City Manager

Approved as to form: Approved as to execution:

_____ _____
City Attorney/Assistant City Attorney City Attorney/Assistant City Attorney

CITY OF ROANOKE, VIRGINIA

SAMPLE CONTRACT

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THE CITY WILL REVIEW EACH BID AND MAY ELECT TO ISSUE SEPARATE AWARDS TO THE LOWEST RESPONSIVE AND RESPONSIBLE BIDDER(S) FOR SUCH GOODS/SERVICES. THE DETERMINATION TO AWARD PER LOCATION AND/OR FOR THE TOTAL EXTENDED BID AMOUNT, OR ANY COMBINATION THEREOF, FOR ALL LOCATIONS IS AT THE SOLE DISCRETION OF THE CITY OF ROANOKE. THE SUCCESSFUL BIDDER(S) WILL BE REQUIRED TO ENTER INTO A CONTRACT FOR EACH LOCATION IDENTIFIED HEREIN.

SAMPLE CONTRACT

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) PROGRAM LOAN AGREEMENT BETWEEN THE CITY OF ROANOKE, VIRGINIA, (PROPERTY OWNER), AND (CONTRACTOR) FOR IMPROVEMENT OR ALTERATION TO THE FACADE OF COMMERCIAL PROPERTY.

REFERENCE: ITB#16-07-20

THIS LOAN AGREEMENT (hereinafter the "Agreement") is entered into by and between the City of Roanoke, Virginia**,** a Virginia municipal corporation with a principal address of 215 Church Ave. SW, Roanoke, Virginia 24011 (hereinafter referred to as the "City" or "Lender"), and [Insert name of owner/business] with a principal address of: [property address] (hereinafter, referred to as "Owner" or "Borrower") and [insert name of contractor]., Contractor with a principal address of [contractor address] (hereinafter referred to as "Contractor").

WITNESSETH:

WHEREAS, the Community Development Block Grant Program is administered by the United States Department of Housing and Urban Development ("HUD"); and

WHEREAS, the City is an entitlement community that receives Community Development Block Grant funds (hereinafter referred to as "CDBG" funds) awarded under the Housing and Community Development Act of 1974, in furtherance of its goal of promoting community development, as further detailed in the Consolidated Plan for Housing and Community Development Programs 2015-2019; and

WHEREAS, the Project and the work, services, and materials for such Project are subject to a U.S. Department of Housing and Urban Development Grant Agreement dated July 31, 2013, for Community Development Block Grant (CDBG), together with any special terms and conditions, and various Federal, State, and/or local terms and provisions as set forth and/or referred to herein.

WHEREAS, the Contractor has entered into a performance and a payment bond, with surety, each in the penalty of One Hundred Percent (100%) of the Contract sum, payable to the City of Roanoke as required by the Contract Documents;

WHEREAS, Owner is the owner of the Property located at_____ in the City of Roanoke, Virginia, designated as Tax Map No._____(hereinafter referred to as the "Property"), and has submitted an application which has been approved by the City, to utilize CDBG funds for alterations and improvements to the façade of the Property,(and more specifically described on the attached **Exhibit ''A''**, in connection with the City's West End Commercial Façade Program ("Program"); and

WHEREAS, alterations and improvements to the façade of the Property is an eligible activity under the HUD CDBG Program in accordance with 24 CFR §570.201(o)(1)(i) that meets the national objectives as required under 24 CFR §570.200(a)(2) and 24 CFR §570.208(b)(1); and

WHEREAS, the City has determined that there is a public need to provide funds to Borrower in order to promote both the general health, welfare and/or safety of the community, and to that end, the City has allocated CDBG funds to Owner; and

WHEREAS, alterations and improvements to the façade of the Property will stabilize and revitalize a community where residents are of low and moderate income; and

WHEREAS, Spectrum Design, P.C., is the City's consultant ("Consultant") which has been retained by the City for purposes of identifying the alterations and improvements to the façade of the eligible properties that have been approved by the City for purposes of the Program and which shall inspect the property during construction and ensure the work performed by the Contractor is satisfactory; and

WHEREAS, the Contractor is licensed by the Commonwealth of Virginia, and holds a Class A Contractor's License # _____, and has been retained by the City for purposes of performing the alterations and improvements to the façade of the Owner's Property identified by Consultant as further described in the Scope of Work and Bid Form attached as Exhibit B, which is attached hereto and incorporated by reference; and

WHEREAS, the Owner is the recipient of a loan from the City in the amount of _____ Dollars ($-----.00), in connection with the Program, the proceeds of which shall be used for alterations and improvements to the façade of the Property to be performed by Contractor, as further defined in the Scope of Work and Bid Form attached hereto as **Exhibit "B",** which the Owner has reviewed and approved and

WHEREAS, the parties desire to enter into this Agreement in order to ensure compliance with the requirements of the CDBG regulations and to secure other promises regarding the use of the funds, and to document the terms and conditions that govern each of the parties under this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, the above recitals which are incorporated herein by reference and are a material part of this Agreement, and for other good and valuable consideration, the sufficiency and receipt whereof being hereby acknowledged, the City, Borrower and Contractor agree as follows:

<u>CITY AGREES</u>

1. To provide a deferred loan to Borrower in an amount equal to one third (1/3) of the cost of the alterations and improvements to be performed on the Property as identified in Exhibit B, up to maximum amount not to exceed $25,000, for a five-year term to the Borrower for the improvement of the Property within eligible areas in the West End Target Area.

2. To review the Bids secured by the City for the proposed work.

3. To issue a written "Notice to Proceed" to the Contractor within thirty (30) calendar days from the date of execution of this contract, unless

unanticipated contingencies arise which prevent issuance of the ITB within such time .

4. To review each change order which may become necessary during the facade improvement work.

5. To approve and issue up to four payments to the Contractor upon the satisfactory completion and inspection of 25%, 50%, 75% of the work and upon completion and final inspection of 100% of the work and receipt of required Labor Standards and Equal Opportunity forms from the Contractor. Issuance of such payments may be subject to approval by the Consultant and the Owner in the City's reasonable discretion.

6. To release the deed of trust at the end of five (5) years following completion of the facade improvements if:

    i. the Borrower completed the improvements in accordance with program guidelines provided by the City and has done so within six months of receiving the grant;
    ii. if the Owner of the building at the time of the loan approval retains ownership of the improved property during the five year period;
    iii. and if the building to be improved has a current tenant operating a current business or is occupied by a business within one year after the improvements are completed.

BORROWER AGREES

1. To submit an application to the City identifying the building proposed for rehabilitation, the owner(s), photographs, sketches, and other documentation as may be required for design review monitoring.

2. To provide evidence of property ownership and documentation of adequate all-hazard insurance coverage.

3. To use Borrower's capital and/or to participate in other funding resource to finance and undertake, at a minimum, an equal dollar value of improvements to the rehabilitated property equivalent to twice approved loan amount (200% match).

4. To provide documentation and receipt of expenditures for eligible improvements made by the Borrower as matching rehabilitation work.

5. The Borrower will be responsible for any amount related to this contract over and above the maximum amount of $25,000 in CDBG funds per storefront. The Borrower will need to provide this money to the City to be deposited in a non-interest bearing escrow account before grant funds from the City are released. The total amount of this contract is _____.

6. To provide the Contractor access to the property during the construction

period from 7:00 A.M. to 7:00 P.M. seven days per week. If the City determines that the Borrower or Borrower's tenant is unreasonably restricting the Contractor's access to the property, the Borrower shall be liable to the City for the costs created by the lack of access.

7. To bear full responsibility to the Contractor for total cost of the project and permit Contractor to use, at no cost, available utilities necessary for the completion of his work.

8. To take reasonable precautions to protect Borrower's, or any tenant of Borrower's, personal property, such as furniture, during the course of work and the Borrower shall coordinate such activities with the Contractor.

9. To allow representatives of the City and the United States Department of Housing and Urban Development, including and not limited to the Consultant, the opportunity to inspect the Property during reasonable hours for the purpose of determining whether or not the façade work is being accomplished as specified as described in Exhibit B.

10. The Borrower agrees that, in the event a natural disaster or fire should damage or destroy the building situated on the Property, the City has the option to cancel this agreement.

11. Material and equipment removed or replaced under this contract becomes the property of the Contractor and will be removed from the site. This does not apply to furniture and personal property stored temporarily for the Borrower, or to an attached list of items specified to remain the property of the Borrower.

12. To present all required change orders related to the facade or storefront improvements to the City for review and approval prior to Contractor authorization to proceed.

13. To complete the facade improvements in accordance with City program guidelines within six months following the loan approval by the City.

14. To execute, in conjunction with this Contract, a note secured by a deed of trust upon the Property being rehabilitated, with repayment of the note subject to credits in the form of write-offs over a five year term. The parties agree that for each year the Owner complies with the terms of the Program and does not commit an act of default as such acts of default are defined herein and in such deed of trust and related documents, twenty percent (20%) of the loan amount will be forgiven by City.

15. To retain ownership of the building during a five year period; or if the Borrower should sell the improved property within the five year period, the balance on the note will become due and payable in full.

16. To retain a tenant operating a current business in the improved building; or, if the application is approved for renovation of unoccupied structure, to secure a tenant within one (1) year after the improvements are made; otherwise 0 percent (0%) of the deferred loan will be forgiven.

17. To maintain, with no changes, the improved façade on the Property for five years.

18. To indemnify and hold harmless the City of Roanoke and its individual officers, employees and consultants as set forth in greater detail of Section 4 of this Agreement. This indemnification provision shall survive the termination or expiration of the Agreement.

19. To release and discharge forever the City of Roanoke, Virginia, for any claims of loss or damage or diminution in value, or injury to Owner, or anyone claiming under Owner, including Owner's successors in title. to persons or property., This provision shall survive the termination or expiration of the Agreement.

CONTRACTOR AGREES

1. The Contractor agrees to perform the work agreed upon by the Borrower and the City, as identified in the attached Exhibit B, for a not to exceed amount of $_____ diligently and in a good workmanlike manner, using the materials specified or materials of equal quality and in compliance with local and state building codes. Work start date is scheduled for _____, 2016 with substantial completion on or before _____, 2016. Time extension up to thirty (30) days may be granted by the City for extraordinary conditions beyond the control of the Contractor.

2. Obtain building permit from the City of Roanoke and any other permits or certificates that may be required in the completion of this work at his own expense, and the work being done or any part thereof shall not be deemed complete until same has been accepted by the Borrower and the City.

3. Request all inspections as required by state and local building codes from the City's building inspector.

4. Indemnify and hold harmless and defend the Borrower, the City of Roanoke, the U. S. Department of Housing and Urban Development, their agents and employees from and against any and all claims for injuries or damages to persons or property of whatsoever kind of character asserted or arising out of this contract of the work to be performed hereunder. The Contractor assumes all liability and responsibility for injuries and claims for suits of damage occurring during the time the work is being performed and arising out of performance of same. The Contractor has provided proof of insurance in the amounts required by Section 4 of this Agreement. This indemnification provision shall survive the

termination or expiration of the Agreement.

5. Provide monthly payrolls, Employee Certifications, and Statements of Compliance, the forms for which will be provided by the City and will list all employees working on said project and submit the payrolls within seven working days following the end of the previous pay period.

6. Comply with the Davis-Bacon Act by paying employees no less than prevailing wages per the federal wage decision that is applicable to this project and provided to the Contractor by the City and make a request for additional classifications, as needed, to the City for it to forward to the Department of Labor.

7. Upon completion of the work, and prior to the time of final payment, furnish a "Certification of Completion and Release of Liens" stating that all work is complete and all charges for material and any other expenses incurred by the Contractor pertaining to the execution of this contract have been paid or waived in full to the end that no liens of any kind of character (save and except those between the parties hereto) may be affixed against the above described property.

8. Guarantee the improvements, both materials and workmanship herein provided for (save and except those materials which have a longer warranty which then takes precedence), in accordance with the requirements of the Statewide Building Code from the date of the "Final Inspection Report" of all work required by this contract. Should any defects appear within the specified period, the same shall be corrected by the Contractor at his expense within one (1) month of notification. Further, Contractor shall furnish the City written notification of defect and remedial action taken.

9. Contractor agrees to obtain and maintain the insurance in the coverages and amounts described below, prior to starting any work on the Property:

10. COMPLIANCE WITH HUD AGREEMENT AND OTHER DOCUMENTS:

    This Project and the work, services, and materials for such Project are subject to a U.S. Department of Housing and Urban Development Grant Agreement dated July 31, 2013 for Community Development Block Grant (CDBG), together with any special terms and conditions, and various Federal, State, and/or local terms and provisions as set forth and/or referred to herein.

    All work, services, materials, and other items required for this Project shall be provided and performed in accordance with such HUD Agreement, Federal, State, and/or local laws, and documents included or referred to in the bid documents and/or this Contract. Notwithstanding anything else in the ITB and/or in the Contract, the Contractor is advised and hereby agrees to comply with the HUD Agreement and all the applicable terms, provisions, and requirements of any HUD Federal, State, and/or local laws, documents, rules, regulations, and procedures as may be set forth in and/or referred to in the ITB and/or in this Contract as well as any other applicable Federal, State, and/or local laws, and requirements that are now in existence or may hereafter be required for this Project. Furthermore, Contractor shall incorporate into this Contract and the

HUD Agreement into all subcontracts and tiers of subcontracts for this Project.

11. Compliance with Federal Immigration Laws: Contractor agrees that Contractor does not, and shall not during the performance of this Contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

12. Compliance With State Law, Foreign And Domestic Businesses Authorized To Transact Business In The Commonwealth Of Virginia: Contractor shall comply with the provisions of Virginia Code Section 2.2-4311.2, as amended, which provides that a contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law. Contractor shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Contract. The City may void the Contract if the Contractor fails to remain in compliance with the provisions of this section.

SECTION 2: GENERAL TERMS AND CONDITIONS

1. Applicable Laws: The Borrower and Contractor shall abide by any and all applicable federal, state, or local laws, rules and regulations dealing with the Property, whether presently existing or hereafter promulgated. The Borrower and Contractor shall comply with all CDBG program requirements, HUD regulations and 24 CFR Part 570, as amended from time to time, and all federal regulations and policies issued pursuant to these regulations, whether set forth herein or not. The Borrower and Contractor shall also comply with all other applicable federal, state and local statutes, ordinances, rules and regulations including, but not limited to, all applicable provisions of the City's Zoning Ordinance and Building Code. The Borrower further agrees to utilize funds available under this Agreement to supplement rather than supplant funds otherwise available.

2. Uniform Administrative Requirements: The Borrower and Contractor shall comply with the Uniform Administrative requirements set forth in 24 CFR Part 85, as modified by 24 CFR §570.502. The Borrower and Contractor shall supply the City with documentation in order to ensure the Borrower and Contractor's compliance. The Borrower and Contractor also shall adhere to the accounting principles and procedures required therein, utilize adequate internal controls, and maintain necessary source documentation for all costs incurred. The Borrower and Contractor acknowledge and agree that they read and understand these regulations.

3. Audits: The Borrower and Contractor shall comply with the audit requirements contained in the Single Audit Act Amendments of 1996 (31 U.S.C. §§7501-7507) and OMB Circular A-133 and implementing regulations as set forth

in 24 CFR Part 45.

4. Records: The Borrower shall comply with 24 CFR §85.42 as modified by 24 CFR §570.502 regarding records that must be maintained for the Property during the duration of the Project plus a five (5) year retention period that starts from the date of submission of the City's Comprehensive Annual Performance and Evaluation Report in which the activity funded herein is reported on for the final time. The Borrower shall maintain all leases and project financial records, including source documentation to support how CDBG funds were expended, which includes, but is not limited to, invoices, schedules containing comparisons of budgeted amounts and actual expenditures, construction progress schedules signed by the general contractor, and other documentation as may be required by the City to support the expenditures for this Property. If any litigation, claim or audit is commenced prior to the expiration of this five (5)-year period, the Borrower must maintain the records until such audit findings have been resolved and for a period of five (5) years thereafter. The records shall be made available to the City, HUD and/or any of their authorized representatives, who shall have access to and the right to examine any of the said records during said period. This section shall survive termination of this Agreement.

5. Monitoring: The Borrower shall allow on-site monitoring of the Property on a regular basis during façade alteration of the Property and at any other time during the term of this Agreement or that may be required in the future by the City or HUD to determine compliance with CDBG regulations.

6. Annual Reports: The Borrower shall provide annual reports during the terms of this Agreement to the City to demonstrate that the Property continues to operate as an eligible commercial activity. If the Property is sold or lost during the terms of this Agreement, the Borrower shall give notice to the City within ten (10) days of the sale or loss.

7. Religious and Political Activities: The Borrower and Contractor is prohibited from using funds provided herein or personnel employed in the administration of the program for sectarian or religious activities, lobbying, political patronage and/or nepotism activities. The Borrower and Contractor further agrees that no funds provided, nor personnel employed under this Agreement, shall be in any way or to any extent engaged in the conduct of political activities in violation of Chapter 15 of Title V, United States Code (Hatch Act), 24 CFR §570.207(a)(3), or 24 CFR §570.200(j).

9. Drug Free Workplace: The Borrower and Contractor shall comply with the Drug Free Workplace Act of 1988 and implementing regulations in 24 CFR Part 24, Subpart F regarding maintenance of a drug free workplace. The Borrower and Contractor shall complete and comply with the "Certification Regarding Drug-Free Workplace Requirements" attached hereto as **Exhibit "F"** and made a part hereof by this reference and a copy shall be kept in the files of each of the parties of this Agreement.

11. Anti-Lobbying Provision: The Borrower and Contractor shall comply with the requirements set forth in 31 U.S.C. §1352 and implementing regulations at 24

CFR Part 87. The Borrower and Contractor shall complete and comply with the "Certification Regarding Lobbying" attached hereto as Exhibit **"G"** and made a part hereof by this reference. The Borrower and Contractor shall execute the "Certification Regarding Lobbying" in the form attached hereto as **Exhibit "G"** and a copy shall be kept in the files of each of the parties of this Agreement.

12. Equal Employment Opportunity: The Borrower and Contractor shall comply with 24 CFR §570.607, Executive Order 11246, as amended by Executive Orders 11375, 11478, 12086 and 12107 (Equal Employment Opportunity) and the implementing regulations in 41 CFR Part 60, and the provisions of the Equal Employment Opportunity Clause attached hereto as **Exhibit "H"** and made a part hereof by this reference. Any contracts entered into by the Borrower and Contractor shall include a provision for requiring compliance with these regulations. The Borrower and Contractor shall keep records and documentation demonstrating compliance with these regulations.

13. Non-Discrimination: The Borrower and Contractor shall not, on the grounds of race, color, religion, national origin or sex, exclude any person from participation in, or deny any person the benefits of, or subject any person to discrimination, with respect to any part of the construction or operation of the Property. The Borrower and Contractor shall comply with 42 U.S.C. §5309, 24 CFR §570.602 and 24 CFR Part 6. The Borrower and Contractor shall also at all times comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. §2000d, et. seq.) and implementing regulations in 24 CFR Part 1. The Borrower and Contractor shall also not discriminate on the basis of age under the Age Discrimination Act of 1975 (42 U.S.C. §6101, et. seq.) and the implementing regulations contained in 24 CFR Part 146, or on the basis of disability as provided in Section 504 of the Rehabilitation Act of 1973, and the implementing regulations contained in 24 CFR Part 8. Any contracts entered into by the Borrower and Contractor shall include a provision for compliance with these regulations. The Borrower and Contractor shall keep records and documentation demonstrating compliance with these regulations.

14. Utilization of Minority/Women's Business Enterprises: The Borrower and Contractor shall, to the greatest extent feasible, ensure that Minority/Women's Business Enterprises are included for consideration for participation in all construction, supply or service contracts, if any. The Borrower and Contractor shall comply with Executive Order 11625, as amended by Executive Order 12007 (Minority Business Enterpises); Executive Order 12432 (Minority Business Enterprise Development); and Executive Order 12138, as amended by Executive Order 12608 (Women's Business Enterprise). The Borrower and Contractor shall keep records demonstrating compliance with this provision.

15. Fair Housing Act: The Borrower shall comply with the Fair Housing Act (42 U.S.C. §§3601-3620) and implementing regulations at 24 CFR Part 100, Executive Order 11063, as amended by Executive Order 12259 (Equal Opportunity in Housing) and their implementing regulations in 24 CFR Part 107 and shall keep all records demonstrating said compliance.

16. Compliance with Davis-Bacon Act: The Contractor shall comply with 24

CFR §570.603, and the requirements of the Secretary of Labor in accordance with the Davis-Bacon Act (40 U.S.C. §276(a) to (a-7)), as amended, and as supplemented by Department of Labor regulation 29 CFR Part 5. Guidance on these regulations is attached hereto as **Exhibit "I"** and made a part hereof by this reference. Any construction contracts entered into by the Contractor shall include a provision for compliance with the Davis-Bacon Act and supporting Department of Labor regulations. The Contractor shall maintain documentation and records that demonstrate compliance with these regulations, including contract provisions and payroll records. Such documentation shall be submitted to the City for review on a monthly basis. A copy of the Wage Decision is contained in Attachment "1" of **Exhibit "I"** and attached hereto and made a part hereof by this reference, as such exhibit may be amended from time to time.

17. Copeland "Anti-Kickback" Act: The Borrower and Contractor shall comply with the Copeland "Anti-Kickback" Act (18 U.S.C. §874) as supplemented by the Department of Labor regulations contained in 29 CFR Part 3. Any construction contracts entered into by the Borrower or Contractor shall include a provision for compliance with these regulations. The Borrower and Contractor shall maintain documentation and records that demonstrate compliance with these regulations.

18. Contract Work Hours and Safety Standards Act: The Borrower and Contractor agrees to comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. §327-333), as supplemented by the Department of Labor regulations contained in 29 CFR Part 5. Any construction contracts entered into by the Borrower or Contractor shall include a provision for compliance with these regulations. The Borrower and Contractor shall maintain documentation and records that demonstrate compliance with these regulations. Such documentation shall be submitted to the City for review on a monthly basis.

19. Handicapped Accessibility Requirements: The Borrower and Contractor shall design and construct the façade of the Property so that it is accessible to and usable by individuals with handicaps, in compliance with the Architectural Barriers Act of 1968 (42 U.S.C. §§4151-4157), the Uniform Federal Accessibility Standards, as set forth in 24 CFR §570.614, and the Americans with Disabilities Act of 1990 (42 U.S.C. §12131), if required by applicable law. The Borrower and Contractor shall keep records demonstrating compliance with these regulations.

20. Resident Aliens: The Borrower and Contractor agrees to comply with the requirements set forth in 24 CFR §570.613 regarding eligibility restrictions for certain resident aliens.

21. Agreement between City and HUD: The Borrower and Contractor agrees that it shall be bound by the standard terms and conditions used in the CDBG Agreement between the City and HUD, and such other rules, regulations or requirements as HUD may reasonably impose in addition to the conditions of this Agreement or subsequent to the execution of this Agreement by the parties hereto.

22. Debarment and Suspension: The Borrower and Contractor shall comply with the debarment and suspension requirements set forth in 24 CFR Part 5 and

24 CFR Part 24. The Borrower and Contractor shall not enter into a contract with any person, agency or entity that is debarred, suspended or otherwise excluded from or ineligible for participation in federal assistance programs under Executive Order 12549 or 12689, "Debarment and Suspension," which is made a part of this Agreement by reference. In the event that the Borrower or Contractor has entered into a contract or subcontract with a debarred or suspended party, no CDBG funds will be provided as reimbursement for the work done by that debarred or suspended contractor or subcontractor. The Borrower and Contractor shall keep copies of the debarment and suspension certifications required by 24 CFR Parts 24 and 91.

23. Environmental Review Requirements: The Borrower and Contractor are not required to assume responsibility for an environmental review or assessment of this program pursuant to 24 CFR Part 58, nor responsibility for initiation of an intergovernmental review of this program and its activities (24 CFR §570.604). However, the Borrower and Contractor are required to provide information about its activities in order for the City to comply with its responsibility under 24 CFR Part 58. The Borrower and Contractor shall submit to the City any changes to the original proposed scope of work or any changes in the cost of the work so that the City may evaluate this new information and conduct any further environmental review. This information must be submitted to the City for approval at least 15 days prior to any commencement of work. The Borrower and Contractor also agree to assist the City in addressing environmental issues that may arise during the City's review process.

24. Lead-Based Paint Prohibited: The Borrower and Contractor shall not use lead-based paint on the Property. The Borrower and Contractor agrees that any construction or alteration of the facade of the Property with assistance provided under this Agreement shall be subject to HUD Lead-Based Paint Regulations at 24 CFR §570.608, which requires compliance with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §4821-4846, and the Residential Lead-Based Paint Hazard Reduction Act of 1992 (42 U.S.C. §§4851-4856) and implementing regulations at 24 CFR Part 35, of which subparts A, B, J, K and R apply to the CDBG Program. The Borrower and Contractor shall maintain records demonstrating compliance with these requirements.

25. Historic Preservation: The Borrower and Contractor shall comply with the Historic Preservation requirements set forth in the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470) and the procedures set forth in 36 CFR §800, Advisory Council on Historic Preservation Procedures for Protection of Historic Properties, insofar as they apply to the performance of this Agreement. In general, this requires concurrence from the State Historic Preservation Officer for all rehabilitation and demolition of historic properties that are fifty years old or older or that are included on a federal, state, or local historic property list.

26. Environmental Protection: The Borrower and Contractor shall comply with all applicable standards, rules or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857(h), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency

Regulations (40 CFR Part 15); and the standards and policies relating to energy efficiency contained in the State Energy Conservation Plan issued in compliance with the Energy Policy and Conservation Act.

27. Flood Disaster Protection: The Borrower shall comply with the requirements of the Flood Disaster Protection Act of 1973 (42 U.S.C. §4106) and implementing regulations in 44 CFR Part 59 through Part 79 in regard to the sale, lease or other transfer of land acquired, cleared or improved under the terms of this Agreement, as it may apply to the provisions of this Agreement.

28. Flood Insurance Program: Should any construction or alteration of existing structures with assistance provided under this Agreement occur in an area identified as having special flood hazards by the Director of Federal Emergency Management, the Borrower shall comply with all relevant and applicable provisions of 24 CFR §570.605 concerning the National Flood Insurance Program. The Borrower agrees that if any portion of the Property is located in a special flood hazard area that flood insurance will be required by the City and must be provided by The Borrower.

29. Permits: The Contractor shall be responsible for all fees for all necessary permits for intended improvements or activities on the Property.

30. Displacement, Relocation, Acquisition and Replacement of Housing: The Borrower shall comply with 24 CFR §570.606 and shall keep all records demonstrating compliance with these requirements including, but not limited to, those records required in 24 CFR §570.506.

31. Conflict of Interest: The Borrower and Contractor shall comply with the conflict of interest provisions as set forth in 24 CFR §570.611. In the procurement of supplies, equipment, construction and services, the Borrower and Contractor shall comply with the conflict of interest rules in 24 CFR §85.36. This rule states that no officer or employee of the City or its designees or agents or consultants, no member of the Roanoke City Council, and no other public official who exercises or has exercised any functions or responsibilities with respect to activities assisted with CDBG funds or who is in a position to participate in a decision-making process or gain inside information with regard to these activities, may obtain a financial interest or benefit from a CDBG-assisted activity, or have an interest in any contract, subcontract or agreement with respect thereto, or the proceeds thereunder, either for themselves or those with whom they have family or business ties, during their tenure or for one year thereafter. The Borrower and Contractor shall also keep records supporting their requests for waivers of conflicts.

32. Suspension and Termination: Notwithstanding anything to the contrary and in accordance with 24 CFR §85.43, suspension or termination of this Agreement and the award may occur if the Borrower or Contractor materially fails to comply with any term of the award. Also, the City may terminate this Agreement for convenience in accordance with 24 CFR § 85.44. Continued performance by either party pursuant to this Agreement, after default of any of the terms of this Agreement, shall not be deemed a waiver of any right to

terminate this Agreement for any subsequent default; and no waiver of any such default shall be construed or act as a waiver of any subsequent default.

33. **Faith Based Organizations.** Pursuant to the Code of Virginia, Section 2.2 - 4343.1, be advised that the City of Roanoke does not discriminate against faith-based organizations.

34. Contract Subject To Funding: This Contract is subject to funding and/or appropriations from federal, state, and/or local governments and/or agencies. If any such funding is not provided, withdrawn, or otherwise not made available for this Contract, the Contractor agrees that the City may terminate this Contract on seven (7) days written notice to Contractor, without any penalty or damages being incurred by the City. Contractor further agrees to comply with any applicable requirements of any grants and/or agreements providing such funding.

SECTION 3: DEFAULTS AND REMEDIES

1. Events of Default: The following shall constitute an Event of Default under this Agreement:

(a) Owner being convicted in a court of competent jurisdiction for violation of certain Code of City of Roanoke (1970) as amended, provisions after final acceptance of the Work. These include Chapter 7, Article II., Building Code; Chapter 20, Article VI., Keeping of Inoperable Motor Vehicle; Chapter 33, Article II., Weed and Trash Abatement.

(b) if the Borrower or Contractor fails to comply with any regulations governing CDBG awards, including, but not limited to, 24 CFR Part 570 or fails to comply with any of the terms contained in this Agreement and such failure continues for a period of thirty(30) days following written notice thereof given by the City;

(c) if the Borrower is deemed in default under the terms of other financing or deeds of trust used for the Property and said default extends beyond the applicable cure period provided in said documents;

(d) if at any time any material representation made by the Borrower or Contractor in any certification or communication submitted by the Borrower or Contractor to the City in an effort to induce the making of this Loan or the administration thereof is determined by the City to be false, misleading or incorrect in any material manner;

(e) if the Borrower or Contractor does not disclose to the City, upon demand, the name of all persons with who the Borrower or Contractor has contracted or intends to contract with for the construction or management of any portion of the Property, including contracts for services and/or labor and;

(f) if any other default occurs under any of the Note, Mortgage or any loan documents executed by the Borrower in connection with this Loan by the City (herein the "Loan Documents") which is not elsewhere specifically addressed herein and such default is not cured within the applicable cure period set forth in the Loan Documents, or if there is no cure period set forth, then within fifteen (15) days following the date of written notice to the Borrower and Contractor thereof.

Notwithstanding any of the forgoing provisions to the contrary, if the Borrower or Contractor. has failed to cure any default within (5) days prior to the expiration of any applicable cure period, the City may, at its sole option, cure such default, provided, however, that the City shall be under no duty or obligation to do so.

2. No Waiver: Failure of the City to declare a default shall not constitute a waiver of any rights by the City. Furthermore, the waiver of any default by the City shall in no event be construed as a waiver of rights with respect to any other default, past or present.

3. Remedies: Upon the occurrence of any uncured Event of Default, or any other breach of this Agreement, the City shall be free to terminate this Agreement, withhold all funding and/or exercise all rights and remedies available to it under the terms of this Agreement, the Loan Documents, under statutory law, equity, or under common law, in the City's sole discretion, including and not limited to, foreclosing on the Property under the deed of trust, Exhibit D, that secures the promissory note, Exhibit C. The City may also exercise any one or more of the actions contained in 24 CFR §85.43(a)(1-5). All remedies shall be deemed cumulative and, to the extent permitted by law, the election of one or more remedies shall not be construed as a waiver of any other remedy the City may have available to it.

4. Liquidated Damages: City and Contractor recognize that time is of the essence in the completion of the Work and that City will suffer loss or damages if the Work is not completed within the period of time stipulated above, plus any extensions thereof allowed in accordance with the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving the actual loss or damages suffered by City if the Work is not completed on time. Accordingly, if such Work is not fully and satisfactorily completed within the period of time set forth in Article 3, the Contractor agrees it shall owe to and pay to City as liquidated damages for loss of City's full use or occupancy of the Work, but not as a penalty, the sum of two hundred and 00/100 Dollars ($200.00) as step one liquidated damages and the sum of one hundred and 00/100 Dollars ($100.00) as step two liquidated damages for each consecutive calendar day during which full and satisfactory completion of the Work is delayed or exceeds the number of days provided for in this Contract to complete the Work. Steps one and two being defined in Section 21 of the General Conditions. Contractor further agrees that any liquidated damages City assesses against Contractor may also be withheld by City from any retainage or other sums City may otherwise owe to Contractor. Contractor hereby waives any defense as to the validity of any liquidated damages stated herein on the grounds such liquidated

damages could be void as penalties or are not reasonably related to actual damages. All such liquidated damages are in addition to any other damages the City may be entitled to recover from Contractor.

SECTION 4: INDEMNIFICATION AND INSURANCE

1. Indemnification: The Borrower and Contractor agree to defend, indemnify and hold harmless the City from and against any and all liability, claims, demands, damages, expenses, fees, fines, penalties, suits, proceedings, actions and costs of actions, including attorney's fees, whether or not suit is filed and if suit is filed, attorney fees and costs at all trial and appellate levels, including bankruptcy, of any kind and nature arising or growing out of or in any way connected with the performance of this Agreement by the Borrower, Consultant, or Contractor or because of or due to the existence of the Agreement itself.

2. Environmental Indemnification: The Borrower shall indemnify and hold the City harmless from any claim arising from, or in any way related to, the environmental condition of the Property, including, but not limited to, the cost of investigating, defending, and/or negotiating to a satisfactory conclusion claims made by environmental regulatory agencies, as well as all cleanup and property maintenance requirements imposed by any agency with lawful jurisdiction over the Property. This indemnification shall run from the time of initial discovery of any such adverse environmental condition and is not to be construed to commence only upon realization by the City of an actual pecuniary loss as a result of such adverse environmental condition. The existence of this indemnification agreement shall not be construed as indicia of ownership, management or control of the Property by the City, and the Borrower hereby recognizes and acknowledges that the City is not an owner or manager of the Property and does not exert any control thereupon. Notwithstanding anything herein, or in the other Loan Documents to the contrary, this indemnification provision shall survive the termination of this Agreement.

3. Borrower's Insurance: Without limiting the Borrower's indemnification, the Borrower shall maintain in force at all times during the performance of this Agreement all appropriate policies of insurance hereinafter described, concerning its operations. Certificates with valid and authorized endorsements, evidencing the maintenance and renewal of such insurance coverage shall be delivered to the City fifteen (15) days prior to commencement of construction. The City shall be given notice in writing at least fifteen (15) calendar days in advance of cancellation or modification of any policy of insurance. The City, its officers and employees shall be named as an additional named insured on all policies of liability insurance.

(a) All policies of insurance shall be in a company or companies authorized by law to transact insurance business in the State of Virginia. In addition, such policy shall provide that the coverage shall be primary for losses arising out of the Borrower's performance of the Agreement. Neither the City nor any of its insurers shall be required to contribute to any such loss. The

required certificate shall be furnished by the Borrower prior to execution of this Agreement.

(b) At least thirty (30) calendar days prior to the expiration of any of the above-referenced insurance policies, the Borrower shall provide the City with evidence of the renewal of said insurance policies in a form satisfactory to the City.

(c) The policies and insurance which must be secured are:

1. Commercial General Liability Insurance: The Borrower must secure commercial general liability insurance to include, but not be limited to bodily injury and property damage coverage. The policy's liability limit amount shall not be less than Five Hundred Thousand Dollars ($500,000) per person/ per occurrence for bodily injury to, or death to one or more than one person and not less than One Hundred Thousand Dollars ($100,000) per occurrence for property damage.

2. Workers' Compensation Coverage: All employees of the Borrower must be included under such policy in an amount and with coverage to meet all requirements of the State of Virginia law.

3. Flood Insurance: The Borrower shall provide flood insurance as required under applicable HUD regulations.

4. Contractor and Subcontractor Insurance.

Neither the Contractor nor any subcontractor shall commence work under this Contract until the Contractor has obtained and provided proof of the required insurance under this Section to the City. The Contractor confirms that all subcontractors have provided the Contractor with proof of insurance. Contractor further warrants that proof of coverage as provided to the City responds on a primary basis in the event of an uninsured or underinsured subcontractor. All such insurance shall be primary and non-contributory to any insurance or self-insurance the City may have in force.

For All Contracts, the following minimum insurance requirements apply:

a. Workers' Compensation and Employers' Liability:

The Contractor shall obtain and maintain the following limits:

Workers' Compensation: Statutory

Employers' Liability: $100,000 bodily injury by accident each occurrence

$500,000 bodily injury by disease (policy limit)

$100,000 bodily injury by disease each employee

b. Commercial General Liability:

Coverage is to be written on an "occurrence" basis and such coverage shall include broad form extension endorsements for both liability and property damage.

Completed Operations coverage will be required to be maintained for the life of the Contract.

For Limits of Liability see Sections 4.2 and 4.3 of these General Conditions.

c. Automobile Liability:

Limits for vehicles owned, non-owned, hired or borrowed shall not be less than:

- $1,000,000 Bodily Injury and Property Damage combined single limit per occurrence.

d. Additional Insurance Requirements:

Additional specific insurance coverage minimum requirements to be provided by Contractor may include the following as detailed in the Supplemental General Conditions:

1) Builders Risk: At the discretion of the City, the Contractor, at its cost, shall obtain and maintain in the names of the City and the Contractor "all-risk" builders risk insurance (if approved by the City) upon the entire structure or structures on which the Work of this Contract is to be done and upon all material in or adjacent thereto or those that are “off-site” but which are intended for use thereon, to one hundred percent (100%) of the completed value thereof.

2) Property Coverage: Installation Floater (and Rigger's Form, if applicable) will be required for the installation of contents or equipment; coverage will begin with supplier and continue until equipment/contents have been fully installed. Floater will be valued for the replacement cost value of equipment/contents including all costs. The Contractor shall provide coverage for portions of the work stored off-site after written approval of the City at the value established in the approval and for portions of the work in transit.

3) Special Hazards: In the event special hazards are evident in the work contemplated, or if required by the Contract Documents, the Contractor shall obtain and maintain during the life of the Contract a rider to the policy or policies required, in an amount not less than that stipulated under the above Paragraphs. Should any unexpected special hazards be encountered during the performance of this Contract, the Contractor shall, prior to performing any work involving the special hazard, immediately obtain this insurance as instructed by the City. In the event the special hazard requiring the additional coverage was not a part of the original bid,

the expense of such insurance shall be reimbursed to the Contractor by the City, otherwise the Contractor shall assume full responsibility for the purchase with no charge back to the City.

4) Deductible: Deductible/self-insured retention amounts shall be reduced or eliminated upon written request from City. The insurer's cost of defense (and appeal), including attorney's fees, shall not be included within the coverages provided but shall remain the insurer's responsibility.

5) Term: Insurance shall remain in effect until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective work.

6) Limit of Liability: Nothing contained in these insurance requirements is to be construed as limiting the liability of Contractor or Contractor's insurance carriers. City does not in any way represent that the coverage's or the limits of insurance specified is sufficient or adequate to protect Contractor's interests or liabilities, but are merely minimums. The obligation of the Contractor to purchase insurance herein shall not in any way limit the obligation of the Contractor in any event and/or in the event that the City should suffer an injury or loss in excess of the amount recoverable through insurance.

Contracts of $100,000 or More: The following minimum insurance requirements apply in addition to the above requirements:

a. Limits of Liability: For the Commercial General Liability policy:

- $2,000,000 general aggregate
- $1,000,000 products/completed operations aggregate
- $1,000,000 personal and advertising injury
- $1,000,000 each occurrence

Coverage is to be written on an "occurrence" and "per project" basis and such coverage shall include:

b. Umbrella Liability Insurance:

This coverage shall be written for minimum limit of:

- $5,000,000 each occurrence for Personal and Bodily Injury and Property Damage

This Policy shall apply in excess and follow form of employer's liability, commercial general liability, and auto liability.

Contracts Less Than $100,000: The following minimum insurance limits apply unless specified otherwise in the Supplemental General Conditions:

a. Limits of Liability: For the Commercial General Liability policy:

- $1,000,000 general aggregate
- $1,000,000 products/completed operations aggregate
- $1,000,000 personal and advertising injury
- $1,000,000 each occurrence

Proof of Insurance Coverage: The policies of insurance required by Sections 4.1, 4.2, or 4.3 shall be purchased from a reputable insurer licensed to do business in Virginia and maintained for the life of the Contract by the Contractor. Other insurance requirements include the following:

a. The Contractor shall furnish the City with the required certificates of insurance showing the insurer, type of insurance, policy number, policy term, deductible, and the amount insured for property coverage's and the limits for liability coverage's.

b. The Contractor shall notify Transportation Division Manager and Risk Manager in writing within thirty (30) consecutive calendar days if any of the insurance coverage's or policies are cancelled or materially altered and Contractor shall immediately replace such policies and provide documentation of such to Transportation Division Manager and Risk Manager.

c. The required insurance policies and coverages, excluding those for Workers Compensation and Professional Liability, shall name the City of Roanoke, its officers, agents, volunteers and employees as additional insured's and the certificate of insurance shall show if the policies provide such coverage. Waiver of subrogation is required with respect to any policy of workers' compensation and employers' liability insurance required under this Section. The certificate of insurance shall show if the policies provide such waiver. Additional insured and waiver endorsements shall be received by the City's Risk Manager from the insurer with the certificate of insurance unless the City's Risk Manager agrees to another process. The City's Risk Manager may approve other documentation of such insurance coverages.

d. Insurance coverage shall be in a form and with an insurance company approved by the City which approval shall not be unreasonably withheld. Any insurance company providing coverage under this Contract shall be authorized to do business in the Commonwealth of Virginia.

Contractor's Certificate of Insurance is attached hereto as Exhibit J.

SECTION 5: MISCELLANEOUS PROVISIONS

1. Assignment: The Borrower or Contractor shall not assign or transfer any interest in this Agreement without the prior written consent of the City.

2. No Grant of Vested Rights: This Agreement shall not be construed as granting or assuring or vesting any land use, zoning, development approvals,

permission or rights with respect to property owned or to be acquired by the Borrower.

3. No partnership or agency: Nothing in this Agreement is intended to, or shall be construed in any manner, as creating or establishing the relationship of master/servant, principal/agent, employer/employee or joint venture partner between the City, the Borrower and the Contractor. The City shall be exempt from payment of all Unemployment Compensation, FICA, retirement, life and/or medical insurance and Worker's Compensation Insurance. The Borrower and Contractor agree and acknowledge that each shall be responsible for and shall pay any and all applicable compensation, insurance and taxes, including but not limited to federal income taxes and Social Security on the salary of any positions funded in whole or in part with CDBG funds.

4. Severability: This Agreement shall be construed in accordance with the laws of the State of Virginia and federal law. It is agreed by and between the parties that if any covenant or condition, provision contained in this Agreement is held to be invalid by any court of competent jurisdiction, such invalidity shall not affect the validity of any other covenants, conditions or provisions herein contained.

5. Entire Agreement/Modification: This Agreement, together with Exhibits "A"-"J", constitutes the entire Agreement between the parties hereto with respect to the subject matter hereof; any representations or statements heretofore made with respect to such subject matter, whether written or verbal, are merged herein. This Agreement may only be modified in writing, and such modification must be signed by all of the parties hereto.

6. Notices: Whenever by the terms of this Agreement notice shall or may be given to either party, such notice shall be in writing and shall be hand-delivered or sent by certified mail, return receipt requested, postage prepaid to:

A. Keith Holland, Community Resources Program Administrator
City of Roanoke
215 Church Ave SW, Room _____
Roanoke, Virginia 24011

Copy to: City of Roanoke
Purchasing Division
Attn: Purchasing Manager
Noel C. Taylor Municipal Building, Room 202
215 Church Avenue, SW
Roanoke, Virginia 24011

B. [Owner name and title]
[Address].
[city, state, zip]

C. [Contractor name and title]
[Business name]

[Address]
[city, state, zip]

7. Compliance with all Laws: Notwithstanding anything herein to the contrary, the Property shall be operated consistent with all applicable federal, state and local laws and regulations.

8. Venue and Choice of Law-The parties agree that any disputes concerning this Agreement shall be heard in a court of competent jurisdiction, located in the City of Roanoke, Virginia, applying the laws of the Commonwealth of Virginia without regard to its choice of laws provisions.

9. Nonwaiver: Contractor agrees that the City's waiver or failure to enforce or require performance of any term or condition of this Contract or the City's waiver of any particular breach of this Contract by the Contractor extends to that instance only. Such waiver or failure is not and shall not be a waiver of any of the terms or conditions of this Contract or a waiver of any other breaches of the Contract by the Contractor and does not bar the City from requiring the Contractor to comply with all the terms and conditions of the Contract and does not bar the City from asserting any and all rights and/or remedies it has or might have against the Contractor under this Contract or by law.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement and have set their hands and seals this _____ day of _____, 2016.

(SEAL)

ATTEST:

_____
Keith Holland, Community Resources Program Administrator
Planning, Building and Development Dept
Roanoke, Virginia

CITY OF ROANOKE

By: _____
Christopher P. Morrill, City Manager
Roanoke, Virginia

APPROVED AS TO FORM AND LEGALITY
for the use and reliance of the
City of Roanoke, Virginia, only.

_____
Daniel Callaghan., City Attorney
Roanoke, Virginia

COMMONWEALTH OF VIRGINIA
CITY OF ROANOKE

The foregoing instrument was acknowledged before me this ___ day of _____, 2016, by Christopher P. Morrill, City Manager, City of Roanoke, Virginia, a municipal corporation, on behalf of the corporation.

WITNESS my hand and official seal this ____ day of _____, 2016.

_____
Notary Public
Print Name:_____
My commission
expires:_____
Registration No.:
_____

_____
(Borrower)

By:_____
Print Name: _____
Title:_____

_____
(Contractor)

By:_____
Print Name:_____

Title: _____

(CORPORATE SEAL)

COMMONWEALTH OF VIRGINIA
CITY OF ROANOKE

The foregoing instrument was acknowledged before me this ___ day of _____, 2016, by _____, (title) (business/owner)_____, a Virginia limited liability corporation, on behalf of the corporation.

WITNESS my hand and official seal this ____ day of _____, 2016.

_____
Notary Public
Print Name:_____
My commission
expires:_____
Registration No.:
_____

COMMONWEALTH OF VIRGINIA
CITY OF ROANOKE

The foregoing instrument was acknowledged before me this ____ day of _____, 2016, by _____, (title, company)_____, a limited partnership, on behalf of the limited partnership.

WITNESS my hand and official seal this ___ day of _____, 2016.

_____
Notary Public
Print Name:_____
My commission
expires:_____
Registration No.:
_____

EXHIBIT A
WEST END FAÇADE PROGRAM GUIDELINES

CITY OF ROANOKE, VA

WEST END COMMERCIAL FACADE PROGRAM GUIDELINES

Approved August 2014
Amended August 2015

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SECTION 1: PROGRAM ADMINISTRATION

PROGRAM OBJECTIVES

The City of Roanoke is committed to providing financial assistance to private property owners for the rehabilitation of commercial storefronts and facades within portions of the West End Target Area. The designated project area is shown on the map attached to this program design (Attachment A). The City is prepared to offer both financial assistance and technical design assistance to property owners in order to improve the appearance and economic viability of the identified project area. The City believes that it is in the public's interest to improve the aesthetics of the project area to stimulate reinvestment in commercial properties. Restoration of the facades of privately owned commercial buildings would eliminate blight and deterioration, thus removing impediments to economic growth. HUD Community Resources, a division of the City's Department of Planning, Building and Development, has established the West End Commercial Façade Program to:

1. Promote an economically viable and harmonious corridor that attracts and provides for the needs of businesses, residents, and shoppers;

2. Contribute to elimination of visual clutter detrimental to an attractive commercial center by eliminating incompatible building materials, colors, and signs;

3. Restore blighted storefronts and other property elements visible from the public rights-of-way to a level where they are compatible with their surroundings and aesthetically pleasing;

4. Promote economic development that benefits low and moderate income people by providing an incentive for property owners to renovate their buildings for occupancy by new or expanding businesses.

PROGRAM DESCRIPTION

The HUD Community Resources Division (HCR) has budgeted up to $25,000 per building to provide matching grants/deferred loans to property owners within the revitalization area for storefront improvements. The matching grant/deferred loan must be applied to physical construction of exteriors. These funds will be used as a one-third match not to exceed $25,000. HCR has also budgeted up to $5,000 per building for architectural design assistance for the businesses.

The CDBG matching grant/deferred loan is strictly for improvements to the exterior of the building visible from the public right-of-way. This generally excludes repairs to the building's roof, unless such improvements clearly contribute to enhancing the visual environment, or the roof has been identified as having building code violations. The matching grant/deferred loan may be applied to the front facade, rear, and exposed side(s) of buildings. Each façade improvement applied for will be ranked based on the location of the façade on the building exterior with relation to the principal entrance of the business(es) located therein. Façade improvements to principal entrances will be given precedence over non-principal entrance improvements.

The property or business owner must match the grant/deferred loan amount on a 2:1 ratio with other exterior or interior improvements to the building, or with site improvements designed to address a specific blight condition on the lot. If the commercial structure is located within the boundaries of Enterprise Zone One A (Attachment C), property owners are encouraged to apply for the Enterprise Zone Façade Grant offered by the City's Department of Economic Development should the structure be deemed eligible for the program, and may be applied as part of the owner's two-thirds match. Improvements to the building's interior and/or parking lots and grounds may be used toward the owner's match, but must be completed prior to the exterior façade work. Any approved improvements to the interior and/or parking lot or grounds undertaken within 1 year prior to the application may be applied toward the owner's two-third match. Any other interior and/or parking lots or grounds improvements that will be done after the application is approved must be completed with supporting documentation prior to the exterior improvements. The matching grant/deferred loan program will be administered by the HCR and will be available from July 1, 2014 until funds are exhausted or until the program year ends on December 31, 2015. The program may be extended if the Roanoke City Council approves subsequent funding after the 2014 program year. Recipients of matching grants/deferred loans will be required to execute a legally binding agreement with the City for a period of no less than 5 years for full deferment.

IMPROVEMENT STANDARDS

The City will review and preapprove all rehabilitation work proposed under this program. The City will not mandate specific rehabilitation standards, but will work closely with each applicant and the consulting architect to devise appropriate designs that are in compliance with any adopted or to be adopted zoning ordinances and HUD Section 106 requirements. Any design will be unique to the character of the building being rehabilitated as well as fit in with the character of any surrounding structures.

Exterior finishes should be of reasonably permanent, durable materials appropriate for the building and its location. All windows and doors replaced under this program will be Energy Star rated. Any exterior lighting fixtures replaced under this program will be energy efficient fixtures. All exposed facades of existing buildings should present a finished appearance in character with the remainder of the building. An economy of maintenance is important as well as producing a harmonious relationship with neighboring buildings.

SECTION 2: ELIGIBILITY CRITERIA

ELIGIBILITY REQUIREMENTS

All non-government-owned buildings that house for-profit enterprises with current business licenses and owing no back taxes within parts of the West End Commercial Façade District as specified by the attached map are eligible for assistance through this program. The City will use a point system to rank each storefront improvement job pending approval. The project receiving the most cumulative points will be funded first, and so on until funds are exhausted unless the City determines that applications do not meet the intent of the program. The points assigned will be as follows:

Building condition rating:	**Points**	**Weight**
Sound	1	4
Minor deficiencies	2	
Deteriorating	3	
Major deficiencies	4	
Substantially dilapidated	5	

*** Leveraged investment:**	**Points**	**Weight**
200-249% match	1	3
250-299% match	3	
300%+ match	5	

*-Includes sources from other grants/loans

Façade Location on Building:	**Points**	**Weight**
Non-Business Entrance	1	2
Loading Dock/Back of Building	1	
Secondary Business Entrance	2	
Principal Business Entrance	5	

Current Use:	**Points**	**Weight**
Vacant with no lease	1	2
Vacant with pending lease	3	
Existing business	5	

The total point score for each proposed job will be calculated by multiplying the point total for each criterion by the weight assigned to that criterion, and then adding the four categories.

All applications submitted must meet minimum threshold guidelines in order to be considered for program funding. All applicants must earn a minimum of 25 Points when ranked on the above criteria.

The City reserves the right to deny funding to any application received based on failure to meet expected thresholds as outlined in this program design.

Every activity funded by the City's Community Development Block Grant Program must meet one of the three national objectives that govern the CDBG Program. The national objective the commercial façade program will meet is the aid in the elimination or prevention of slum/blight on an area basis.

In order for the commercial area to qualify, at least 25% of the properties throughout the area experience one or more of the following conditions: physical deterioration of buildings or improvements; abandonment of properties; chronic high occupancy turnover rates or chronic high vacancy rates in commercial or industrial buildings; significant declines in property values

or abnormally low property values relative to other areas in the community or; known or suspected environmental contamination.

APPLICATION PROCESS/TECHNICAL ASSISTANCE

The HUD Community Resources Office will accept applications from the identified property owners on the following deadlines: January 1, 2015, April 1, 2015, July 1, 2015 and October 1, 2015. As a first step, the owner should fill out an application for assistance. The application should identify the building and its owner, request design assistance, and include a brief summary of the proposed matching investment. Such application must be made on a form provided by the City, and must be signed by all property and business owners. The application form can be found as Attachment B. Any applications for matching funds from the City's Department of Economic Development will need to follow requirements for those funds. Contact the Department of Economic Development at 540-853-5405 for eligibility and application assistance.

After receiving the application, the City will provide preliminary architectural services allocated through the CDBG Program Funds (i.e., design development services). The project architect will conduct a site inspection and consult with the owner in developing a façade upgrade design with preliminary cost estimates. The architect's presentation will include a color rendering of the storefront/facade treatment with notes sufficient to describe the proposed work. Upon request, the architect will also assist in generally identifying other needed improvements to the building (i.e. interiors, roof, HVAC) that the owner could consider in meeting the matching investment requirement. The owner may ask the architect to conduct detailed investigations or prepare plans for such improvements, but these shall be at the owner's expense by separate agreement with the architect.

The architect will provide sufficient data to assist contractors in preparing accurate bids and performing the required work. The City will refer the application and suggested work for approval to the West End Roundtable Committee. The Committee is responsible for approving the design, the intended matching investment amount, and readiness for bid. The architect's work write-up will serve as the agreed scope of work for obtaining quotes or competitive sealed bids from contractors (see bidding procedure described below).

The City will place the job out for bid upon approval of the application by the West End Roundtable Committee, in accordance with the Virginia Public Procurement Act and Federal Labor Standards.
After bids are received, the City will prepare three-party contract documents for execution by the building owner, the City, and the contractor. Construction can begin after building permit approval.

SECTION 3: MATCH REQUIREMENTS

PRIVATE INVESTMENT MATCH REQUIREMENTS

Property or business owners must match the CDBG grant/deferred loan 2:1. The owner can meet the match requirement in three ways:

1) If the desired work is limited to facade, rear, exposed side, and site improvements, the owner can opt to finance 67 percent of the total dollar value of the improvements through an actual cash contribution or a loan from a lending institution.

2) If the basis for the match includes interior or exterior site work the owner has completed or will complete at the time of the contracted façade improvement work, he/she must commit to undertaking, at a minimum, a two for one equivalent dollar value of improvements. Such improvements must be satisfactorily completed prior to the façade work commencing. Approved work performed within 12 months of the façade application may be counted toward the owner's match, provided that accurate supporting documentation can be produced showing the value of such improvements. Routine maintenance will not count toward the owner's match.

3) The owner may apply to the City's Department of Economic Development for an Enterprise Zone One A Commercial Façade Grant for one-third of the project cost up to $25,000. Guidelines for this program can be found in Attachment D.

All match amounts will be based on the final contractor quote or bid price accepted by the City.

When interior improvements are to be used as match for the façade rehabilitation program, all interior improvements must be completed before exterior improvements will be performed. Leaving the exterior improvements incomplete will cause forfeiture of the contract and all funds will be due and payable to the City of Roanoke.

Prior to approving an application for assistance, the West End Roundtable Committee must have adequate assurance that the owner has the financial resources to meet the approved match amount. If the approved matching amount is a cash contribution toward the cost of the contracted improvements, the owner must agree to escrow the matching funds with the City promptly upon request so that the City can pay contractor invoices in a timely fashion.

CONDITIONS OF THE MATCHING GRANT/DEFERRED LOAN

The City of Roanoke will make up to a maximum $25,000 matching grant/deferred loan per storefront to qualified applicants. A storefront shall be defined as a façade having first-floor street/sidewalk/alley frontage, its own exterior door, ground-floor leasable space, and its own street address number. A building may have more than one storefront.

The matching grant/deferred loan will be made for a five- (5) year term at zero percent (0%) interest. The deferred loan will be entirely forgiven at the end of the five-year period and the property lien removed if the applicant has met the following conditions:

1) The property owner has completed the facade improvements in accordance with the CDBG program guidelines and has done so within six (6) months of bid acceptance, unless the City grants a request for extension of time. All properties receiving CDBG funds must be free of blight once the construction is complete.

2) The property owner has continued to maintain the façade in a satisfactory condition. Any court conviction of violations of city building or property maintenance codes will

automatically default the loan.

3) The owner of the building at the time of the loan approval has retained ownership of the improved property during the five-year period. If the owner sells the property within the five-year term, or otherwise voluntarily transfers ownership, the balance on the loan note will become due and payable on a prorated basis (20% of deferred loan forgiven per year). The loan can also be assumed if the property is sold or transferred by the new ownership if the new owner(s) is willing to take on all the terms of the loan. The City must grant written approval prior to any loan assumption.

4) The building to be improved must have a current tenant operating a business or must be occupied by a tenant operating a business within one year after the improvements are completed, unless the City grants a request for extension of time.

In addition, property owners will be expected to continue maintaining the improvements beyond the term of the deferred loan. This expectation will be incorporated into the application and loan documents, and will be enforced by the City through its property maintenance ordinance.

All CDBG funds returned to the City through enforcement of these conditions shall be considered program income. The City will use any such program income to further the program goals of the CDBG program.

SECTION 4: BIDDING, CONTRACT, INSPECTIONS, & PAYMENT PROCESS

The goal of these procedures is to minimize the time and complexity of applying for assistance, while meeting HUD requirements for use of CDBG funds. In this way, the City hopes to maximize participation by eligible West End Target Area property owners.

All jobs involving CDBG funds must be bid by the City, which shall select the winning bidder in accordance with the Virginia Public Procurement Act. The winning bidder must also be acceptable to the owner. The City will then execute a three-party contract with the contractor and the owner.

A formal contract and lien must secure each job involving CDBG assistance. The City will prepare these documents for execution by the owner. Prior to execution of the contract documents, the owner of the structure to be improved must provide evidence of ownership such as a deed or tax receipt. The City will require written documentation from the owner that the structure is covered by all-hazard insurance in a sufficient amount to protect the City's investment in the improvements. An applicant must not owe past-due taxes to the City of Roanoke.

The three-party contract will outline each party's responsibilities and the work description. In addition to the contract, a deed of trust (voluntary lien) will be executed by the owner and the City and subsequently recorded in order to secure the loan. A building permit is required, but the fees may be applied to the owner's match. The project architect will

inspect the work for compliance with the description of work to be performed and a City Building Official will inspect the work for compliance with all applicable codes.

Progress payments to the contractor will be released no less than every 25% following a satisfactory interim inspection and pay approval by the HUD Community Resources Office and the project architect. Otherwise, the total loan amount will be released in one (1) 100% payment after the construction work is complete.

In addition, all other work completed on the subject property participating in the façade program must have all applicable permits, pass required inspections and obtain a certificate of occupancy if appropriate.

Section 5: Program Time Frame

Matching grants/deferred loans will be available to qualified applicants from July 1, 2014 until funds are exhausted or until the program year ends on December 31, 2015. The program may be extended if the City of Roanoke allocates subsequent funding after the 2015 program year.

Applicants receiving funding will have 180 days from date of approval by the West End Roundtable Committee to submit an approved scope of work with accompanying architectural plans to be put out to bid. These documents include all building permits and zoning approvals, building/site plan approvals and any other approvals or documents as may be required. Failure by any applicant to meet these deadlines may result in rescission of the grant award.

Section 6: Program Income

Any CDBG funds recaptured during implementation of the West End Commercial Façade Program will be used to recapitalize any eligible CDBG program and not necessarily the façade program. Recaptured funds, if any, are expected to come only from prorated repayment of grants/deferred loans due to non-compliance with terms. Recaptured CDBG funds will thus be used to further eliminate slums and blight in Roanoke, removing obstacles to economic development.

Section 7: Complaints and Appeals Procedure

Oral complaints of any nature and by any party shall be documented and resolved by the Project Manager as informally and quickly as possible. Written complaints received by the Director of Planning, Building and Development will be resolved and documented in consultation with the West End Roundtable Committee. The person making the complaint will be notified in writing of the decision, where a non-legal resolution is final. All written complaints will be addressed within fifteen (15) days of receipt and resolved within thirty (30) days and documentation retained for review. Beyond this step, the complainant may seek a legal remedy in the local court of jurisdiction at complainant's own cost.

Section 8: Recordkeeping

The Project Manager will be responsible for tracking the number of businesses assisted by, and participating in, façade or renovation improvements. Documentation of private investments made by property owners within the project area must be through source documentation (such as invoices, construction contracts, etc.).

Section 9: Program Design Amendments

During implementation of the West End Target Area Commercial Façade Program the City may find it necessary to make minor changes and refinements as the program proceeds. If a major alteration to this design is deemed necessary to better achieve the intent of the program, the HUD Community Resources Office will adopt the changes upon approval of the West End Roundtable Committee. The West End Commercial Façade Program will be implemented to assure consistent and equitable assistance to all program participants.

EXHIBIT B
SCOPE OF WORK/SPECIFICATIONS
BID FORM

TO BE ADDED AFTER SELECTION OF SUCCESSFUL BIDDERS.

EXHIBIT C
PROMISSORY NOTE

EXHIBIT "C"

CITY OF ROANOKE
COMMUNITY DEVELOPMENT BLOCK GRANT
PROMISSORY NOTE

[date]

U.S. [amount] **Roanoke, Virginia**

For value received, the undersigned promises to pay the City of Roanoke, a Virginia municipal corporation (the "City" or "Holder"), the principal sum of _____ Dollars and No Cents ($_____). Said principal shall be payable at 215 Church Ave SW, Roanoke, Virginia 24011, or at such other place as the holder hereof may designate in writing, in one (1) principal installment of _____ due on _____, 2021; however if the Borrower remains in good standing for the duration of the sixty (60) month term of the compliance period for the City of Roanoke Community Development Block Grant Promissory Note (the "Note") or under the other Loan Documents, as hereafter defined, the debt evidenced by this Note shall be forgiven in its entirety.

At the option of the holder hereof, this Note shall become immediately due and payable, without notice or demand upon the occurrence of any one of the following events: (i) failure to pay any sum when due; (ii) any material misrepresentation or omission of or on behalf of Borrower made to holder in connection with this loan; (iii) sale or transfer, whether involuntary or otherwise, of any of the Property which is security for this Note to an entity unrelated to the Borrower; (iv) refinance of the Property on a "cash out" basis without prior approval from the City; (v) failure to start or complete the rehabilitation of the Property in the timeframes set forth in the Loan Agreement; (vi) failure to complete the rehabilitation of the Property as proposed in the Loan Agreement; and (vii) default or breach of any of the terms contained in the Deed of Trust or other Loan Documents. The holder hereof may exercise this option to accelerate during any default by the undersigned regardless of any prior forbearance. In the event of any default under this Note, and if the same is referred to an attorney at law for collection or any action at law or in equity is brought with respect hereto, the undersigned shall pay the Holder of all expenses and costs, including, but not limited to, attorney's fees.

If any default under this Note remains uncured for thirty (30) calendar days or more following the Holder sending written notice to Borrower of such default, the outstanding principal balance of this Note shall bear interest during the period in which the undersigned is in default at a rate of ten percent (10%) per annum, or, if such increased rate of interest may not be collected from the undersigned under applicable law, then at the maximum increased rate of interest, if any, which may be collected from the undersigned under applicable law. Unless forgiven, in writing, by the holder hereof, unpaid, accrued default interest shall be added to the then outstanding principal indebtedness.

From time to time, without affecting the obligation of the undersigned or the successors or assigns of the undersigned to pay the outstanding principal balance of this Note and observe the covenants of the undersigned contained herein, without affecting the guaranty of any

person, corporation, partnership or other entity for payment of the outstanding principal balance of this Note, without giving notice to or obtaining the consent of the undersigned, the successors or assigns of the undersigned or guarantors, and without liability on the part of the holder hereof, the holder hereof may, at the option of the holder hereof, extend the time for payment of said outstanding principal balance or any part thereof, reduce the payments thereon, release anyone liable on any of said outstanding principal balance, accept a renewal of this Note, modify the terms and time of payment of said outstanding principal balance, join in any extension or subordination agreement, release any security herefor, take or release other or additional security, and agree in writing with the undersigned to modify the rate of interest or period of amortization of this Note or change the amount of the monthly installments payable hereunder.

The maker of this Note hereby waives demand, presentment, notice of dishonor and protest. This Note shall be the joint and several obligation of all makers, sureties, guarantors and endorsers and shall be binding upon them and their successors and assigns.

The debt evidenced by this Note is secured by a Deed of Trust of even date herewith, covering the property located at _____, Roanoke, Virginia (the "Property") as more fully described in the Mortgage.

The term "Loan Documents" when used herein shall mean, collectively, the following documents: (i) this Note; (ii) the Deed of Trust; (iii) the Community Development Block Grant Program Loan Agreement ("Loan Agreement"); (iv) Declaration of Restrictive Covenant; and (v) all other documents or agreements arising under, related to or made in connection with the loan evidenced by this Note, as such Loan Documents may be amended.

The undersigned represents that the loan evidenced by this Note is being made solely for business, commercial or investment purposes.

The validity of this Note and the other Loan Documents, each of their terms and provisions and the rights and obligations of the undersigned under this Note, and the other Loan Documents shall be governed by, interpreted, construed and enforced pursuant to and in accordance with the laws of the State of Virginia. The undersigned agrees that any controversy arising under or in relation to this Note, Loan Agreement, the Deed of Trust or any other Loan Documents shall be litigated exclusively in the State of Virginia. The state and federal courts and authorities with jurisdiction in the State of Virginia shall have exclusive jurisdiction over all controversies which may arise under or in relation to this Note, including without limitation those controversies relating to the execution, interpretation, breach, enforcement or compliance with this Note, the Mortgage or any other issue arising under, related to or in connection with any of the Loan Documents. The undersigned irrevocably consents to service, jurisdiction, and venue of such courts for any litigation arising from this Note, Deed if Trust or any of the other Loan Documents, and waives any other venue to which it might be entitled by virtue of domicile, habitual residence or otherwise.

The provisions of this Note, the Deed of Trust, Loan Agreement and all other Loan Documents shall be binding on the successors and assigns, including, but not limited to, any receiver, trustee, representative or other person appointed under foreign or domestic bankruptcy, receivership or similar proceedings of the undersigned and any person having an

interest in the undersigned.

By signing below, the undersigned accepts and agrees to the covenants and agreements contained in this Note.

_____

(Corporate Seal)

By:_____
Name:
Title:

EXHIBIT D
DEED OF TRUST

EXHIBIT "D"

DEED OF TRUST

THIS DEED OF TRUST, made and entered into this _____ day of _____, 2016, by and between _____, a Virginia limited liability company, GRANTOR (the "Owner"), whose address is _____, Roanoke, Virginia 240__; Christopher P. Morrill, City Manager, City of Roanoke, Virginia, whose address is 215 Church Ave SW, Roanoke, Virginia, 24011, GRANTEE (the "Trustee"); and City of Roanoke, Virginia, a Virginia municipal corporation, ("City") BENEFICIARY, and holder of the secured note, whose address is 215 Church Ave SW, Roanoke, Virginia 24011;

WITNESSETH:

WHEREAS, pursuant to the Community Development Block Grant Loan Agreement executed on approximate even date herewith, the BENEFICIARY has agreed to provide a loan to GRANTOR in the total amount of **$_____** (the "Loan"); and,

WHEREAS, the BENEFICIARY has demanded as a condition of the Agreement that the GRANTOR convey its interest in the property described in Exhibit A attached hereto and incorporated herein by reference and all the improvements now or hereafter located thereon, in trust, to the GRANTEE, for the benefit of the BENEFICIARY, holder of the Community Development Block Grant Promissory Note ("Note"), as security for the Loan from the BENEFICIARY to the GRANTOR as more particularly set forth herein and in the Note of even date herewith;

NOW, THEREFORE, in consideration of the foregoing, and in consideration of securing the hereinafter described indebtedness, the GRANTOR does hereby GRANT and CONVEY, with covenants of General Warranty of Title, unto the GRANTEE, as TRUSTEE, all that certain lot or parcel of land, with all improvements thereon and appurtenances thereunto belonging, situate, lying and being in the City of Roanoke, Virginia, more particularly described in Exhibit A, attached hereto and made a part hereof, and commonly known as _____, Roanoke, Virginia 240--, Tax Map Number _____.

TOGETHER WITH all buildings, improvements, and fixtures now or hereafter erected thereon, and also together with all easements relating to the Property, as well as any unearned hazard insurance premium with respect to such property, all of which are hereby pledged, assigned, transferred and set over unto the TRUSTEE, whether now due or hereafter to become due. All of the foregoing realty and personalty are hereafter sometimes referred to as the "Property."

AND, as additional security for the payment of the indebtedness and performance of the covenants set forth in the Note and/or Deed of Trust, the GRANTOR hereby transfers set over and assign to the TRUSTEE all judgments, awards of damages, settlements and compensation made in connection with or in lieu of a) any taking of the Property by or under assertion of the power of eminent domain, b) any damage to or destruction of the Property by insured casualty, and c) any other injury or damages to the Property. The TRUSTEE is authorized and

empowered (but not required) to collect and receive any such sums and is authorized to apply them in whole or in part to the reduction of the indebtedness and/or to the performance of the covenants set forth in the note and/or this deed of trust.

IN TRUST to secure the BENEFICIARY, its successors and assigns, the payment of the GRANTOR'S Note of even date herewith payable to BENEFICIARY, or ORDER, in the principal sum of _____ 00/100 dollars **($_____.00)**, with interest at a rate of ZERO percent (0%) per annum, which if not sooner paid shall be due and payable on **_____, 2021**, and to secure any extensions or renewals of same.

If the GRANTOR of said Note defaults in any covenant herein set forth or set forth in the note secured hereby, the BENEFICIARY, or any holder of said note, at its election may declare the entire debt and note evidencing the same immediately due and payable.

The GRANTOR further covenants and agrees as follows.

1) GRANTOR shall pay without demand all indebtedness and shall fully perform without demand all covenants, when such payments or performances are due.

2) GRANTOR shall pay when due all amounts and shall perform all covenants secured by any deed of trust recorded prior to this deed of trust. The GRANTOR also shall pay, when due, all claims of every kind and nature which might or could become a lien on the property or any part hereof having priority over the lien of this deed of trust, and the GRANTOR shall not at any time create or allow to exist any prior lien on the Property or any property thereof of whatsoever kind or nature other than those specifically approved by the BENEFICIARY; provided, however, that the following are excepted from the foregoing: a) liens for taxes and assessments which are not delinquent although by law are given the status of a lien and b) such of the above claims are, and during the time they are being contested by the GRANTOR in good faith and by appropriate legal proceedings, but the GRANTOR shall post such security for the payment of such contested claims as is requested by the BENEFICIARY.

3) GRANTOR shall promptly repair, restore or rebuild any part of the Property that may become damaged or destroyed while subject to the lien of this deed of trust. GRANTOR shall not commit or suffer waste of the Property. GRANTOR shall not commit or suffer to be done or exist on or about the Property any condition whereby the Property shall become less valuable. Without prior permission, GRANTOR shall not remove or demolish the Property. GRANTOR shall comply with all applicable laws, ordinances, regulations, covenants, conditions and restrictions affecting the Property, and not suffer or permit any violations thereof.

4) The BENEFICIARY and its agents may make reasonable entries upon and inspections of the Property. The BENEFICIARY shall give the GRANTOR notice at the time of or prior to an inspection specifying reasonable cause for the inspection.

5) GRANTOR shall maintain insurance for the full replacement cost of the Property, and shall maintain policies of insurance against other hazards, casualties and contingencies as the BENEFICIARY may require, with all such policies naming the BENEFICIARY as the

"mortgagee" thereunder and to be in form satisfactory to, and with insurance companies approved by, the BENEFICIARY.

6) The GRANTOR shall pay, when due, all taxes and assessments, both general and special, ground rents, fines, penalties, impositions, levies, dues and charges of every type or nature levied upon or assessed against the Property including any personal property included thereon, or upon the interest therein of the BENEFICIARY or the TRUSTEE hereunder and shall annually provide to the BENEFICIARY evidence that all such payments have been paid when due.

7) The GRANTOR is lawfully seized of any indefeasible estate in the Property in fee simple, free from encumbrances except as accepted by the BENEFICIARY, has good right and power to convey the Property, does hereby warrant generally the same, and shall execute such further assurances as may be requisite.

8) If the BENEFICIARY employs an attorney to collect any or all of the indebtedness to foreclose this deed of trust, or authorizes the TRUSTEE to conduct TRUSTEE'S sale proceedings hereunder, the TRUSTEE and the BENEFICIARY shall be reimbursed by GRANTOR, immediately and without demand, for all reasonable costs, charges and attorney's fees incurred by them or either of them in any such case whether or not suit be commenced, and the same be secured hereby.

9) The GRANTOR hereby covenants and agrees to comply with the BENEFICIARY'S guidelines regarding the BENEFICIARY'S funding of the loan secured hereby and agrees not to act or fail to act in any way which would cause the BENEFICIARY to be in non-compliance with any such guidelines.

10) This deed of trust is made and shall be construed in accordance with and under the provisions of Section 55-59, 59.1 through 59.4 and 55-60, of the *Code of Va., 1950, as amended,* including but not limited to the following:

a. Exemptions waived.
b. Subject to call upon default.
c. Renewal, or extension or reinstatement permitted.
d. Right of anticipation as provided by Note.
e. Trustee's Commission—5% of gross proceeds of sale.
f. Advertisement required—once a week for two successive weeks.
g. Substitution of Trustee permitted.
h. Any Trustee may act.
i. Deferred Purchase Money.
j. Insurance required in an amount equal to at least the outstanding principal of the debt secured hereby.

In the event of foreclosure hereunder, the BENEFICIARY must give the GRANTOR at least fourteen (14) days' written notice by certified or registered mail at GRANTOR'S last known address prior to any sale.

If the TRUSTEE is directed by the BENEFICIARY or any holder of the note secured hereby to institute foreclosure hereunder, public advertising has commenced, and the property is redeemed by the makers or endorsers hereof prior to sale, then the TRUSTEE shall be entitled to a commission of not less than twenty-five percent (25%) of the outstanding balance of the note or five percent (5%) of the foreclosure sale price, whichever is greater, together with any costs or expenses incurred by the TRUSTEE.

If the GRANTOR shall fail to pay any installment of the note herein described, or any extension or renewal thereof, then it shall be the duty of the TRUSTEE, upon written request of the BENEFICIARY, or any holder of said note, to sell the real estate herein conveyed at public auction in the jurisdiction in which the property lies. But before executing this deed of trust, the TRUSTEE shall give notice of the time, place and terms of sale by advertisement in a newspaper of general circulation in such jurisdiction once per week for two consecutive weeks, and by such other advertisement as the TRUSTEE deems fit.

If the GRANTOR fails to perform any of the covenants and agreements contained in this Deed of Trust or defaults on any deed of trust or similar instrument to which this Deed of Trust is subordinated, or any action or proceeding is commenced which materially affects the BENEFICIARY'S interest in the Property, the failure to pay delinquent taxes or insurance premiums, or the commencement of a proceeding in eminent domain, insolvency, code enforcement or arrangements or proceedings involving bankruptcy by the GRANTOR, then the BENEFICIARY, at the BENEFICIARY'S option and with notice to the GRANTOR, may make such appearances, disburse such sums and take such actions as to protect the BENEFICIARY'S interest, including but not limited to payment of delinquent taxes or insurance premiums, disbursements of reasonable attorney's fees and entry upon the Property to make repairs or to secure the same against unauthorized entry and/or the elements.

Any amounts disbursed by the BENEFICIARY pursuant to the preceding paragraph shall become additional indebtedness of the GRANTOR secured by this Deed of Trust. Unless the GRANTOR and the BENEFICIARY agree to other terms of payment, such amounts shall be payable upon demand, and shall bear interest from the date of disbursement at the then highest jurisdictional rate applied by Virginia Courts.

Any forbearance by the BENEFICIARY in exercising any right or remedy hereunder, or otherwise available by applicable law, shall not be a waiver of or preclude the subsequent exercise of any such right or remedy. The procurement of insurance or the payment of taxes or other liens or charges by the BENEFICIARY pursuant to the terms of this Deed of Trust shall not be a waiver of the BENEFICIARY'S right to accelerate the maturity of the indebtedness secured by this Deed of Trust.

The BENEFICIARY shall have the right to transfer or assign freely all or any part of its rights under this Deed of Trust. The GRANTOR, however, shall not sell, convey, transfer or dispose of or further encumber the Property, or any part thereof, or any interest therein, or agree to do so, without first obtaining the written consent of the BENEFICIARY (such consent shall not be unreasonably withheld or delayed), except in accordance with the provisions of the Note and this Deed of Trust. If the GRANTOR takes such action without the prior written consent of the BENEFICIARY, then the BENEFICIARY shall have the right at its option, to

declare all sums secured hereby immediately due and payable, and to pursue any other action or remedy provided herein for the GRANTOR'S default. Consent to one such transaction shall not be deemed to be a waiver of the right to require such consent to future or successive transaction. The GRANTOR reserves the right to place subordinate deeds of trust on the Property without securing consent from the BENEFICIARY.

The BENEFICIARY'S remedies, and rights and obligations as set forth herein are in addition to and not in lieu of such remedies, and rights and obligations that the BENEFICIARY or its successors or assigns may have by virtue of the Declaration of Restrictive Covenant. Nothing herein shall be construed to obviate or otherwise negate the ongoing effect and enforceability of the Declaration of Restrictive Covenant.

The covenants and agreements contained herein shall bind, and the rights hereunder shall inure to, the respective successors and assigns of the BENEFICIARY and the respective authorized successors and assigns of the GRANTOR.

NON-RECOURSE PROVISION. Notwithstanding any of the foregoing terms or conditions of this Deed of Trust or the terms and conditions of the Note, in the event of a default hereunder, the BENEFICIARY expressly and specifically covenants and agrees for itself and its successors and assigns that (a) no member of the GRANTOR shall have any personal liability to pay any of the debt, (b) the BENEFICIARY will not collect or attempt to collect any of the sums due hereunder, including any deficiency judgment, from any member of the GRANTOR, and (c) the BENEFICIARY will look solely to the GRANTOR'S assets for satisfaction of the same. This Deed of Trust and the Note are intended to be non-recourse liabilities as defined in Treasury Regulation § 1.752-1(a)(2) and shall be construed consistently therewith.

NOTICE—THE DEBT SECURED HEREBY IS SUBJECT TO CALL IN FULL OR THE TERMS THEREOF BEING MODIFIED IN THE EVENT OF ANY SALE, REFINANCE OR CONVEYANCE OF THE PROPERTY SECURED HEREBY.

WITNESS the following signature and seal on this ____ day of _____, 2016:

[owner]

By:_____

COMMONWEALTH OF VIRGINIA)
)
CITY OF ROANOKE)

The foregoing instrument was acknowledged before me this ___ day of _____, 2016, by _____, a Virginia limited liability corporation, on behalf of the corporation.

_____
Notary Public

My commission expires: _____

Registration No.: _____

EXHIBIT E
DECLARATION OF RESTRICTIVE COVENANT

EXHIBIT "E"

DECLARATION OF RESTRICTIVE COVENANT

THIS DECLARATION OF RESTRICTIVE COVENANT is made this ____ day of _____, 2016, by _____, a Virginia corporation (hereinafter "Owner") in favor of the CITY OF ROANOKE, a Virginia municipal corporation (hereinafter referred to as "City").

WHEREAS, the City has been designated by the United States Department of Housing and Urban Development ("HUD") as an entitlement community for the receipt and use of Community Development Block Grant ("CDBG") funds, as provided in 24 CFR Part 570; and

WHEREAS, _____ is the owner of a facility located at _____, Roanoke, Virginia, 240-- and more particularly described as follows:

See Attached **Exhibit "A"** (hereinafter the "Property");

WHEREAS, _____ has applied to the City for CDBG funds for the rehabilitation of the Property, which use is consistent with the purposes in 24 CFR Part 570; and,

WHEREAS, Concurrent with the execution of this Declaration, _____ and the City entered into a CDBG Loan Agreement whereby _____ agrees to borrow from City and City agrees to lend to _____ certain funds to rehabilitate the Property and to insure that the funds will be used for upgrades and improvements to the façade of the Property in compliance with 24 CFR Part 570; and,

WHEREAS, As a condition to the use of these CDBG funds, _____ agrees to maintain and not change or alter the improvements and upgrades made to the façade of the Property without prior approval from the City for a period of not less than five (5) years; and

NOW, THEREFORE, _____ declares that said Property shall be held, transferred, encumbered, used, sold, conveyed, leased and occupied, subject to the covenant hereinafter set forth expressly and exclusively for the use and benefit of said Property and of each and every person or entity who now or in the future owns any portion of the Property.

1. **RESTRICTION OF USE AND SUBSEQUENT CHANGES OR ALTERATIONS.** The upgraded and improved façade of the Property shall be maintained in good repair and not changed or altered without prior approval from the Town. If _____ sells, transfers, encumbers, leases, or conveys the Property to an unrelated third party, refinances the Property on a "cash out" basis without prior approval from the City, or fails to maintain the Property as required herein, then _____ must reimburse the City an amount equal to the prorated portion of the original loan amount.

2. **BINDING NATURE OF COVENANTS.** This covenant is to run with the land from the date it is recorded and shall be binding on all parties and all persons claiming under them until _____, 2021.

3. **ENFORCEMENT OF DECLARATION OF RESTRICTIVE COVENANT.** Enforcement of the foregoing restrictive covenant shall be by proceedings at law or in equity against any person or persons violating or attempting to violate such covenant to restrain violation. Such action may be brought by the City of Roanoke or by HUD.

4. **ATTORNEYS' FEES.** Any person who successfully brings an action for

enforcement of this Declaration shall be entitled to recover attorneys' fees and costs for such action, including any successful appellate proceedings, from the then owner of the affected portion or portions of the Property.

IN WITNESS WHEREOF, _____ has executed this Declaration of Restrictive Covenant, the day and year first above written.

Borrower

By: _____
Name:
Title:

(CORPORATE SEAL)

COMMONWEALTH OF VIRGINIA
CITY OF ROANOKE

The foregoing instrument was acknowledged before me this ____ day of _____, 2016, by _____, a Virginia limited liability corporation, on behalf of the corporation.

WITNESS my hand and official seal this ___ day of _____, 2016.

_____
Notary Public
Print Name:_____

My commission expires:_____

Registration No.: _____

EXHIBIT F

CERTIFICATION OF DRUG FREE WORK PLACE

EXHIBIT "F"

CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

The certification set out below is a material representation upon which reliance is placed by the City of Roanoke and the U.S. Department of Housing and Urban Development ("HUD") in awarding the Loan. If it is later determined that the Borrower or Contractor knowingly rendered a false certification or otherwise violates the requirements of the Drug-Free Workplace Act, the Town's Housing and Neighborhood Services Office and/or the HUD, in addition to any other remedies available to the federal government, may take action authorized under the Drug-Free Workplace Act. The Borrower and Contractor will comply with the other provisions of the Act and with other applicable laws.

CERTIFICATION

1. The Borrower and Contractor certifies that it will provide a drug-free workplace by:

A. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Borrower's and Contractor's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

B. Establishing an ongoing drug-free awareness program to inform employees about:

1. the dangers of drug abuse in the workplace;

2. the Borrower's and Contractor's policy of maintaining a drug-free workplace;

3. any available drug counseling, rehabilitation and employee assistance programs; and

4. the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

C. Making it a requirement that each employee be engaged in the performance of the grant is given a copy of the statement required by paragraph (A).

D. Notifying the employee in the statement required by paragraph (A) that, as a condition of employment under the Loan, the employee will:

1. Abide by the terms of the statement; and

2. Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five (5) calendar days after such conviction

E. Notify the Town's Housing and Neighborhood Services Office and/or the HUD in writing within ten (10) calendar days after receiving notice under subparagraph (D)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant.

F. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (D)(2), with respect to any employee who is so convicted:

1. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement or other appropriate agency.

G. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (A), (B), (C), (D), (E) and (F).

2. The Borrower and Contractor shall insert in the space provided on the attached "Place of Performance" form the site(s) for the performance of work to be carried out with the Loan funds (including street address, Town, county, state, zip code and total estimated number of employees). The Borrower and Contractor further certifies that, if it is subsequently determined that additional sites will be used for the performance of work under the Loan, it shall notify the Town's Housing and Neighborhood Services Office and/or HUD immediately upon the decision to use such additional sites by submitting a revised "Place of Performance" form.

PLACE OF PERFORMANCE

FOR CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

Name of Subgrantee: The Borrower and Contractor

Loan Program Name: Community Development Block Loan/Entitlement Loan

Grant: _____

Date:

The borrower shall insert in the space provided below the site(s) expected to be used for the performance of work under the Loan covered by the certification:

Place of Performance (include street address, Town, county, state, zip code for each site):

215 Church Avenue, Room _____
Roanoke Virginia

Check ____ if there are work places on file that are not identified here.

[Corporate Seal]

By: _____

_____
Date

By: _____

_____
Date

EXHIBIT G
CERTIFICATION REGARDING LOBBYING

EXHIBIT "G"

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grant and contracts under grants, and cooperative agreements) and that the Borrower and Contractor shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 31 U.S.C. §1352. Any person who fails to file this required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

[Corporate Seal]

By: _____

_____

By: _____ Date

_____

Date

EXHIBIT H
EQUAL EMPLOYMENT OPPORTUNITY

EXHIBIT "H"

EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

FOR SUBRECIPIENTS AND THEIR CONTRACTORS

AND SUBCONTRACTOR'S CONTRACTS

In carrying out this Agreement, the Borrower and Contractor and its contractors and subcontractors shall not discriminate against any employee or applicant for employment because of race, color, creed, religion, ancestry, familial status, national origin, sex, disability or other handicap, age, marital status, or status with regard to public assistance. The Borrower and Contractor shall take affirmative action to insure that all employment practices are free from such discrimination. Such employment practices shall include, but not be limited to, the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Borrower and Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Government setting forth the provisions of this nondiscrimination clause. The Borrower and Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of The Borrower and Contractor that it is an Equal Opportunity or Affirmative Action employer.

EXHIBIT I
DAVIS-BACON GUIDELINES

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section l(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section l(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section l(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at *http://www.dol.gov/esa/whd/forms/wh347instr.htm* or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant ',to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than $5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds $100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds $100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

EXHIBIT J
CONTRACTOR'S INSURANCE CERTIFICATE

(To be added after Award to Successful Bidder)

CITY OF ROANOKE, VIRGINIA

CONTRACTOR'S PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

that _____

_____

_____

(Insert full name or legal title and address of Contractor)

as Principal, (hereinafter referred to as "Contractor"),

and _____

_____

_____

(Insert full name or legal title and address of Surety)

Telephone: _____ Fax: _____

as Surety (hereinafter referred to as "Surety"), are held and firmly bound unto the City of Roanoke, Virginia, a municipal corporation, 215 Church Avenue, S.W., Noel C. Taylor Municipal Building, Room 350, Roanoke, Virginia 24011, as Obligee (hereinafter referred to as "City" or "Owner"), in the amount of _ _____ Dollars ($_____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents to the terms of this bond.

WHEREAS, Contractor has entered into a Contract with the City dated _____, 20_____, incorporating certain specifications and drawings prepared by:

_____

_____

_____

(Insert full name or legal title and address)

(which Contract, specifications, drawings, and other Contract Documents are hereinafter referred to collectively as the "Contract") for a fully functional and properly operating project, namely _____ _____ _____, all in a proper and timely manner and in accordance with the Contract Documents, which Contract is expressly incorporated herein by reference and made a part of this bond.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly and faithfully perform the Contract, in strict conformity with each and every requirement of the Contract, then this obligation shall be null and void; otherwise, this Performance Bond shall remain in full force and effect and is subject to the following conditions:

a. Any alteration which may be made in the terms of the Contract, including, without limitation, the amount to be paid or the work to be done under it, or the giving by the City of any extension of time for the performance of the Contract or any other forbearance of any nature whatsoever on the part of either the City or the Contractor to the other shall not in any way release the Contractor and the Surety, or either of them, their heirs, exe-

cutors, administrators, successors, or assigns from their liability hereunder, and notice of such alteration, extension, or forbearance is hereby expressly waived by Surety.

b. IT IS NOT INTENDED BY ANY OF THE PROVISIONS OF ANY PART OF THIS BOND TO CONFER A BENEFIT UPON ANY OTHER PERSON OR ENTITY NOT A PARTY TO THIS PERFORMANCE BOND OR TO AUTHORIZE ANY PERSON OR ENTITY NOT A PARTY TO THIS BOND TO MAINTAIN A SUIT PURSUANT TO THE TERMS OR PROVISIONS OF THIS BOND OTHER THAN THE CITY OR ITS SUCCESSORS OR ASSIGNS.

c. The Surety hereby submits itself to a court of competent jurisdiction in Roanoke, Virginia, and agrees that any suit or action hereunder shall be brought only in a Virginia court of competent jurisdiction in the City of Roanoke or in the United States District Court for the Western District of Virginia, Roanoke Division, and not elsewhere.

d. Any suit under this bond must be instituted within two (2) years after (i) completion of the Contract, including the expiration of all warranties and guarantees, or (ii) discovery of the defect or breach of warranty, if the action be for such, in all other cases.

e. The provisions of this bond shall be governed by and interpreted to be consistent with the laws of the Commonwealth of Virginia.

SIGNED AND SEALED this ____ day of _____, 20_____, in the presence of:

WITNESS: _____
CONTRACTOR

By:_____ (Seal)

_____ _____
(Type Name and Title)

WITNESS: _____
SURETY

By:_____ (Seal)
Attorney-in-Fact

_____ _____
(Type Name and Title)

(Attorneys-in-fact affix seal and attach original or certified copy of current power of attorney.)

CITY OF ROANOKE, VIRGINIA

CONTRACTOR'S LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

that _____

_____

_____
(Insert full name or legal title and address of Contractor)

as Principal, (hereinafter referred to as "Contractor"),

and _____

_____

_____
(Insert full name or legal title and address of Surety)

Telephone: _____ Fax: _____

as Surety (hereinafter referred to as "Surety"), are held and firmly bound unto the City of Roanoke, Virginia, a municipal corporation, 215 Church Avenue, S.W., Noel C. Taylor Municipal Building, Room 350, Roanoke, Virginia 24011, as Obligee (hereinafter referred to as "City" or "Owner"), for the use and benefit of Claimants as herein below defined, in the amount of _____ _____ Dollars ($_____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents to the terms of this bond.

WHEREAS, Contractor has entered into a Contract with the City dated _____, 20_____, incorporating certain specifications and drawings prepared by:

_____

_____

_____
(Insert full name or legal title and address)

(which Contract, specifications, drawings, and other Contract Documents are hereinafter referred to collectively as the "Contract") for providing a fully functional and properly operating project, namely _____ _____ _____, all in a proper and timely manner and in accordance with the Contract Documents, which Contract is expressly incorporated herein by reference and made a part of this bond.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly make payment to all Claimants, as hereinafter defined, for all material

furnished or labor supplied or performed in the prosecution of the work provided for in the Contract, then this obligation shall be void; otherwise this Labor and Material Payment Bond shall remain in full force and effect and is subject to the following conditions:

a. Any alteration which may be made in the terms of the Contract, including, without limitation, the amount to be paid or the work to be done under it, or the giving by the City of any extension of time for the performance of the Contract or any other forbearance of any nature whatsoever on the part of either the City or the Contractor to the other shall not in any way release the Contractor and the Surety, or either of them, their heirs, executors, administrators, successors, or assigns from their liability hereunder, and notice of such alteration, extension, or forbearance is hereby expressly waived by Surety.

b. A Claimant is defined as one who has and fulfills a contract to supply labor or materials, or both, to the Contractor or to any of the Contractor's subcontractors, in the prosecution of work provided for in the Contract, labor and material being construed to include, without limitation, public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the site, or who may otherwise be allowed by law to file a claim against the Contractor and/or Surety.

c. The Contractor and Surety hereby jointly and severally agree with City that every Claimant, as defined in paragraph b, **who has a direct contractual relationship with the Contractor and** who has performed labor or furnished material in accordance with the Contract in the prosecution of the work provided for in the Contract and who has not been paid in full therefore before the expiration of ninety (90) days after the day on which such Claimant performed the last such labor or furnished the last of such materials for which Claimant claims payment, or as may otherwise be allowed by law, may bring an action on this payment bond to recover any amount due Claimant for such labor or material, and may prosecute such action to final judgment and have execution on the judgment. The Contractor and Surety expressly agree that City shall not be liable for the payment of any judgment, costs, or expenses resulting from any such suit and that neither Contractor nor Surety shall cause City to be named as a party in any such suit.

d. The Contractor and Surety hereby jointly and severally agree with City that every Claimant, as defined in paragraph b, who has direct contractual relationship with any subcontractor, but who has no contractual relationship, express or implied, with such Contractor, may bring an action on this bond only if the Claimant has given written notice to the Contractor within **ninety (90)** days from the day on which the Claimant performed the last of the labor or furnished the last of the materials for which payment is claimed, stating with substantial accuracy the amount claimed and the name of the person for whom the work was performed or to whom the material was furnished, or as may otherwise be allowed by law. **Notice to the Contractor shall be given as set forth in Virginia Code §2.2-4341 and Claimants are advised to review such Code Section.** The Contractor and Surety expressly agree that City shall not be liable for the payment of any judgment, costs, or expenses resulting from any such suit and that neither Contractor nor Surety shall cause City to be named as a party in any such suit.

e. The Surety hereby submits itself to a court of competent jurisdiction in Roanoke, Virginia, and agrees that any suit or action hereunder by any Claimant shall be brought only in a Virginia court of competent jurisdiction in and for the City of Roanoke, or in the United States District Court for the Western District of Virginia, Roanoke Division, and not elsewhere.

f. Any suit or action hereunder shall be brought within one year after the day on which the person bringing such action last performed labor or last furnished or supplied materials.

g. The provisions of this bond shall be governed by and interpreted to be consistent with the laws of the Commonwealth of Virginia, including, but not limited to Virginia Code §2.2-4341.

SIGNED AND SEALED this ____ day of _____, 20_____, in the presence of:

_____
CONTRACTOR

WITNESS:

By:_____ (Seal)

_____ _____
(Type Name and Title)

_____
SURETY

WITNESS:

By:_____(Seal)
Attorney-In-Fact

_____ _____
(Type Name and Title)

(Attorneys-in-fact affix seal and attach current original or certified copy of power of attorney.)

CITY OF ROANOKE, VIRGINIA

CERTIFICATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Project Manager when construction is sufficiently complete, in accordance with the Contract Documents, so the City of Roanoke, Virginia (City or Owner) can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

PROJECT MANAGER: _____
BID NUMBER: _____ DATE OF ISSUANCE: _____
PROJECT: _____
CONTRACTOR: _____
PROJECT OR DESIGNATED PORTION SHALL INCLUDE: _____
_____
_____.

The Work or portion thereof designated above performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as _____. The City will assume possession thereof at _____ a.m./p.m. on that date.

A list of items ("punch list"), prepared by the Project Manager, to be completed or corrected by the Contractor, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The Contractor will complete any portion of the Work that is not substantially complete and will complete or correct the work on the punch list in accordance with the Contract Documents.

The establishment of a date of substantial completion and/or the acceptance of the Work or designated portion thereof does not relieve the Contractor of any responsibility for any faulty materials or workmanship or operate to relieve the Contractor or its Surety from any obligation under the Contract with the City or the Performance Bond or Labor and Material Payment Bond.

This Certificate is subject to the terms and conditions of the Contract Documents, including but not limited to Section 20.8 of the General Conditions.

_____	_____	_____
Project Manager	By	Date
_____	_____	_____
Contractor	By	Date
_____	_____	_____
Community Resources Program Administrator	By	Date

CITY OF ROANOKE, VIRGINIA

AFFIDAVIT OF PAYMENT OF CLAIMS

By: _____

_____

_____
(Insert Exact Name and Address of Firm)

This day _____ personally appeared before me, _____, a Notary Public in and for the City (County) of _____, and, being by me first duly sworn states that all subcontractors and suppliers of labor and materials have been paid all sums due them for work performed or materials furnished in the performance of the Contract between the City of Roanoke, Virginia, and _____
_____
_____
or arrangements have been made by the Contractor satisfactory to such subcontractors and suppliers with respect to the payment of such sums as may be due from the Contractor to the subcontractors and suppliers.

CONTRACTOR:_____
BY:_____
PRINTED OR TYPED NAME AND TITLE:_____

Commonwealth of Virginia at Large:
Subscribed and sworn to before me this ____ day of _____,20_____.
My commission expires on the ____ day of _____, _____.

_____
Notary Public

_____
Printed Name of Notary Public

CITY OF ROANOKE, VIRGINIA

CERTIFICATE OF FINAL ACCEPTANCE

This Certificate is subject to the terms and conditions of the Contract Documents, including but not limited to Section 20.8 of the General Conditions. The City, Contractor, and Project Manager, if applicable, hereby agree that the date fixed for Final Acceptance of the Work by the City is _____.

The establishment of a date of Final Acceptance and/or the acceptance of the Work does not relieve the Contractor of any responsibility for any faulty materials or workmanship or operate to relieve the Contractor or its Surety from any obligation under the Contract with the City or the Performance Bond or Labor and Material Payment Bond.

PROJECT MANAGER: _____

PROJECT NUMBER: _____

PROJECT: _____

_____

CONTRACTOR: _____

Project Manager	By	Date
Contractor	By	Date
Community Resources Program Administrator	By	Date

CITY OF ROANOKE, VIRGINIA
GENERAL CONDITIONS

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CITY OF ROANOKE, VIRGINIA

GENERAL CONDITIONS

SECTION 1. DEFINITIONS

Whenever used in these General Conditions or in the Contract Documents, the following terms have the meanings indicated, which are applicable to both the singular and plural and the male and female gender thereof, and where applicable to any other legal entity such as a corporation, partnership, limited liability company, etc.

The section and paragraph headings are inserted for convenience only.

Architect, Engineer, Architect/Engineer or A/E: The term used to designate the Architect and/or the Engineer who contracts with the City to provide the Architectural and Engineering services for the project. The Architect/Engineer is a separate Contractor and is referred to herein as the Architect/Engineer or abbreviated as A/E. The term includes any associates or consultants employed by the firm to assist in providing the A/E services.

Bidder: The person, firm, corporation, or other entity interested in submitting a bid for the Work to be performed.

Change Order: A document issued by Community Resources Program Administrator on or after the effective date of the Contract which is agreed to by the Contractor and approved by the City, and which authorizes an addition, deletion, or revision in the Work, including any adjustment in the Contract Price and/or the Contract Time.

City or Owner: The City of Roanoke, Virginia, or its authorized representative.

City Code: Refers to the Code of the City of Roanoke (1979), as amended.

Community Resources Program Administrator: Community Resources Program Administrator or his authorized representative.

City Manager: The City Manager or his authorized representative.

Code of Virginia: Refers to the Code of Virginia (1950), as amended. (Sometimes referred to as Va. Code or Virginia Code.)

Contract Documents: These documents include, but are not limited to, the Project Manual, Invitation to Bid, the Instructions to Bidders, the Bid Form, the Contract, the Bonds or other Bid Security, the Escrow Agreement, the General Conditions, Supplementary General Conditions, Special Conditions, the Specifications, Addenda or Change Orders, the Plans and Drawings, any Supplemental Drawings, and any additional documents incorporated by reference in the above.

Contract: The written agreement between the parties concerning the performance of the Work and consisting of the Contract Documents.

Contractor: The person, firm, corporation, or other entity entering into a contractual agreement with the City to perform the Work.

Defect, Defective, or Deficient: An adjective or noun which when modifying or referring to the word Work refers to Work or any part thereof that is unsatisfactory, faulty, or does not conform to the Contract Documents, or does not meet the requirements of any inspections, standards, tests, or approvals referred to in the Contract Documents.

Document(s): This term includes, but is not limited to: writings, drawings, items on which words, symbols, or marks are recorded; electronic data of any type; videotapes, recordings, photographs and negatives, digital or otherwise; and any other form of data, writing, or information compilation, however recorded or stored, and regardless of physical form or characteristics.

Field Order: A written order issued by Community Resources Program Administrator which clarifies the requirements of the Contract by giving a more complete expression of the drawings or specifications or other documents without any change in the design, the Contract price, or the Contract time.

Final Acceptance: The City's acceptance of the project from the Contractor upon confirmation from Community Resources Program Administrator and the Contractor that the project is apparently complete in accordance with the Contract requirements.

Notice: All written notices, demands, instructions, claims, approvals, and disapprovals required to obtain compliance with the Contract requirements. Any written notice by either party to the Contract shall be sufficiently given if delivered to or at the last known business address of the person, firm, or corporation constituting the party to the Contract, or to his, her, their, or its authorized agent, representative, or officer.

Notice to Proceed: A written notice given by the City at the City's discretion to the Contractor fixing the date on which the Contract time will commence for the Contractor to begin the prosecution of the Work in accordance with the requirements of the Contract Documents.

Project Inspector: One or more individuals employed by the City to inspect the Work and/or to act as Resident Inspector to the extent required by the City. The City shall notify the Contractor of the appointment of such Project Inspector(s).

Provide: Shall mean to furnish and install ready for its intended use.

Subcontractor: A person, firm, partnership, corporation, or other entity having a direct contract with the Contractor or with any other Subcontractor for the performance of the Work. It includes one who provides on-site labor, but does not include one who only furnishes or supplies material for the project.

Submittals: All drawings, diagrams, illustrations, brochures, schedules, samples, electronic data and other data required by the Contract Documents which are specifically prepared by or for the Contractor, Subcontractor, or Supplier, and submitted by the Contractor to illustrate the material, equipment, or layouts, or some other portion of the Work.

Substantial Completion: The date certified by Community Resources Program Administrator when construction is sufficiently complete, in accordance with the

Contract Documents, so the City can occupy or utilize the Work or designated portion thereof for the purposes for which it is intended.

Successful Bidder: The bidder to whom the City makes an award.

Supplier: A manufacturer, fabricator, distributor, material man, or vendor who provides only material or supplies for the project, but does not provide on-site labor.

Work or Project: The entire completed construction or the various separately identifiable parts thereof as required by the Contract Documents. Work is the result of performing services, furnishing labor, and furnishing and incorporating material and equipment into the construction.

SECTION 2. INDEMNITY PROVISION

2.1 Indemnity: Contractor shall indemnify and hold harmless City and its officers, agents, and employees against any and all liability, losses, damages, claims, causes of action, suits of any nature, costs, and expenses, including reasonable attorney's fees, resulting from or arising out of Contractor's or its employees, agents, or subcontractors actions, activities, or omissions, negligent or otherwise, on or near City's property or easement or arising in any way out of or resulting from any of the work to be provided under this Contract, and this includes, without limitation, any fines or penalties, violations of federal, state, or local laws or regulations, personal injury, wrongful death, or property damage claims or suits, breach of contract claims, indemnity claims, and any other damages, losses, and/or claims of any type.

2.2 Hazardous Material: While on City's property or easement and in its performance of this Contract, Contractor shall not transport, dispose of or release any hazardous substance, material, or waste, except as necessary in performance of its Work under this Contract and in any event Contractor shall comply with all federal, state, and local laws, rules, regulations, and ordinances controlling air, water, noise, solid wastes, and other pollution, and relating to the storage, transport, release, or disposal of hazardous material, substances or waste. Regardless of City's acquiescence, Contractor shall indemnify and hold City, it officers, agents, and employees harmless from all costs, claims, damages, causes of action, liabilities, fines or penalties, including reasonable attorney's fees, resulting from Contractor's violation of this paragraph and agrees to reimburse City for all costs and expenses incurred by City in eliminating or remedying such violations. Contractor also agrees to reimburse City and hold City, its officers, agents, and employees harmless from any and all costs, expenses, attorney's fees and all penalties or civil judgments obtained against the City as a result of Contractor's use or release of any hazardous substance or waste onto the ground, or into the water or air from or upon City's premises. (See also Section 13.2 of these General Conditions.)

2.3 Patents: The Contractor shall protect, indemnify, and hold harmless the City from any and all demands for fees, claims, suits, actions, causes of action, or judgments based on the alleged infringement or violation of any patent, invention, article, trademark, arrangement, or other apparatus that may be used in the performance of the Contract or the Work.

SECTION 3. LAWS, REGULATIONS, PERMITS, AND IMMIGRATION LAW

3.1 Regulations: The Contractor shall fully comply with all local, state, and federal ordinances, laws, and regulations, including without limitation all applicable building and fire code sections of the Occupational Safety and Health Act (OSHA), and the Virginia Uniform Statewide Building Code, and obtain all required licenses and permits, including business license, building permits, and pay all charges and expenses connected therewith. Contractor further agrees that Contractor does not, and shall not during the performance of this Contract; knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

3.2 Permits: The Contractor shall, at its sole cost, obtain all required permits from the appropriate authorities, including the City of Roanoke. This includes, but is not limited to, all permits for any excavations in any public right-of-way. No delay or extension of time or any claim for additional compensation of any type shall be granted for failure to obtain any required permits.

3.3 Litter: In accordance with the Virginia Anti-Litter Law, receptacles sufficient to contain workmen's litter and construction wastes capable of being spread by wind or water shall be located on the construction site. The number and size of receptacles required shall be determined by the Contractor.

3.4 Asbestos License: The Contractor, if not licensed as an asbestos abatement contractor or a Roofing, Flooring, and Siding (RFS) contractor in accordance with Section 54.1-514, of the Code of Virginia, shall have all asbestos related work performed by subcontractors who are duly licensed as asbestos contractors or RFS contractors as appropriate for the work required.

SECTION 4. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

Neither the Contractor nor any subcontractor shall commence work under this Contract until the Contractor has obtained and provided proof of the required insurance under this Section to the City. The Contractor confirms that all subcontractors have provided the Contractor with proof of insurance. Contractor further warrants that proof of coverage as provided to the City responds on a primary basis in the event of an uninsured or underinsured subcontractor. All such insurance shall be primary and non-contributory to any insurance or self-insurance the City may have in force.

4.1 For All Contracts, the following minimum insurance requirements apply:

a. Workers' Compensation and Employers' Liability:

The Contractor shall obtain and maintain the following limits:

Workers' Compensation: Statutory

Employers' Liability: $100,000 bodily injury by accident each occurrence

$500,000 bodily injury by disease (policy limit)

$100,000 bodily injury by disease each employee

b. Commercial General Liability:

Coverage is to be written on an "occurrence" basis and such coverage shall include broad form extension endorsements for both liability and property damage.

Completed Operations coverage will be required to be maintained for the life of the Contract.

For Limits of Liability see Sections 4.2 and 4.3 of these General Conditions.

c. Automobile Liability:

Limits for vehicles owned, non-owned, hired or borrowed shall not be less than:

- $1,000,000 Bodily Injury and Property Damage combined single limit per occurrence.

d. Additional Insurance Requirements:

Additional specific insurance coverage minimum requirements to be provided by Contractor may include the following as detailed in the Supplemental General Conditions:

1) Builders Risk: At the discretion of the City, the Contractor, at its cost, shall obtain and maintain in the names of the City and the Contractor "all-risk" builders risk insurance (if approved by the City) upon the entire structure or structures on which the Work of this Contract is to be done and upon all material in or adjacent thereto or those that are “off-site” but which are intended for use thereon, to one hundred percent (100%) of the completed value thereof.

2) Property Coverage: Installation Floater (and Rigger's Form, if applicable) will be required for the installation of contents or equipment; coverage will begin with supplier and continue until equipment/contents have been fully installed. Floater will be valued for the replacement cost value of equipment/contents including all costs. The Contractor shall provide coverage for portions of the work stored off-site after written approval of the City at the value established in the approval and for portions of the work in transit.

3) Special Hazards: In the event special hazards are evident in the work contemplated, or if required by the Contract Documents, the Contractor shall obtain and maintain during the life of the Contract a rider to the policy or policies required, in an amount not less than that stipulated under the above Paragraphs. Should any unexpected special hazards be encountered during the performance of this Contract, the Contractor shall, prior to performing any work involving the special hazard, immediately obtain this insurance as instructed by the City. In the event the special hazard requiring the additional coverage was not a part of the original bid, the expense of such insurance shall be reimbursed to the Contractor by

the City, otherwise the Contractor shall assume full responsibility for the purchase with no charge back to the City.

4) Deductible: Deductible/self-insured retention amounts shall be reduced or eliminated upon written request from City. The insurer's cost of defense (and appeal), including attorney's fees, shall not be included within the coverages provided but shall remain the insurer's responsibility.

5) Term: Insurance shall remain in effect until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective work.

6) Limit of Liability: Nothing contained in these insurance requirements is to be construed as limiting the liability of Contractor or Contractor's insurance carriers. City does not in any way represent that the coverage's or the limits of insurance specified is sufficient or adequate to protect Contractor's interests or liabilities, but are merely minimums. The obligation of the Contractor to purchase insurance herein shall not in any way limit the obligation of the Contractor in any event and/or in the event that the City should suffer an injury or loss in excess of the amount recoverable through insurance.

4.2 Contracts of $100,000 or More: The following minimum insurance requirements apply in addition to the above requirements:

a. Limits of Liability: For the Commercial General Liability policy:

- $2,000,000 general aggregate
- $1,000,000 products/completed operations aggregate
- $1,000,000 personal and advertising injury
- $1,000,000 each occurrence

Coverage is to be written on an "occurrence" and "per project" basis and such coverage shall include:

b. Umbrella Liability Insurance:

This coverage shall be written for minimum limit of:

- $5,000,000 each occurrence for Personal and Bodily Injury and Property Damage

This Policy shall apply in excess and follow form of employer's liability, commercial general liability, and auto liability.

4.3 Contracts Less Than $100,000: The following minimum insurance limits apply unless specified otherwise in the Supplemental General Conditions:

a. Limits of Liability: For the Commercial General Liability policy:

- $1,000,000 general aggregate

- $1,000,000 products/completed operations aggregate
- $1,000,000 personal and advertising injury
- $1,000,000 each occurrence

4.4 Proof of Insurance Coverage: The policies of insurance required by Sections 4.1, 4.2, or 4.3 shall be purchased from a reputable insurer licensed to do business in Virginia and maintained for the life of the Contract by the Contractor. Other insurance requirements include the following:

a. The Contractor shall furnish the City with the required certificates of insurance showing the insurer, type of insurance, policy number, policy term, deductible, and the amount insured for property coverage's and the limits for liability coverage's.

b. The Contractor shall notify Community Resources Program Administrator and Risk Manager in writing within thirty (30) consecutive calendar days if any of the insurance coverage's or policies are cancelled or materially altered and Contractor shall immediately replace such policies and provide documentation of such to Community Resources Program Administrator and Risk Manager.

c. The required insurance policies and coverages, excluding those for Workers Compensation and Professional Liability, shall name the City of Roanoke, its officers, agents, volunteers and employees as additional insured's and the certificate of insurance shall show if the policies provide such coverage. Waiver of subrogation is required with respect to any policy of workers' compensation and employers' liability insurance required under this Section. The certificate of insurance shall show if the policies provide such waiver. Additional insured and waiver endorsements shall be received by the City's Risk Manager from the insurer with the certificate of insurance unless the City's Risk Manager agrees to another process. The City's Risk Manager may approve other documentation of such insurance coverages.

d. Insurance coverage shall be in a form and with an insurance company approved by the City which approval shall not be unreasonably withheld. Any insurance company providing coverage under this Contract shall be authorized to do business in the Commonwealth of Virginia.

SECTION 5. EMPLOYMENT AND CONDUCT OF PERSONNEL

5.1 City Residents: Pursuant to the provisions of Resolution Number 10610 of the Roanoke City Council it is required that in the employment of labor, on work performed for the City, that the Contractor shall give preference to residents of the City and give secondary preference to residents of the area within a radius of fifty (50) miles of the City, when such labor is available.

5.2 Employee Qualifications: Only skilled and reliable workers shall be employed for the Work. Should any person employed on the Work by the Contractor appear to Community Resources Program Administrator to be incompetent, unable to perform the Work, or disorderly, such person shall be removed from the Work immediately upon

proper notice to the Contractor from Community Resources Program Administrator and such person shall not again be used for this Contract.

5.3 Superintendence: The Contractor shall have a competent foreman or superintendent, satisfactory to Community Resources Program Administrator, on the jobsite at all times during the progress of the Work. The Contractor shall notify the City, in writing, of any proposed change in the foreman or superintendent including the reason therefore prior to making such change.

5.4 Drug-free Workplace: During the performance of this Contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purpose of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a Contractor, the employees of who are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the Contract.

The Contractor shall post a copy of the policy in a conspicuous place at the jobsite and assure that all Contractor, subcontractor, and supplier personnel entering the jobsite are informed of the policy.

SECTION 6. EMPLOYMENT DISCRIMINATION BY CONTRACTOR PROHIBITED

Every Contract of over $10,000 to which the City is a party shall contain the provisions in Sections 6.1 and 6.2 herein:

6.1 Nondiscrimination: During the performance of this Contract, the Contractor agrees as follows:

a. The Contractor will not discriminate against any Subcontractor, employee, or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by State law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal employment opportunity employer.

c. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

6.2 Nondiscrimination by Subcontractor or Vendor: The Contractor will include the provisions of the foregoing Subsections 6.1 (a), (b), and (c) in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

SECTION 7. SUBCONTRACTORS

7.1 Licensure: The Contractor shall comply with Title 54.1, Chapter 11, of the Code of Virginia, with respect to licensure of itself and all subcontractors employed to work on the project. The Contractor represents that it has verified that all subcontractors hold all required state and local licenses, including State Contractor's license and City business license. The Contractor shall verify that any additional subcontractors employed to work on the project, subsequent to the initial verification, hold all required state and local licenses, including State Contractor’s license and City business license. The Contractor is required to submit the Contractor's Certification as to Licensure of Subcontractors Form to Community Resources Program Administrator. This constitutes a material part of the Contractor's Contract with the City.

7.2 Change of Subcontractors: Subcontractors shall not be changed without the written approval of Community Resources Program Administrator.

7.3 Responsibility for Subcontractors: The Contractor shall not employ for the project any subcontractor that the City may, within a reasonable time, object to as unsuitable. The Contractor further agrees that it is as fully responsible to the City for the acts and omissions of its subcontractors, suppliers, and invitees on the jobsite and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by it.

SECTION 8. CONDITIONS AT SITE

8.1 Existing Conditions: The Contractor shall have visited the site prior to bidding and is responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the site, and the character and extent of existing improvements and work within or adjacent to the site. Claims as a result of failure to have done so will not be considered by the City and will be the sole responsibility of the Contractor.

8.2 Hidden Conditions: If, in the performance of the Contract, hidden physical conditions of a building being modified are exposed revealing unusual or materially different conditions than those ordinarily encountered or inherent in work of this nature, or if subsurface or latent conditions at the site are found which are materially different from those frequently present in the locality, from those indicated in the Contract Documents, or from those inherent in work of the character required by the Contract, the Contractor must report such conditions to Community Resources Program Administrator before the conditions are disturbed. Upon such notice, or upon his own observation of such conditions,

Community Resources Program Administrator will make such changes in the Contract Documents as he finds necessary to conform to the different conditions. Any change in the cost of the Work or the time needed for completion must be requested pursuant to Section 19 of these General Conditions.

8.3 Suspected Hazardous Material: If the Contractor, during the course of the project, observes the existence of any material which it suspects or knows to be hazardous to human health or the environment, the Contractor shall promptly notify Community Resources Program Administrator. Community Resources Program Administrator will provide the Contractor with instructions regarding the situation. The Contractor shall not perform any work involving the material or any work causing the material to be less accessible prior to receipt of special instructions from Community Resources Program Administrator.

SECTION 9. SURVEYS AND LAYOUT

9.1 Surveying Services: All necessary drawings showing the location of property lines, buildings, and other appropriate information shall be furnished to the Contractor through the drawings and specifications. The Contractor shall provide competent surveying and engineering services to verify the given information and to execute the Work in accordance with the Contract requirements and shall be responsible for the accuracy of Contractor's surveying and engineering services. The Contractor shall immediately notify Community Resources Program Administrator of any discrepancies and confirm such notice in writing within five (5) calendar days.

9.2 Survey Control: Such general reference points and bench marks on the building site as will enable the Contractor to proceed with the Work will be established in the drawings and specifications. If the Contractor finds that any previously established reference points have been lost or destroyed, Contractor shall promptly notify Community Resources Program Administrator.

9.3 Damage to Survey Control: The Contractor shall protect and preserve the established bench marks and monuments and shall make no changes in locations without written notice to and approval from Community Resources Program Administrator. Any of these which may be lost or destroyed or which require shifting because of necessary changes in grades or locations shall, subject to prior approval from Community Resources Program Administrator, be replaced and accurately located by the Contractor.

SECTION 10. DRAWINGS AND SPECIFICATIONS

10.1 Drawings and Specifications: The general character and scope of the Work are illustrated by the drawings and specifications. Where on any of the drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the Work. If the Contractor deems additional detail or information to be needed, Contractor may request the same in writing from Community Resources Program Administrator. The Contractor shall carry out the Work in accordance with the drawings and specifications and any additional detail drawings and instructions as issued by Community Resources Program Administrator. However, Contractor shall

immediately notify Community Resources Program Administrator of any discrepancies in such drawings and/or specifications and confirm such notice in writing within five (5) calendar days.

10.2 Discrepancies in Drawings: In case of difference between small and large scale drawings, the large scale drawings shall govern, unless otherwise directed in writing by Community Resources Program Administrator.

10.3 "Similar": Where the word "similar" appears on the drawings, it shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection with other parts of the Work.

10.4 Division of Specifications: The specifications are divided into several parts for convenience only, since the entire specifications must be considered as a whole. The divisions of the specifications are not intended to control the Contractor in dividing the work among subcontractors or to limit the work performed by any trade. The Contractor shall be responsible for the coordination of the trades, subcontractors, and vendors engaged upon this Work.

10.5 Dimension Accuracy: Measurements or dimensions shown on the drawings for site features, utilities, and structures shall be verified at the site by the Contractor. The location of underground utilities indicated on the plans is diagrammatic and were plotted from available records and field survey information and shall be considered approximate only, and the City makes no representations with regard to their accuracy. The Contractor shall not scale measurements or dimensions from the drawings. Where there are discrepancies, Community Resources Program Administrator shall be consulted. Where new work is to connect to, match with, or be provided for existing work, the Contractor shall verify the actual existing conditions and related dimensions prior to ordering or fabrication, so that such new work will properly fit with existing work.

10.6 As-Built Drawings: The Contractor shall maintain at the site for the City one copy of all drawings, specifications, addenda, approved shop or setting drawings, change orders, field deviations, and other documents or modifications (referred to herein as "As-Built Drawings") in good order and marked to record all changes as they occur during construction. These shall be available to Community Resources Program Administrator, the Project Inspector, and the City's testing personnel. These "As-Built Drawings" shall be neatly and clearly marked in color during construction to record all variations from the drawings made during construction. The representation of such variations shall include such supplementary notes, symbols, legends, documents, and details as may be necessary to clearly show the as-built construction.

10.7 Record Drawings: Upon completion of the Work and prior to Final Acceptance, the Contractor shall deliver to Community Resources Program Administrator, for preparation of the Record Drawings, one complete set of "As-Built Drawings" and documents referred to in Section 10.6.

SECTION 11. SCHEDULE OF THE WORK

11.1 Scheduling: The Contractor is responsible for the sequencing, scheduling, and coordinating of the Work, for monitoring the progress of the Work, and for taking appropriate action to keep the Work on schedule. The Contractor is responsible for coordinating Contractor's work on the Project with any other work being carried on by the City or by other City consultants or contractors at the site or for the Project. The Contractor shall prepare and submit to Community Resources Program Administrator a schedule for accomplishing the Work based upon the completion time stated in the Contract and submit such to Community Resources Program Administrator at the pre-construction conference. No progress payments will be made to the Contractor until after Contractor has submitted a schedule which is acceptable to Community Resources Program Administrator. All schedules under Section 11 shall be in both paper and electronic form unless otherwise directed by Community Resources Program Administrator.

11.2 Progress: The Contractor shall review the progress of the Work not less than each month, but as often as necessary to properly manage the project and stay on schedule. The Contractor shall collect and preserve information on Change Orders, including extensions of time. The Contractor shall evaluate this information and update the schedule monthly to finish within the contractually allowed time. The Contractor shall submit the updated schedule with each progress payment request. The scheduled completion date shall be within the period of time allowed by the Contract for completion of construction, except as amended by any Change Orders.

11.3 Delay and Recovery Schedule: Should there be any delay; Community Resources Program Administrator may require the Contractor to prepare, at no extra cost to the City, a plan of action and a recovery schedule for completing the Work by the contractual completion date. The plan of action and recovery schedule shall explain and display how the Contractor intends to regain compliance with the original schedule. The plan of action and recovery schedule, when required, shall be submitted and approved by Community Resources Program Administrator prior to Contractor's submission of the next monthly construction estimate. The City may withhold progress payments until such schedule is submitted and approved.

SECTION 12. CONSTRUCTION SUPERVISION

The Contractor shall be solely responsible to supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor is solely responsible to the City that the finished Work complies with the Contract Documents. The Contractor shall be solely responsible for health and safety precautions and programs for workers and others in connection with the Work. No inspection by, knowledge on the part of, or acquiescence by the City, or any other entity whatever shall relieve the Contractor from its sole responsibility for compliance with the requirements of the Contract or responsibility for health and safety programs and precautions.

SECTION 13. STANDARDS FOR MATERIAL INSTALLATION AND WORKMANSHIP

13.1 Material and Equipment: Unless otherwise specifically provided in this Contract, all equipment, material, and accessories incorporated in the Work are to be new and in first class condition. The Contractor shall furnish to Community Resources Program Administrator for approval the name of the manufacturer, the model number, and other identifying data and information respecting the performance, capacity, nature, and rating of the machinery and mechanical and other equipment which the Contractor contemplates incorporating in the Work. Machinery, equipment, material, and articles installed or used without required approval may be subject to subsequent rejection by the City.

13.2 Hazardous Substances: Unless specifically approved by the City or required by the specifications, the Contractor shall not incorporate any material into the Work containing asbestos or any material known by the Contractor to contain a substance known to be hazardous to health when the building and/or site is occupied by the City. If the Contractor becomes aware that a material required by the specifications contains asbestos or other hazardous substances, it shall notify the City and Community Resources Program Administrator immediately and shall take no further steps to acquire or install any such material without first obtaining City approval. (See also Sections 2.2 and 8.3 of these General Conditions.)

13.3 Workmanship: The workmanship shall be of the highest quality found in the building industry in every respect. All items of Work shall be done by workmen skilled in the particular task to which they are assigned. In the acceptance or rejection of work, no allowance will be made for lack of skill on the part of workmen. Poor or inferior workmanship (as determined by Community Resources Program Administrator, the City, or other inspecting authorities) shall be removed and replaced to conform to the highest quality standards of the trades concerned, or otherwise corrected to the satisfaction of Community Resources Program Administrator, the City, or other inspecting authority all at the Contractor's sole expense.

13.4 Instructions for Installation: Under the various sections of the specifications, where specified items are supplied with the manufacturer's printed instructions, recommendations, or directions for installation, or where such instructions, recommendations, or directions are available, installation of the specified items shall be in strict accordance with the manufacturer's printed instructions unless those instructions contradict the drawings or specifications, in which case Community Resources Program Administrator will be notified by Contractor for an interpretation and decision.

13.5 Installation Procedures Without Instructions: Where neither the manufacturer's printed instructions are available for installation of specific items, nor are specific code or standards given by reference to govern the installation of specific items; and where there is doubt concerning the installation procedures to be followed or the quality of workmanship to be maintained in the installation of specific items, the Contractor shall consult Community Resources Program

Administrator for approval of the installation procedures Contractor proposes to follow or the specific standards governing the quality of workmanship Contractor proposes to maintain during the installation of the items in question.

13.6 Codes and Standards: Under the various sections of the specifications, where reference is made to specific codes or standards governing the installation of specified items, installation shall in all cases be in strict accordance with the referenced codes and standards. Where no reference is made to specific codes or standards, installation shall conform to the generally recognized applicable standards for first-class installation of the specific item to be installed. Contractors are expected to be proficient and skilled in their respective trades and knowledgeable of the National Fire Protection Association (NFPA), the current edition of the Virginia Uniform Statewide Building Code (USBC) and its referenced technical codes and standards, Occupational Safety and Health Act (OSHA) and other codes and standards applicable to installations and associated work by its trade and/or that are applicable to the Work.

SECTION 14. SUBMITTALS

14.1 General: The Contractor shall submit for the approval of Community Resources Program Administrator all submittals required by the specifications or requested by Community Resources Program Administrator. All such submissions shall be made with such promptness as to cause no delay in this or any other part of the project, and to allow reasonable time for checking, correcting, resubmitting, and re-correcting. No part of the Work dealt with by a submittal shall be fabricated by the Contractor, save at Contractor's own risk, until such approval has been given. The Contractor shall maintain one (1) set of approved submittals at the jobsite at all times.

14.2 Format: Submittals shall be made in such number of copies that two (2) approved copies may be retained by Community Resources Program Administrator. Each submission shall be accompanied by a letter of transmittal listing the contents of the submission and identifying each item by reference to specification section or drawings. All submittals shall be clearly labeled with the name of the project and other necessary information. Catalog plates and other similar material that cannot be so labeled conveniently, shall be bound in suitable covers bearing the identifying data.

14.3 Supporting Material: Submittals shall be accompanied by all required certifications and other such supporting material and documents, and shall be submitted in such sequence or in such groups that all related items may be checked together. When submittals cannot be checked because the submission is not complete, or because submittals on related items have not been received, then such submittals will be returned without action or will be held, not checked, until the material which was lacking is received.

14.4 Coordination: Submittals shall have been reviewed by the Contractor and coordinated with all other related or affected work before they are submitted for approval, and shall bear the Contractor's certification that it has checked and approved them as complying with the information given in the Contract Documents. Submittals made without such certification and coordination will be

returned to the Contractor without action, and will not be considered a formal submission. The Contractor shall be responsible for checking all dimensions and coordinating all material and trades to ensure that the material proposed will fit in the space available and be compatible with other material provided.

14.5 Variations: If the submittals show variations from the Contract Documents because of standard shop practice or other reasons, the Contractor shall make specific mention of such variation in Contractor's letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise the Contractor will not be relieved of the responsibility for executing the Work in accordance with the Contract Documents even though such submittals have been approved.

14.6 "Or Equal": The drawings and/or specifications may indicate that Community Resources Program Administrator designed or detailed a portion of the plans around a particular product (most commonly a piece of equipment). Should a different product be proposed by the Contractor and accepted, all modifications, rerouting, relocations, and variations required for proper installation and coordination to comply with the design concept and requirements of the Contract Documents shall be the sole responsibility of the Contractor and shall be made at no extra cost to the City. This naming of a particular product, around which the plans were designed or detailed, is not intended to preclude the use of other products or favor the product named when a "brand name or equal" specification has been used. (See also Section 10 of Instructions to Bidders.) Rather it is only intended to acknowledge the reality that in many instances Community Resources Program Administrator must design around the dimensions and characteristics of a particular product.

14.7 Review by Community Resources Program Administrator: Community Resources Program Administrator will review and respond to the submittals within fourteen (14) calendar days. Checking and/or approval of submittals will be for general conformance with the design concept of the project and compliance with the information given in the Contract Documents, and will not include verification of quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Approval shall not be construed as permitting any departure from Contract requirements, authorizing any increase in price or time for completion or relieving the Contractor of the responsibility for any error in details, dimensions, or otherwise that may exist.

14.8 The Work shall be in accordance with approved submittals.

SECTION 15. INSPECTION AND INDEPENDENT TESTING

15.1 Inspection and Testing: All material and workmanship shall be subject to inspection, examination, and testing by Community Resources Program Administrator at any and all times during manufacture and/or construction. Community Resources Program Administrator shall have authority to reject defective material and workmanship and require its correction. Rejected workmanship shall be satisfactorily corrected and rejected material shall be satisfactorily replaced with proper material without charge therefore, and the Contractor shall promptly segregate and remove the rejected material from the

premises. If the Contractor fails to proceed at once with replacement of rejected material and/or the correction of defective workmanship, the City may, by contract or otherwise, replace such material and/or correct such workmanship and charge the cost to the Contractor, and/or may terminate the right of the Contractor to proceed as provided in Sections 26 or 27 of these General Conditions, the Contractor and surety being liable for any damage to the same extent as provided for in those Sections.

15.2 Payment for Inspection, Testing, and Certification:

a. Jobsite inspections, tests conducted on site, or tests of material gathered on site which the Contract requires to be performed by independent testing entities shall be contracted and paid for by the City. The Contractor shall promptly furnish, without additional charge, all reasonable facilities, labor, and material necessary for making such tests. Except as provided in Section 15.3 below, whenever such examination and testing finds defective material, equipment, or workmanship, the Contractor shall reimburse the City for the cost of reexamination and retesting.

b. Although conducted by independent testing entities, the City will not contract and pay for tests or certifications of material, manufactured products or assemblies which the Contract, codes, standards, etc. require to be tested and/or certified for compliance with industry standards such as Underwriters Laboratories, Factory Mutual or ASTM. If there are any fees to be paid for such tests and certifications, they shall be paid by the Contractor.

c. The Contractor shall also pay for all inspections, tests, and certifications which the Contract specifically requires it to perform or pay, together with any inspections and tests which it chooses to perform for its own quality control purposes.

15.3 Examination of Completed Work: Should it be considered necessary or advisable by City or Community Resources Program Administrator at any time before final acceptance of the entire Work to make an examination of any part of the Work already completed, by removing or tearing out portions of the Work, the Contractor shall on request promptly furnish all necessary facilities, labor, and material to expose the Work to be tested to the extent required. If such Work is found to be defective in any respect, due to the fault of the Contractor or its Subcontractors, Contractor shall pay for all the expenses of uncovering the Work, of examination and testing, and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, the actual cost of the Contractor's labor and material necessarily involved in uncovering the Work, the cost of examination and testing and Contractor's cost of material and labor necessary for replacement shall be paid to the Contractor and it shall, in addition, if completion of the Work has been delayed thereby, be granted a suitable extension of time.

15.4 Suspension of Work: The City may suspend the Work when in its judgment the drawings and specifications are not being followed. Any such suspension shall be issued in writing and continued only until the matter in question is resolved to

the satisfaction of the City. The cost of any such Work stoppage shall be borne by the Contractor unless it is later determined that no fault existed in the Contractor's Work.

15.5 Project Inspector: Failure of the Project Inspector to note or require correction of improper or defective work does not relieve the Contractor from its responsibility to correct such improper or defective work. The Project Inspector has no authority to and shall not:

a. Enter into the area of responsibility of the Contractor's superintendent;

b. Issue directions relative to any aspect of construction means, methods, techniques, sequences or procedures, or in regard to safety precautions and programs in connection with the Work;

c. Authorize or suggest that the City occupy the project, in whole or in part; or

d. Issue a certificate for payment.

SECTION 16. USE OF PREMISES AND REMOVAL OF DEBRIS

16.1 Jobsite Coordination: The Contractor shall perform the Contract in such a manner as not to interrupt or interfere with the operation of any existing activity on the premises or with the work of any other contractor.

16.2 Storage of Material: The Contractor shall store apparatus, material, supplies, and equipment in such orderly fashion at the site of the Work as will not unduly interfere with the progress of its Work or the work of any other contractor.

16.3 Jobsite Appearance: The Contractor expressly undertakes, either directly or through its Subcontractor(s), to clean up frequently all refuse, rubbish, scrap material, and debris caused by his operations, to the end that at all times the jobsite shall present a neat, orderly, and workmanlike appearance. No such refuse, rubbish, scrap material, and debris shall be left within the completed Work nor buried on the building site, but shall be properly protected and removed from the site and properly disposed of in a licensed landfill or otherwise as required by law.

16.4 Final Cleaning: The Contractor expressly undertakes, either directly or through its Subcontractor(s), before final payment, to remove all surplus material, false work, temporary structures, including foundations thereof, and debris of every nature resulting from its operations and to put the site in a neat, orderly condition, to thoroughly clean and leave reasonably dust free all finished surfaces including all equipment, piping, etc., on the interior of all buildings included in the Contract; and to thoroughly clean all glass installed under the Contract including the removal of all paint and mortar splatter and other defacements. If a Contractor fails to clean up at the completion of the Work, the City may do so and charge for costs thereof to the Contractor in accordance with these General Conditions.

16.5 Erosion Control: During and at completion of the Work, the Contractor shall prevent site soil erosion, the runoff of silt and/or debris carried by water from the site, and the blowing of dust or debris off the site in accordance with the

applicable requirements and standards of the Virginia Erosion and Sediment Control Handbook, latest edition, and of the Contract Documents.

SECTION 17. PROTECTING PERSONS AND PROPERTY

17.1 Protection on Site: The Contractor expressly undertakes both directly and through its Subcontractor(s), to take every reasonable precaution at all times for the protection of all persons and property which may come on the jobsite or be affected by the Contractor's operation in connection with the Work.

17.2 Safety and Health Precautions: The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety and health precautions and programs in connection with the Work, including but not limited to provision of appropriate sanitation facilities, if applicable.

17.3 Protecting the Public: The Contractor shall in all cases protect the public and the Work, during its execution, by posting and maintaining, at its expense, appropriate signs, barricades, barriers, lights, flagmen, and other safety devices in accordance with the current edition of the "Virginia Work Area Protection Manual".

17.4 Protecting the Work and Adjacent Property: The Contractor shall continuously maintain adequate protection of all the Work from damage and shall protect the City's property from injury or loss arising in connection with this Contract. The Contractor shall adequately protect adjacent property to prevent any damage to it or loss of use and enjoyment by its owners. The Contractor shall provide and maintain all passageways, guard fences, lights, and other facilities for protection required by public authority, local conditions, any of the Contract Documents or erected for the fulfillment of its obligations for the protection of persons and property.

17.5 Emergencies: In an emergency affecting the safety or life of persons or of the Work, or of the adjoining property, the Contractor, without special instruction or authorization from Community Resources Program Administrator, shall act, at Contractor’s discretion, to prevent such threatened loss or injury. Also, should Contractor, to prevent threatened loss or injury, be instructed or authorized to act by Community Resources Program Administrator, Contractor shall so act immediately, without appeal.

SECTION 18. DAMAGES TO THE WORK AREA

18.1 Damage to the Work: The Contractor shall have charge of and be solely responsible for the entire Work and be liable for all damages to the Work including, but not limited to any of the damages hereafter mentioned, and to any property in the vicinity of the Work, until its completion and acceptance by Community Resources Program Administrator.

a. Where the work involves alterations, renovations, or modifications to any existing building, the Contractor shall familiarize itself with the structural condition of such building before proceeding with any work. It shall be the Contractor's responsibility to take all necessary safeguards to protect and maintain all parts of the building in a safe condition at all times during the

process of construction and to protect from damage those portions of the building that are to remain.

b. Under no condition shall any load be placed on any part of a building, whether new or existing, in excess of the load the structure will safely support, and no structural member(s) shall be cut or altered without the written consent of Community Resources Program Administrator.

c. The Contractor shall conduct all operations in such a manner as to avoid damage to existing work and surfaces within any existing building that are to remain. Any and all damaged work and surfaces shall be repaired, replaced, or restored to their original condition at the time when this work was started, and the expense of such work shall be borne by the Contractor.

18.2 Damage to Utilities: The respective Utility Company shall be given a minimum of forty-eight (48) hours notice prior to any adjustment of utilities, and the Contractor shall comply with the provisions of the Virginia Underground Utilities Damage Prevention Act, Section 56-265.14 et seq., of the Code of Virginia. Damages that may occur to the utilities during the Work shall be the sole responsibility of the Contractor.

18.3 Relocation of Utilities: Should any utilities require adjustment during the Work, it shall be the Contractor's responsibility to have such utilities relocated as a part of the Work and to contact and cooperate with the respective Utility Company in performance of such operations.

18.4 Damage to Other Work and Existing Structures: The Contractor shall take into account all other work which shall be done by other parties on the jobsite, either now known or which may become necessary during the progress of the Work, and shall be responsible for any damage done to the other work. Damage to concrete curbs, gutters, sidewalks, or any existing facility that may occur during the construction shall be repaired or replaced by the Contractor, at its sole expense, as directed by and to the satisfaction of Community Resources Program Administrator.

18.5 Weather Damage: Damage with respect to the Work caused by the weather shall be the responsibility of the Contractor.

18.6 Blasting: Any damage that may occur due to blasting shall be the sole responsibility of the Contractor.

SECTION 19. CHANGES IN THE WORK

19.1 Changes in Drawings and Specifications: The City reserves the right to make such changes in the drawings and specifications and in the character of the Work as may be necessary or desirable to ensure completion in the most satisfactory manner, provided such changes do not materially alter the original plans and specifications or change the general nature of the Work as a whole. Such changes shall not be considered as waiving or invalidating any condition or provision of the Contract and Bonds. Such changes shall be issued by Community Resources Program Administrator to Contractor.

19.2 Changes in Quantities: The City reserves the right to make changes in the quantities of the Work, as may be considered necessary or desirable and such changes shall not be considered as waiving or invalidating any conditions or provisions of the Contract or Bonds. The Contractor shall perform the Work as altered, whether increased or decreased, and no allowances shall be made for anticipated profits. Payment to the Contractor for the changes in the quantities of work shall be made only for the actual quantities of work performed and material furnished at the unit prices set forth in the Contract, except as provided below.

a. When the quantity of work to be done or of material to be furnished under any item of the Contract is more than 125 percent of the quantity stated in the Contract, then either party to the Contract, upon demand, shall be entitled to negotiate for revised consideration on the portion of work above 125 percent of the quantity stated in the Contract.

b. When the quantity of work to be done or of material to be furnished under any item of the Contract is less than 75 percent of the quantity stated in the Contract, then either party to the Contract, upon demand, shall be entitled to negotiate for revised consideration on the Work performed.

c. Any consideration after that as set forth above shall be paid for as is hereinafter provided under Section 19.7. The foregoing notwithstanding, the quantity of work to be done or of material to be furnished under any item of the Contract, or the total original Contract shall not be increased more than 25 percent or reduced by more than 25 percent without the written consent of the Contractor and City.

19.3 Changes in the Work: No change with respect to the Work, except in an emergency situation threatening life or property, shall be made by the Contractor without the prior written approval of the City. The Contractor shall deliver any request for a change in the Work, Contract price, and/or completion time in writing to Community Resources Program Administrator within ten (10) calendar days of the occurrence requiring the change. The Contractor shall be required to certify the cause of the change order and, if appropriate, length of time involved. Payment for such changes approved by Community Resources Program Administrator shall be as set forth in Section 19.7. This written request is a condition precedent to the consideration of any such request by the City.

19.4 Delays:

a. In the event a delay is caused by the City, Community Resources Program Administrator, any other separate contractor employed by the City, or any party for whom the Contractor deems the City responsible, or the agents and employees of any of them, the Contractor shall inform the City and Community Resources Program Administrator immediately at the time of the occurrence by the fastest means available and shall give written notice within a reasonable time, not to exceed ten (10) calendar days. The Contractor's notice to Community Resources Program Administrator shall specify the nature of the delay claimed by the Contractor, the cause of the delay, and the impact of the delay on the Contractor's work schedule to the fullest extent possible. The City will, within a reasonable time, not to

exceed ten (10) calendar days, respond to the Contractor's notice with a resolution, remedy, or direction to alleviate the delay or with a notice rejecting the claim for delay alleged to be caused by the City or parties for whom the City is responsible. If the delay is not then resolved, the Contractor may then submit a request for change order in accordance with Sections 19.3 and 19.5. In the event of other delays, the Contractor shall give the City and Community Resources Program Administrator written notice within ten (10) calendar days of the occurrence causing the delay.

b. No extension of time or compensation shall be allowed for a delay if the Contractor failed to give notice in the manner and within the time prescribed in Subsection 19.4 (a). Furthermore, no extension of time shall be given or additional compensation allowed for any delay unless a claim therefore is made in writing to the City, with a copy to Community Resources Program Administrator, within ten (10) calendar days of the occurrence causing the delay. The claim shall state the cause of the delay, the number of days of extension requested, and any compensation requested by the Contractor. The Contractor shall report the termination of the delay to the City and Community Resources Program Administrator not less than ten (10) calendar days after such termination. Failure to give notice of either the inception or the termination of the cause of delay or failure to present a claim for extension of time and/or monetary compensation within the times prescribed are conditions precedent to the assertion of any such claims by Contractor and shall constitute a waiver by Contractor of any such claims for compensation or extension based upon that cause.

c. Requests for compensation for delays must be substantiated by itemized data and records clearly showing that the work delayed were progressing according to the approved schedule and that the costs are directly attributable to the delay in the Work claimed. The Contractor shall provide written schedules demonstrating how the Work being delayed affects the approved schedule.

d. No extension of time, additional compensation, or change in the Contract price shall be allowed for any delays caused in whole or in part by the Contractor, any subcontractors, or any supplier. (For unavoidable justified delays, see Section 19.9 of these General Conditions.)

19.5 Change Orders: All change orders must indicate that the Contract Time for Completion is not changed or is either increased or decreased by a specific number of days. Any change or requested change in the Contract price shall also be included in the change order. The Contractor must provide written justification for an extension of the Time for Completion to Community Resources Program Administrator and to the City. The written justification must demonstrate an anticipated actual increase in the time required to complete the Work beyond that allowed by the Contract as adjusted by prior change orders or amendments to the Contract, not just an increase or decrease in the time needed to complete some portion of the total Work. When a Critical Path Method (CPM) schedule is required by the Contract, or is used for the convenience of the Contractor, no

increase to the Time for Completion shall be allowed unless, and then only to the extent that, the additional or changed Work increases the length of the critical path. Approved increases in time required to complete the Work shall be added to the Time for Completion. Decreases in time as a result of the change order shall be demonstrated by a decrease in the critical path of the work if CPM scheduling is properly used and updated by the Contractor. If not, the City shall determine the appropriate decrease by the best means possible. Approved decreases in the time needed to complete the Work shall be deducted from the Contract completion date. The change to time or Contract price allowed by each change order shall include all time and monetary impacts of the change, whether the change order is considered alone or with all other changes during the course of the project. Failure to include a change to time and/or Contract price in a change order shall waive any claims the Contractor may have for any change to the time and/or Contract price unless the parties mutually agree in writing to postpone a determination of the change to time and price resulting from the change order. Such a determination may be postponed not more than forty-five (45) calendar days to give the Contractor an opportunity to demonstrate a change in the time and/or price needed to complete the Work. However, the Contractor shall continue with the Work as may be directed by Community Resources Program Administrator and shall not stop work on the Project unless directed to do so by Community Resources Program Administrator.

19.6 Extra Work: The City reserves the right to make alterations or changes in the Work as the Work progresses. When any work is necessary to the proper completion of the project which was not provided for in the Contract, the Contractor shall do such work, but only when and as ordered in writing by Community Resources Program Administrator. Payment for such extra work shall be made as hereinafter provided in Section 19.7.

19.7 Payment Methods for Extra Work: The extra work done by the Contractor as authorized and approved by Community Resources Program Administrator shall be paid for in the manner hereinafter described; and the compensation thus provided shall be accepted by the Contractor as payment in full for all labor, material, tools, equipment, incidentals, all superintendents' and timekeepers' services, all insurance, bonds, and all other reasonable overhead expenses incurred in the performance of the extra work. Payment for extra work may be made by one of the following methods, as agreed on in writing by Community Resources Program Administrator and the Contractor before said extra work is commenced, subject to all other conditions of the Contract:

a. Unit prices; or

b. Lump sum price; or

c. The cost of change in work plus ten percent (10%) of allowable costs. Allowable costs for purposes of this paragraph shall only include labor, material, sales tax, the rental of power tools and equipment actually used, or a reasonable price for the use of power tools and equipment owned by the Contractor based upon their life expectancy and purchase price, utilities, pro rata charges for foremen, and all payroll charges such as employer's FICA contribution, Public Liability and Workers' Compensation

Insurance, but only if all such costs are incurred as the direct result of the changes in the Work. The change in cost for labor and material bonds and for performance bonds relative to the value of the extra work shall be allowable cost but shall not be marked up. If any subcontractor at any tier does all or part of the Work, the subcontractor's markup on that Work shall be fixed at fifteen percent (15%) of the allowable cost as defined herein.

19.8 Disputed Claims for Extra Work: If one of the payment methods set forth in Section 19.7 is not agreed on by Community Resources Program Administrator, the City may retain either an independent contractor to perform such extra work or use its own forces to perform such extra work and the Contractor shall cooperate fully with the independent contractor or City in its performance of the extra work. However, Community Resources Program Administrator may also direct Contractor to perform such extra work and any dispute will be handled as set forth in Section 31 of these General Conditions.

19.9 Change in Contract Time or Contract Price: The Contractor may request an extension of time or change in the Contract price should the Work be obstructed or delayed by any justified unavoidable delays not caused in whole or in part by the Contractor, any subcontractor, or suppliers. However, delays caused by weather conditions will not be considered justified unavoidable delays unless they are caused by unusual weather as set forth in Section 4.2 of the Instructions to Bidders, in which case only an extension of time may be considered by City, but no additional compensation will be allowed for unusual weather. Furthermore, Contractor agrees that for any delays not caused by the City or any delays beyond the control of the City, no additional compensation will be due the Contractor and no change in the Contract price will be allowed by the City, only an extension of the Contract time will be considered by the City. The Contractor shall deliver requests for changes in the Contract price and/or completion time in writing to Community Resources Program Administrator within ten (10) calendar days of the occurrence requiring the change. Approved changes that alter the time of the Contract shall extend the completion time by a period equivalent to the certified time lost by such occurrence. No change in Contract price and/or completion time shall be allowed if the above notice has not been properly given, such notice being a condition precedent to any such request by the Contractor. However, the Contractor shall continue with the Work as may be directed by Community Resources Program Administrator and shall not stop work on the Project unless directed to do so by Community Resources Program Administrator.

SECTION 20. PAYMENT FOR WORK

20.1 Monthly Construction Estimates: Monthly construction estimates shall be submitted to Community Resources Program Administrator, 1802 Courtland Road, N.E., Roanoke, Virginia 24012, no more than once every thirty (30) calendar days.

20.2 Preparing Progress Payment Requests: In preparing construction estimates, the Contractor may request a progress payment based on the actual percentage of work completed during the preceding month. The estimate shall contain a breakdown of the total Contract amount; to include a separate breakdown of all

approved change orders, into principal items of construction, showing the estimated quantity, unit price, and total for each item. In preparing progress payment requests, the material delivered on the site and preparatory work done may be taken into consideration, if properly documented, or as may be required by Community Resources Program Administrator so that quantities can be verified. In addition to material delivered on the site, material such as large pieces of equipment and items purchased specifically for the project, but stored off the site, may be considered for payment, provided prior written approval is given by Community Resources Program Administrator.

20.3 Progress Payments: The City will make a progress payment to the Contractor on the basis of a duly certified and approved progress payment request for the work performed under the Contract. In the event that the City disagrees with the monthly construction progress payment request submitted by the Contractor, or in the event the As-Built Drawings are not being kept current, the City may withhold all or a portion of the progress payment until such dispute is resolved to the satisfaction of the City. If there are any objections or problems with the progress payment request, the City will notify the Contractor of such matters. If the progress payment request is approved by the City, payment will be made by the City to the Contractor not more than thirty (30) calendar days after such request has been approved. However, if there is an objection or problem with a progress payment request, the Contractor shall continue with the Work as may be directed by Community Resources Program Administrator and shall not stop work on the Project unless directed to do so by Community Resources Program Administrator. Any such disputes shall be handled as set forth in Section 31 of these General Conditions.

20.4 Retainage: To ensure proper performance of the Contract, the City shall retain, unless stipulated otherwise, five percent (5%) of each progress payment until Final Acceptance of all work covered by the Contract. The Contractor may request that such retainage be paid into an escrow account on certain Contracts, pursuant to Section 2.2-4334 of the Code of Virginia. (See also Sections 6.2 and 14.6 of Instructions to Bidders.)

20.5 Ownership of Material and Work: All material and work covered by progress payments shall become the property of the City. This provision shall not relieve the Contractor from the responsibility for all material and to maintain all completed work and to repair all damaged work. The Contractor shall not deem a progress payment as a waiver to complete the terms of the Contract or shift the risk of loss from the Contractor to the City. The Contractor warrants that Contractor has good title to all material, equipment, and supplies which Contractor uses in the Work or for which Contractor accepts payment in whole or in part.

20.6 Payments to Others by Contractor: The Contractor agrees that Contractor will comply with the requirements of Section 2.2-4354 of the Code of Virginia regarding Contractor's payment to other entities and that Contractor will take one of the two actions permitted therein within seven (7) calendar days after receipt of amounts paid to Contractor by the City. The Contractor agrees that Contractor shall indemnify and hold the City harmless for any lawful claims resulting from

failure of the Contractor to make prompt payments to all persons supplying him equipment, labor, tools, or material in prosecution and completion of the Work provided for in the Contract. In the event of such claims, the City may, after providing written notice to the Contractor, withhold from any progress and/or final payment the unpaid sum of money deemed sufficient to pay all lawful claims and associated costs in connection with the Contract.

20.7 Final Payment: Within thirty (30) calendar days after the Final Acceptance of the Work, the City shall pay the Contractor the Final Payment, less all prior payments, damages, setoffs, liquidated damages, any amounts withheld from retainage, or any other amounts Contractor may owe the City for any reason whatever.

20.8 Payment and Acceptance: No payment, final or otherwise, nor partial or entire use, occupancy, or acceptances of the Work by the City shall be an acceptance of any work or material not in accordance with the Contract, nor shall the same relieve the Contractor of any responsibility for any faulty material or workmanship or operate to release the Contractor or its surety from any obligation under the Contract or the Performance Bond or the Labor and Material Payment Bond.

20.9 Right to Audit: The Contractor agrees that the City, and any approving Federal or State Agency or any of their duly authorized representatives, shall have access to any books, documents, papers, records, schedules and electronic data of the Contractor which are pertinent to this Project for the purpose of making an audit, examinations, excerpts, copies or transcriptions and that Contractor will provide copies of such items to City upon City's request, at no cost to City.

SECTION 21. LIQUIDATED DAMAGES

If liquidated damages are provided by the Contract, the following provisions shall apply:

a. Subject to the provisions of the General Conditions granted for extension of time allowed for completion of the Work, if the Work is not substantially completed by the date required in the Contract, the Contractor shall owe to the City, not as a penalty but as step one liquidated damages, the sum stated in the Contract for step one liquidated damages for each and every calendar day of delay in substantial completion.

b. Once the Work is substantially complete, the accrual of step one liquidated damages shall stop and the Contractor shall have thirty (30) calendar days in which to achieve Final Acceptance of the Work.

c. If Final Acceptance of the Work is not achieved by the thirtieth (30th) calendar day after substantial completion, and if any extension of time is not granted by the City, the Contractor shall owe to the City, not as a penalty but as step two liquidated damages, the sum stated in the Contract as step two liquidated damages for each and every calendar day of delay in Final Acceptance. All such liquidated damages set forth in this Section 21 are in addition to any other damages the City may be entitled to recover from the Contractor.

SECTION 22. INSPECTION FOR SUBSTANTIAL COMPLETION AND FINAL ACCEPTANCE

22.1 Substantial Completion: The Contractor shall notify the City, in writing, that the Work will be ready for inspection to determine if it is substantially complete and ready for testing on or after a certain date, which date shall be stated in the notice. The notice shall be given at least ten (10) calendar days in advance of said date and shall be forwarded through Community Resources Program Administrator. Inspection and testing shall take place at a time mutually agreeable to the Contractor, City, and Community Resources Program Administrator. The inspection shall determine if substantial completion has been accomplished. If so, Community Resources Program Administrator will issue a Certificate of Substantial Completion and attach a written list of unfinished Work and defective Work, commonly referred to as a "punch list", which must be finished and corrected to obtain Final Acceptance.

22.2 Request for Final Acceptance: The Contractor shall notify Community Resources Program Administrator, in writing, that the Work will be ready for final inspection and testing on or after a certain date, which date shall be stated in the notice. That inspection and any necessary testing shall be conducted in the same manner as the inspection for substantial completion. When the Work is finally and totally complete, including the elimination of all known deficiencies, the Work shall be finally accepted by the City and final payment shall be made in accordance with Section 20.7 of these General Conditions.

22.3 Final Inspection: Community Resources Program Administrator will conduct the final inspection, and may elect to have other persons of its choosing also participate in the inspection. If one or more re-inspection is required, the Contractor shall reimburse the City for all costs of re-inspection or, at the City's option, the costs may be deducted from payments due to the Contractor.

22.4 As-Built Drawings: No Contract retainage will be released prior to receipt of all approved As-Built Drawings.

22.5 Final Acceptance: Upon successful completion of the final inspection and all Work required by the Contract, including but not limited to the delivery of the following documents and items; As-Built drawings, operation and maintenance manuals, written warranties, Certificate of Substantial Completion, Affidavit of Payment of Claims, and MBE/WBE/SB/VB Usage Status Form, Community Resources Program Administrator will furnish a written Certificate of Final Acceptance of the Work to the Contractor. Community Resources Program Administrator may accept the Work for occupancy or use while asserting claims against the Contractor, disputing the amount of compensation due to the Contractor, disputing the quality of the Work, its completion, or its compliance with the Contract Documents, and the like.

22.6 Release By Contractor: The acceptance by the Contractor of the final payment or a payment designated as such shall be and does operate as a release by the Contractor of all claims by the Contractor against City and of all other liability of the City to the Contractor whatever, including liability for all things done or furnished in connection with the Work or the Contract.

SECTION 23. WARRANTY OF MATERIAL AND WORKMANSHIP

23.1 The Contractor warrants that, unless otherwise specified, all material and equipment incorporated in the Work under the Contract shall be new, in first class condition, and in accordance with the Contract Documents. The Contractor further warrants that all workmanship shall be of the highest quality and in accordance with the Contract Documents and shall be performed by persons qualified at their respective trades.

23.2 Work not conforming to these warranties shall be considered defective.

23.3 These warranties of material and workmanship are separate and independent from and in addition to any of the Contractor's other guarantees or obligations in this Contract or that may arise by law.

SECTION 24. GUARANTEE OF WORK

24.1 **Two Year Warranty:** The Contractor does warrant and guarantee the Work against defects or deficiencies in the Work and in all material, equipment, and workmanship for a period of two (2) years from the date of Final Acceptance.

24.2 **Defective Work:** The Contractor agrees it shall repair or replace, at Contractor's sole expense, and to the satisfaction of Community Resources Program Administrator, any work, material, equipment, or part that is found, by Community Resources Program Administrator, to be defective.

24.3 **Repairs:** If, within any guarantee period, defects are noticed by Community Resources Program Administrator which require repairs or changes in connection with the guaranteed work, those repairs or changes being in the determination of Community Resources Program Administrator rendered necessary as the result of the use of material, equipment, or workmanship which is defective, inferior, or not in accordance with the terms of the Contract, then the Contractor shall, promptly upon receipt of notice from Community Resources Program Administrator, such notice being given not more than four weeks after the expiration of any such guarantee period, and without any expense to the City:

a. Place in satisfactory condition all guaranteed work and correct all defects therein; and

b. Make good all damage to the structure, site, equipment, or contents thereof, which in the determination of Community Resources Program Administrator is the result of the use of material, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract; and

c. Make good any work or material or the equipment and contents of structures or the site disturbed in fulfilling any such guarantee.

24.4 **Warranty Extension:** In any case, where in fulfilling the requirements of the Contract or any guarantee embraced in or required thereby, the Contractor disturbs, damages or repairs any work guaranteed under the Contract, Contractor shall restore such work to a condition satisfactory to Community

Resources Program Administrator and guarantee such restored work to the same extent and for a like additional period of time as it was originally guaranteed under this Contract.

24.5 Correction of Defects: If the Contractor, after notice, fails to proceed promptly, but in no event longer than thirty (30) calendar days after such notice, unless otherwise agreed to by Community Resources Program Administrator, to comply with the terms of the guarantee and/or correct the Work, the City may have the defects corrected by its own forces or another contractor and the Contractor and its surety shall be liable for all costs and expenses incurred in doing so.

24.6 Nothing contained in this section shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents or the law of Virginia, including liability for defective work.

SECTION 25. STOP WORK ORDER

In the event that conditions exist such that no work can or should continue, other than the routine closing of the site, the Contractor may submit to Community Resources Program Administrator a request to stop work or Community Resources Program Administrator on his/her own may issue a Stop Work Order. Community Resources Program Administrator will, if he/she approves the request or issues the order himself/herself, deliver a written "Stop Work Order" to the Contractor stipulating the effective date and the Contract time remaining. The Work, other than the routine closing of the site, and Contract time shall not again be started until a written "Resume Work Order" is received by the Contractor from Community Resources Program Administrator. When the Work is stopped at the request of the Contractor and through no fault of the Contractor, the Contractor may only recover from the City payment for the cost of the Work actually performed, together with reasonable overhead and profit thereon up to that time, but profit shall be recovered only to the extent that the Contractor can demonstrate that it would have had profit on the entire Contract if it had completed the Work. The Contractor may not receive profit or any other type of compensation for parts of the Work not performed, including, but not limited to, home office overhead or any other such costs. The Contractor may also recover the actual cost of physically closing down the jobsite, but no other costs of the Stop Work Order. The City may offset any claims it may have against the Contractor against the amounts due to the Contractor. In no event shall the Stop Work Order to the Contractor relieve in any way the obligations of the Contractor's surety on its payment and performance bonds. When work is stopped by Community Resources Program Administrator due to any fault of the Contractor, the Contractor may not recover any of the above costs or items or any other costs, profits, expenses, or damages of any type.

SECTION 26. TERMINATION OF CONTRACT FOR CAUSE

26.1 Termination for Cause: If the Contractor should be adjudged a bankrupt, or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, the City may terminate the Contract. If the Contractor should refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper material, or if it should fail to make prompt payment to subcontractors or

suppliers of material or labor, or disregard laws, ordinances, or the written instructions of Community Resources Program Administrator, or otherwise fails to comply with any of the terms or provisions of this Contract including, but not limited to, poor services, work or material, then the City may terminate this Contract. In no event shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.

26.2 Possession of Work: Upon termination of the Contract, the City may take possession of the premises and of all material, tools, and appliances thereon and finish the Work by whatever method the City may deem expedient. In such case the Contractor shall not be entitled to receive any further payment of any type. If the expense of finishing the Work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the Contract price, the Contractor shall pay the difference to the City, together with any other cost or expenses of terminating the Contract and having it completed by others, together with any and all other damages City may be entitled to from the Contractor.

26.3 Alternative Termination: If it should be judicially determined that the City improperly terminated this Contract for cause, then the termination shall be deemed to be a termination for the convenience of the City.

26.4 Termination Rights: Termination of this Contract under Section 26 or Section 27 is without prejudice and in addition to any other rights or remedies of the City against the Contractor.

SECTION 27. TERMINATION FOR CONVENIENCE OF CITY

27.1 Termination for Convenience: The City, at its discretion, may terminate this Contract at any time without cause, in whole or in part, upon giving the Contractor written notice of such termination. Upon such termination, the Contractor shall immediately cease work and remove from the jobsite all of its labor forces, equipment, and material as City elect not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as City may require assigning to the City the Contractor's interest in all subcontracts and purchase orders designated by City. After all such steps have been taken to City's satisfaction; the Contractor shall receive as full compensation for termination and assignment only the following:

a. All amounts then otherwise due under the terms of this Contract for actual work performed and approved by City; and

b. Reasonable compensation for the actual cost of demobilization incurred by the Contractor as a direct result of such termination. The Contractor shall not be entitled to any compensation for lost profits or for any other type of contractual compensation or damage, other than those provided by the preceding sentence, including any on site or home office overhead. Upon payment of the foregoing, City shall have no further liabilities or obligations to Contractor of any nature.

27.2 Termination Effect on Surety: In no event shall termination for the convenience of the City terminate the obligation of the Contractor's surety on its payment and performance bonds.

SECTION 28. PRECONSTRUCTION CONFERENCE

Community Resources Program Administrator shall notify the Contractor as to the location, date, and time of a preconstruction conference to confirm procedures for processing construction estimates for payment and related submissions and to discuss other matters pertaining to scheduling and execution of the Work.

SECTION 29. PROJECT SIGN(S)

The Contractor shall supply, erect, and maintain Project Sign(s) in accordance with the City of Roanoke Standard Detail. The sign(s) shall be located as directed by Community Resources Program Administrator. The Contractor shall not display any other signs or advertisements.

SECTION 30. ASSIGNMENTS

The Contractor shall not assign, in whole or in part, any of its rights, duties, or obligations under this Contract with the City without the prior written consent of the City.

SECTION 31. CONTRACTUAL DISPUTES

Contractual claims, whether for money or for other relief, including any disputes as to change orders or extra work, shall be submitted, in writing, no later than sixty (60) calendar days after final payment or payment designated as a final payment; however, written notice of the Contractor's intention to file such claim must be given at the time of the occurrence or beginning of the work upon which the claim is based. Such notice is a condition precedent to the assertion of any such claim by the Contractor. A written decision upon any such claims will be made by the City Manager or his/her designee (hereafter City Manager) within thirty (30) calendar days after submittal of the claim and any practically available additional supporting evidence required by the City Manager. The Contractor may not institute legal action prior to receipt of the City's decision on the claim unless the City Manager fails to render such decision within one hundred twenty (120) calendar days from submittal of its claim. The decision of the City Manager shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim or from expiration of the 120 day time limit, whichever occurs first, initiates legal action as provided in Section 2.2 - 4364, of the Code of Virginia. Failure of the City to render a decision within said one hundred twenty (120) calendar days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the City's failure to render a decision within said one hundred twenty (120) calendar days shall be Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to Section 2.2 - 4365, of the Code of Virginia, has been established for contractual claims under this Contract.

CITY OF ROANOKE, VIRGINIA

SUPPLEMENTAL GENERAL CONDITIONS

NOT USED

2013 Funding Approval/Agreement
Title I of the Housing and Community Development Act (Public Law 930383)
HI-00515R of 20515R

U.S. Department of Housing and Urban Development
Office of Community Planning and Development
Community Development Block Grant Program

OMB Approval No. 2506-0193 (exp 1/31/2015)

1. Name of Grantee (as shown in item 5 of Standard Form 424)	3a. Grantee's 9-digit Tax ID Number:	3b. Grantee's DUNS Number:	4. Date use of funds may begin (mm/dd/yyyy):
CITY OF ROANOKE	54-6001569	006704316	07/01/2013

2. Grantee's Complete Address (as shown in item 5 of Standard Form 424)	5a. Project/Grant No. 1	6a. Amount Approved
215 CHURCH AVENUE, S.W., ROOM 364 ROANOKE, VA 24011	B13 MC 51 0020	$1,578,101
	5b. Project/Grant No. 2	6b. Amount Approved
3FD FYI (E) EC1 863/50162	5c. Project/Grant No. 3	6c. Amount Approved

Grant Agreement: This Grant Agreement between the Department of Housing and Urban Development (HUD) and the above named Grantee is made pursuant to the authority of Title I of the Housing and Community Development Act of 1974, as amended, (42 USC 5301 et seq.). The Grantee's submissions for Title I assistance, the HUD regulations at 24 CFR Part 570 (as now in effect and as may be amended from time to time), and this Funding Approval, including any special conditions/addendums, constitute part of the Agreement. Subject to the provisions of this Grant Agreement, HUD will make the funding assistance specified here available to the Grantee upon execution of the Agreement by the parties. The funding assistance specified in the Funding Approval may be used to pay costs incurred after the date specified in item 4 above provided the activities to which such costs are related are carried out in compliance with all applicable requirements. Pre-agreement costs may not be paid with funding assistance specified here unless they are authorized in HUD regulations or approved by waiver and listed in the special conditions to the Funding Approval. The Grantee agrees to assume all of the responsibilities for environmental review, decision making, and actions, as specified and required in regulations issued by the Secretary pursuant to Section 104(g) of Title I and published in 24 CFR Part 58. The Grantee further acknowledges its responsibility for adherence to the Agreement by sub-recipient entities to which it makes funding assistance hereunder available.

U.S. Department of Housing and Urban Development (By Name)		Grantee Name	
Ronnie J. Legette		Christopher P. Morrill	
Title		Title	
Director, Office of Community Planning and Development		City Manager	
Signature	Date (mm/dd/yyyy) JUL 26 2013	Signature	Date (mm/dd/yyyy) 7-31-13

7. Category of Title I Assistance for this Funding Action (check only one)
- [x] a. Entitlement, Sec 106(b)
- [ ] b. State-Administered, Sec 106(d)(1)
- [ ] c. HUD-Administered Small Cities, Sec 106(d)(2)(B)
- [ ] d. Indian CDBG Programs, Sec 106(a)(1)
- [ ] e. Surplus Urban Renewal Funds, Sec 112(b)
- [ ] f. Special Purpose Grants, Sec 107
- [ ] g. Loan Guarantee, Sec 108

8. Special Conditions (check one)
- [x] None
- [ ] Attached

9a. Date HUD Received Submission: 07/01/2013
9b. Date Grantee Notified (mm/dd/yyyy):
9c. Date of Start of Program Year: 07/01/2013

10. check one
- [x] a. Orig. Funding Approval
- [ ] b. Amendment Amendment Number

11. Amount of Community Development Block Grant

	FY (2013)	FY ( )	FY ( )
a. Funds Reserved for this Grantee			
b. Funds now being Approved	1,578,101		
c. Reservation to be Cancelled (11a minus 11b)			

12a. Amount of Loan Guarantee Commitment now being Approved

12b. Name and complete Address of Public Agency

Loan Guarantee Acceptance Provisions for Designated Agencies:
The public agency hereby accepts the Grant Agreement executed by the Department of Housing and Urban Development on the above date with respect to the above grant number(s) as Grantee designated to receive loan guarantee assistance, and agrees to comply with the terms and conditions of the Agreement, applicable regulations, and other requirements of HUD now or hereafter in effect, pertaining to the assistance provided it.

12c. Name of Authorized Official for Designated Public Agency

Title

Signature

HUD Accounting use Only

Batch	TAC	Program	Y	A	Reg	Area	Document No.	Project Number	Category	Amount	Effective Date (mm/dd/yyyy)	F
	153 176											
			Y					Project Number		Amount		
			Y					Project Number		Amount		

Date Entered PAS (mm/dd/yyyy)	Date Entered LOCCS (mm/dd/yyyy)	Batch Number	Transaction Code	Entered By	Verified By

24 CFR 570 form HUD-7082 (4/93)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
SPECIAL TERMS AND CONDITIONS
(Agreements $10,000 or Over)

1. **"Section 3" Compliance -- Provision of Training, Employment and Business Opportunities:**

A. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170. Section 3 requires that, to the greatest extent feasible, opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project.

B. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder, prior to the execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.

C. The Subgrantee will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of its commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.

D. The Subgrantee will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the subcontract upon a finding that the contractor is in violation of regulations issued by the Secretary of Housing and Urban Development 24 CFR Part 135. The Subgrantee will not subcontract with any contractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR part 135 and will not let any subcontract unless the contractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

E. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued hereunder prior to the execution of the contract, shall be a condition of the federal financial assistance provided to the project,

binding upon the applicant or recipient for such assistance, its successor and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its Subgrantees and contractors, its successors and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

2. **Equal Employment Opportunity:** Contracts subject to Executive Order 11246, as amended: Such contracts shall be subject to HUD Equal Employment Opportunity regulations at 24 CFR Part 130 applicable to HUD-assisted construction contracts.

The Subgrantee shall cause or require to be inserted in full in any non-exempt contract and subcontract for construction work, or modification thereof as defined in said regulations, which is paid for in whole or in part with assistance provided under this Agreement, the following equal opportunity clause: "During the performance of this contract, the Subgrantee agrees as follows:

A. The Subgrantee will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Subgrantee will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Subgrantee agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

B. The Subgrantee will, in all solicitations or advertisements for employees placed by or on behalf of the Subgrantee, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

C. The Subgrantee will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representatives of the Subgrantee's commitment under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. The Subgrantee will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, and the rules, regulations and relevant orders of the Secretary of Labor.

E. The Subgrantee will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

F. In the event of the Subgrantee's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations or orders, this contract may be canceled, terminated or suspended in whole or in part, and the Subgrantee may be declared ineligible for further Government contracts or Federally-assisted construction contract procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

G. The Subgrantee will include the portion of the sentence immediately preceding paragraph (A) and the provisions of paragraphs (A) through (G) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each contractor or vendor. The Subgrantee will take such action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event a Subgrantee becomes involved in or is threatened with litigation with a contractor or vendor as a result of such direction by the Department, the Subgrantee may request the United States to enter into such litigation to protect the interest of the United States."

The Subgrantee further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in Federally-assisted construction work; provided, that if the Subgrantee so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The Subgrantee agrees that it will assist and cooperate actively with the Department and the Secretary of Labor in obtaining the compliance of Subgrantees and contractors with the equal opportunity clause and the rules, regulations and relevant orders of the Secretary of Labor; that it will furnish the Department and the Secretary of Labor such compliance; and that it will otherwise assist the Department in the discharge of its primary responsibility for securing compliance.

The Subgrantee further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Subgrantee debarred from, or who has not demonstrated eligibility for Government contracts and Federally-assisted construction contracts pursuant

to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon Subgrantees and contractors by the Department or the Secretary of Labor pursuant to Part II, Subpart D, of the Executive Order. In addition, the Subgrantee agrees that if it fails or refuses to comply with these undertakings, the Department may take any or all of the following actions: cancel, terminate or suspend in whole or in part the grant or loan guarantee; refrain from extending any further assistance to the Subgrantee under the Program with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received from such Subgrantee; and refer the cause to the Department of Justice for appropriate legal proceedings.

3. **Nondiscrimination Under Title VI of the Civil Rights Act of 1964**: This Agreement is subject to the requirements of Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and HUD regulations with respect thereto, including the regulations under 24 CFR Part 1. In the sale, lease or other transfer of land acquired, cleared or improved with assistance provided under this Agreement, the Subgrantee shall cause or require a covenant running with the land to be inserted in the deed or lease for such transfer, prohibiting discrimination upon the basis or race, color, religion, sex or national origin, in the sale, lease or rental, or in the use of occupancy of such land or any improvements erected or to be erected thereon, and providing that the Subgrantee and the United States are beneficiaries of and entitled to enforce such covenant. The Subgrantee, in undertaking its obligation in carrying out the program assisted hereunder, agrees to take such measures as are necessary to enforce such covenant and will not itself so discriminate.

4. **Section 504 and Americans with Disabilities Act**:

   The Subgrantee agrees to comply with any federal regulation issued pursuant to compliance with the Section 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act, which prohibit discrimination against the disabled in any federal assisted program.

5. **Obligations of Subgrantee with Respect to Certain Third-party Relationships**: The Subgrantee shall remain fully obligated under the provisions of the Agreement, notwithstanding its designation of any third party or parties for the undertaking of all or any part of the program with respect to which assistance is being provided under this Agreement to the Subgrantee. Any Subgrantee which is not the Applicant shall comply with all lawful requirements of the Applicant necessary to insure that the program, with respect to which assistance is being provided under this Agreement to the Subgrantee is carried out in accordance with the Applicant's Assurances and certifications, including those with respect to the assumption of environmental responsibilities of the Applicant under Section 104(h) of the Housing and Community Development Act of 1974.

6. **Interest of Certain Federal Officials**: No member of or delegate to the Congress of the United States, and no Resident Commissioner, shall be admitted to any share or part of this Agreement or to any benefit to arise from the same.

7. **Prohibition Against Payments of Bonus or Commission**: The assistance provided under this Agreement shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval or applications for additional assistance, or any other approval or concurrence of HUD required under this Agreement, Title I of the Housing and Community Development Act of 1974, or HUD regulations with respect thereto; provided, however, that reasonable fees or bona fide technical, consultant, managerial or other such services, other than actual solicitation, are not hereby prohibited if otherwise eligible as program costs.

8. **"Section 109"**: This Agreement is subject to the requirements of Section 109 of the Housing and Community Development Act of 1974, 42 U.S.C. 3535(d). No person in the United States shall on the ground of race, color, religion, sex or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds available under this title.

9. **Access to Records and Site of Employment**: This agreement is subject to the requirements of Executive Order 11246, Executive Order 1375, Civil Rights Act of 1964, as amended. Access shall be permitted during normal business hours to the premises for the purpose of conducting on-site compliance reviews and inspecting and copying such books, records, accounts, and other material as may be relevant tot he matter under investigation and pertinent to compliance with the Order, and the rules and regulations promulgated pursuant thereto by the Subgrantee. Information obtained in this manner shall be used only in connection with the administration of the Order, the administration of the Civil Rights At of 1964 (as amended) and in furtherance of the purpose of the Order and that Act.

10. **Legal Remedies for Contract Violation**: If the Subgrantee materially fails to comply with any term of this Agreement, whether stated in a Federal statute or regulation, an assurance, in a State plan or application, a notice of award, or elsewhere, the City may take one or more of the following action, as appropriate in the circumstances:

    1) Temporarily withhold cash payments pending correction of the deficiency by the Subgrantee,
    2) Disallow all or part of the cost of the activity or action not in compliance,
    3) Wholly or partly suspend or terminate the current Agreement, or
    4) Take other remedies that may be legally available.

END.

FEDERAL PROVISIONS

Any project undertaken in excess of Two Thousand Dollars ($2,000.00) for the construction, renovation, rehabilitation, completion or repair of any building or work financed in whole or in part with the assistance of federal funds shall comply with HUD requirements pertaining to contracts and the applicable requirements of the regulations of the United States Department of Labor ("Department of Labor") under 29 CFR Parts 3 and 5, and more fully detailed in this Attachment. The successful Contractor shall cause or require to be inserted in full in any such contracts subject to such regulations, provisions meeting the requirements of 29 CFR 5.5. No award shall be made to any contractor who is at the time ineligible under the provisions of any applicable regulations of the Department of Labor to receive an award of such contract.

FEDERAL REQUIREMENTS

1. Community Development Block Grant (CDBG) Program Required Contract Provisions: (Pages 103-106)

   A. Section 109(a)
   B. Equal Opportunity Clause - 130.15(b)
      Section 202 of Executive Order 11246
   C. Section 3 Clause - 135.20 A - E
   D. Air and Water Acts
   E. Interest of Federal Officials
   F. Interest of Other Officials
   G. Required Provisions Deemed Inserted

2. Supplementary Conditions of the Contract for Construction (Pages 107-117)

3. Current Davis-Bacon Wage Determination (Pages 118-122)

4. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Page 123)

5. Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) (Pages 124-129)

6. Contract Documents that need to be submitted prior to the execution of contract with successful bidder (Pages 130-142)

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
REQUIRED CONTRACT PROVISIONS

A. <u>Section 109 (a)</u>:

"No person in the United States shall on the grounds of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title."

B. <u>Equal Opportunity Clause - 130.15 (b)</u>:

Incorporates Section 202 of Executive Order 11246

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

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of any or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

3. The contractor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract of understanding, a notice to be provided by the Contract Compliance Office advising the said labor union or worker's representatives of the contractor's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit

access to his books, records, and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the contractor's non-compliance with the non-discrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

7. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of the Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Department, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

C. <u>Section 3 Clause - 135.20 A-E</u>:

A. The work to be performed under this contract is project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u. Section 3 requires that to the greatest extent feasible, opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in, or owner in substantial part, by persons residing in the area of the project.

B. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.

C. The contractor will send to each labor organization or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or worker's representative of his/her commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment and training.

D. The contractor will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the subcontract upon finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR 135. The contractor will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

E. Compliance with the provision of Section 3, the regulations set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors, and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its contractors and subcontractors, its successors, and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR 135.

D. <u>Air and Water Acts</u>:

1. The contractor and subcontractors will not utilize any facility in the performance of any nonexempt contract or subcontract listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20.

2. The contractor agrees to comply with all of the requirements of section 114 of the Clean Air Act, as amended (42 U.S.C. 1857 C-8) and section 308 of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1318) relating to the inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said section 114 and section 308, and all regulations and guidelines issued thereunder.

3. As a condition for the award of the contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. The contractor agrees to include or cause to be included in the criteria and requirements in paragraph (1) through (4) of this section in every nonexempt subcontract. The contractor agrees to take such action as the Government may direct as a means of enforcing such provisions.

E. Interest of Certain Federal Officials:

No member of or Delegate to the Congress of the Unites States, and no Resident Commissioner, shall be admitted to any share or part of this agreement or to any benefit to arise from the same.

F. Interest of Members, Officers, or Employees of Grantee (City of Roanoke), Members of Local Governing Body or Other Public Officials:

No member, officer, or employee of the Grantee (City of Roanoke), or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the program during his/her tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed in connection with the program. This provision shall be incorporated in all subcontracts.

G. Required Provisions Deemed Inserted:

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either party, the contract shall forthwith be physically amended to make such insertion or correction.

END.

Supplementary Conditions of the Contract for Construction

Article 1 – Labor Standards
Instructions

Whenever only FHA mortgage insurance is involved, use paragraph (A) and (C) of Article 1 – Labor Standards. Whenever any direct form of assistance (Section 8, Section 202/811 Capital Advance, grants etc.) is involved, use paragraphs (A) and (B) and (C) of Article 1 – Labor Standards.

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted or insured by the United States of America and the following Federal Labor Standards Provisions are included in this Contract or related instrument pursuant to the provisions applicable to such Federal assistance or insurance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and
accessible place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with

the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the
wage determination; and
(2) The classification is utilized in the area by the construction industry; and
(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the
wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs A.1.(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account

assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to

the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

> **(1)** That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a)(3)(i) and that such information is correct and complete;
>
> **(2)** That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissable deductions as set forth in 29 CFR Part 3;
>
> **(3)** That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph A.3.(ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

4. (i) Apprentices and Trainees. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency
recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of
Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman's hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on

the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may be appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration . . . makes, utters or publishes any statement, knowing the same to be false . . . shall be fined not more than $5,000 or imprisoned not more than two years, or both."

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages, liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

3. Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The

prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. The Contractor will be required to execute FHA Form No. 2403-A, Contractor's Prevailing Wage Certificate, as a condition precedent to insurance by the Federal Housing Administration of that certain mortgage loan, or an advance thereof, made or to be made by the mortgagee in connection with the construction of the project.

Article 2 – Equal Employment Opportunity

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause: During the performance of this contract, the Contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

C. The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

E. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

F. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulations or order of the Secretary of Labor, or as otherwise provided by law.

G. The Contractor will include the portion of the sentence immediately preceding paragraph A and the provisions of paragraphs A through G in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. *Provided, however,* that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Secretary of Housing and Urban Development or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

H. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided, That* if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

I. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

J. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance,

guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Article 3 – Equal Opportunity for Businesses and Lower Income Persons Located Within the Project Area

(Applicable to Section 236 projects, where the estimated replacement cost of the project as determined by the Secretary of Housing and Urban Development exceeds $500,000, and to all projects, including Section 236 regardless of estimated replacement cost, receiving rent supplement assistance under Title I, Section 101 of the Housing and Urban Development Act of 1965.)

A. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the unit of local government or the metropolitan area (or nonmetropolitan county) as determined by the Secretary of Housing and Urban Development in which the projects located and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the same metropolitan area (or nonmetropolitan county) as the project.

Article 4 – Health and Safety

A. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

B. The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).

C. The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development of the Secretary of Labor shall direct as a means of enforcing such provisions.

END.

DAVIS-BACON WAGE RATES

(5 PAGES)

General Decision Number: VA160113 01/15/2016 VA113

Superseded General Decision Number: VA20150113

State: Virginia

Construction Type: Building

Counties: Roanoke, Roanoke* and Salem* Counties in Virginia.

*INDEPENDENT CITIES

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/15/2016

* BOIL0045-004 01/01/2016

	Rates	Fringes
BOILERMAKER	$ 31.92	25.21

ELEC0026-033 11/02/2015

	Rates	Fringes
ELECTRICIAN	$ 23.69	10.23+a

a. New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day or days observed as such

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* PLUM0010-018 12/01/2015

	Rates	Fringes
PLUMBER	$ 26.37	16.36

SHEE0100-036 07/01/2014

	Rates	Fringes

SHEET METAL WORKER (Including HVAC Duct Installation)		
Inside Roanoke City and County	$ 21.02	17.19
Outside Roanoke City and County	$ 21.52	17.19

SUVA2010-120 09/20/2010

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR	$ 23.29	10.09
BRICKLAYER	$ 22.74	5.65
CARPENTER (Drywall Hanging Only)	$ 16.03	1.21
CARPENTER (Form Work Only)	$ 11.00	1.10
CARPENTER, Excludes Drywall Hanging, and Form Work	$ 14.18	1.61
CEMENT MASON/CONCRETE FINISHER	$ 14.89	0.00
IRONWORKER, ORNAMENTAL	$ 24.00	10.16
IRONWORKER, STRUCTURAL	$ 15.21	0.89
LABORER: Common or General	$ 11.60	1.58
LABORER: Landscape	$ 10.64	0.00
LABORER: Mason Tender - Brick	$ 10.90	2.35
LABORER: Mason Tender - Cement/Concrete	$ 11.84	3.12
LABORER: Pipelayer	$ 14.44	2.35
OPERATOR: Backhoe	$ 15.70	2.35
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 15.62	2.40
OPERATOR: Bulldozer	$ 21.50	4.80
OPERATOR: Crane, All Types	$ 18.65	7.99
OPERATOR: Excavator	$ 14.58	2.47
OPERATOR: Forklift	$ 18.02	7.28
OPERATOR: Loader	$ 19.82	3.30
OPERATOR: Mechanic	$ 15.38	0.89
OPERATOR: Roller	$ 21.50	4.80

PAINTER: Brush and Roller	$ 17.34	5.59
PAINTER: Spray	$ 21.01	6.91
PIPEFITTER, Includes HVAC Pipe and Unit Installation	$ 21.60	10.24
ROOFER	$ 13.45	1.92
TILE FINISHER	$ 17.32	6.72
TILE SETTER	$ 21.12	7.68
TRUCK DRIVER: Dump Truck	$ 13.38	1.93

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

(EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for Minority Participation for Each Trade	Goals for Female Participation in Each Trade
	10.2%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area.
The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the City of Roanoke, Virginia.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

      (I) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuba, Central or South American or other Spanish Culture or origin, regardless of race);

      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area, either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved

Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraph 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligations to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

   b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of names, address and telephone numbers of each minority and female off-the-street application and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union, or if referred but not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the item and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving

the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeships or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women, and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in others areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to

comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under-utilized).

10. The Contractor shall not use the goals and timetables of affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The Contractor shall not enter into any Subcontract with any person on firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company's EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (i.e., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form, however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the

application of requirements for the hiring of local and other area residents (i.e., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

END.

(EXECUTIVE ORDER 11246)

NOTICE TO BIDDERS

U.S. Department of Housing and Urban Development (H.U.D.) regulations require that the following material must be submitted to the HUD Community Resources Division prior to start of construction:

1. Equal Employment Opportunity Certification (Form 2010).
2. Section 3 Strategy, Affirmative Action Program;
   - Section 3 Strategy
   - Estimated Project Workforce Breakdown, Table A.
   - Proposed Contracts Breakdown, Table B.
   - Actual Project Workforce Breakdown, Table C.
3. Contractor's Certification Concerning Labor Standards and Prevailing Wage Requirements (Form GC-A).
4. Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements (Form GC-B).

END.

FHA FORM NO. 2010
Rev. 7/89
(Supersedes Prior Revisions)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL HOUSING ADMINISTRATION
EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The undersigned understands and agrees that it is the "applicant" within the meaning of § 200.410 of the FHA Regulations and agrees that there shall be no discrimination against any employee who is employed in carrying out work receiving FHA assistance, or against any applicant for such employment, because of race, color, religion, sex, or national origin, including but not limited to employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selecting for training, including apprenticeship.

The applicant further agrees to the following:

(1) It will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained pursuant to an FHA program, the equal opportunity clause required by § 200.420 of the Regulations;

(2) It will be bound by said equal opportunity clause with respect to its own employment practices when it participates in any FHA assisted construction work: Provided, That if the applicant so participating is a state or local government, the said equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract;

(3) It will assist and cooperate actively with the FHA and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations and relevant orders of the Secretary of Labor;

(4) It will furnish the FHA and the Secretary of Labor such information as they may require for the supervision of such compliance, and will otherwise assist the FHA in the discharge of FHA's primary responsibility for securing compliance;

(5) It will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, government contracts and federally assisted construction contracts pursuant to the Executive Order;

(6) It will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractor by the FHA or the Secretary of Labor pursuant to Part II, subpart D of the Executive Order; and

(7) In the event that it fails or refuses to comply with its undertaking, the FHA may cancel, terminate or suspend in whole or in part any contractual arrangements the FHA may have with the applicant; may refrain from extending any further assistance to the applicant under any FHA programs until satisfactory assurance of future compliance has been received from such applicant; or may refer the case to the Department of Justice for appropriate legal proceedings.

Name of Applicant: _____
Address: _____
_____

Signed by: _____
Title: _____
Date: _____

END.

SECTION 3 STRATEGY
AFFIRMATIVE ACTION PROGRAM
IMPLEMENTING
SECTION 3 OF THE HOUSING AND URBAN DEVELOPMENT ACT
OF 1968, AS AMENDED

Employment Opportunities for Businesses
and Lower Income Persons
in Connection With
HUD-Assisted Projects

CONTRACTOR'S NAME	PROJECT NAME
CONTRACTOR FEDERAL ID NUMBER	PROJECT NUMBER
ADDRESS - ZIP CODE & AREA CODE - PHONE NUMBER	PROJECT LOCATION (City, County, State)
EEO OFFICER	CONSTRUCTION STARTING AND COMPLETION DATE

SECTION 3 OF THE HOUSING AND URBAN DEVELOPMENT ACT OF 1968, AS AMENDED

Housing and Urban Development regulations implementing Section 3 of the Housing and Urban Development Act of 1968, as Amended, require that, to the greatest extent feasible, opportunities for training and employment be given to lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in or owned in substantial part by persons residing in the area of the project.

As evidence of Compliance, the undersigned certifies that he/she will:

(1) Take affirmative steps to hire and train lower income residents of the project area, and,

(2) Solicit the participation of businesses located in or owned substantially by persons residing in the area of the project,

(3) Submit the attached Affirmative Action Program implementing Section 3 of the Housing and Urban Development Act of 1968, as Amended.

Signed _____ Date _____

Title _____

Company _____

I. Projected Workforce Needs for this Project

On Table A, list all projected workforce needs for all phases of this project by occupation, trade, skill level and number of positions.

II. Determination of Project Area Boundaries

A. Address of Proposed Project:

_____

_____

_____

B. Below, indicate whether this project is located in a Renewal Area.

_____

(Specify) The Project area for purposes of this Section 3 Affirmative Action Plan is Roanoke, Virginia.

III. Utilization of Lower Income Area Residents as Trainees

A. For the building construction, occupations, the number of trainees or apprentices for each occupation shall be that number which can reasonably be utilized in each occupation on each phase of this project and in no event shall that number be less than the number of trainees or apprentices determined pursuant to regulations issued by the Secretary of Labor for each building construction occupation.

B. For non-construction occupations or for any building construction occupations for which ratios are not determined pursuant to regulations of the Secretary of Labor, the number of trainees for each occupation shall be that number which can reasonably be utilized in each occupation on each phase of this project.

C. A determination of the maximum reasonable number of trainees to be used in each trade or occupation is given in Table A, Column 2, for each trade. Also given in Column 2 is the estimated project workforce at peak employment for each occupation or trade category to be used on this project.

D. The contractor agrees to fill all vacant training position with lower income project area residents except for those training positions which remain unfilled after a good faith effort has been made.

IV. Utilization of Lower Income Residents as Employees

A. The number of estimated positions in the various occupational categories which are currently occupied by regular, permanent employees is given in Table A, Column 3.

B. The number of position not currently occupied by regular, permanent employees is given in Table A, Column 4.

C. This company's goal for the number of positions on this project to be filled by lower income residents of the Section 3 project area is stated in Table A, Column 5. (Each contractor is expected to make a good faith effort to fill all the positions identified in Table A, Column 4, with Lower Income Project Area Residents).

D. This company agrees to submit Table C. Actual Employment Workforce Breakdown, with the final request for payments. This information regarding employee characteristics will be forwarded to HUD.

V. Utilization of Business Located in or Owned in Substantial Part by Persons Residing in the Project Area

A. In Table B, Column 1, list all contracts to be awarded, described by type of business or profession, to all businesses in connection with this Section 3 covered project. In Column 2 (Table B), estimate the number of contracts of each type to be let. In Column 3, project the approximate total dollar amount for all contracts of each type.

B. Based on the information given in Columns 1, 2, and 3 (Table B), and the availability of eligible business concerns within the project area doing business in professions or occupations identified, set forth your goals for the number of contracts to be awarded to eligible project area businesses in Column 4, and for the approximate dollar amount to be awarded to project area businesses in Column 5. Eligible project area businesses will be utilized to the greatest extent feasible.

VI. Specific Affirmative Action Steps

_____ (Name of Contractor) agrees to implement the following specific affirmative action steps directed at increasing the utilization of lower income residents and project area businesses.

A. To attempt to recruit from the appropriate areas the necessary number of lower income residents through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, or the U.S. Employment Service.

B. To prominently display a Section 3 Notice at the project site.

END.

TABLE A

ESTIMATED PROJECT WORKFORCE BREAKDOWN

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
JOB CATEGORY	TOTAL EST. POSITIONS	NO. POSITIONS CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS NOT CURRENTLY OCCUPIED	NO. POSITIONS TO BE FILLED WITH LIPAR*
Officers/Supervisors				
Professionals				
Technicians				
Housing Sales/Rental/Mgmt.				
Office/Clerical				
Service Workers				
Others				
Trade:				
Journeymen				
Apprentices				
Maximum No. Trainees				
Others				
Trade:				
Journeymen				
Apprentices				
Maximum No. Trainees				
Others				
TOTAL				

* Lower Income Project Area Residents Individuals residing with the Section 3 determined project area boundaries whose family income does not exceed 90% of the medium income in the Standard Metropolitan Statistical Area (or the County if not within an SMSA) in which the Section 3 covered project is located.

_____
Company

_____
Project Name

_____
Project Number

_____
EEO Officer (Signature)

_____
Date

TABLE B

PROPOSED CONTRACTS BREAKDOWN

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
Type of Contracts (Business or Profession)	Total No. of Contracts	Total Approximate Dollar Amount	Estimated No. of Contracts to Project Area Businesses	Estimated Dollar Amount For Project Area Businesses

_____
Company

_____
Project Name

_____
Project Number

_____
EEO Officer (Signature)

_____
Date

TABLE C

ACTUAL PROJECT WORKFORCE BREAKDOWN

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
JOB CATEGORY	TOTAL NO. POSITIONS USED	NO. POSITIONS CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS NOT CURRENTLY OCCUPIED	NO. POSITIONS FILLED WITH LIPAR*
Officers/Supervisors				
Professionals				
Technicians				
Housing Sales/Rental/Mgmt.				
Office/Clerical				
Service Workers				
Others				
Trade:				
Journeymen				
Apprentices				
Maximum No. Trainees				
Others				
Trade:				
Journeymen				
Apprentices				
Maximum No. Trainees				
Others				
TOTAL				

* Lower Income Project Area Residents. Individuals residing with the Section 3 determined project area boundaries whose family income does not exceed 90% of the medium income in the Standard Metropolitan Statistical Area (or the County if not within an SMSA) in which the Section 3 covered project is located.

_____
Company

_____
Project Name

_____
Project Number

_____
EEO Officer (Signature)

_____
Date

COMMUNITY DEVELOPMENT BLOCK GRANT
CITY OF ROANOKE, VIRGINIA
CONTRACTOR'S CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS

TO (Appropriate Recipient):	DATE
c/o HUD Community Resources Division Room 305 North, Municipal Building 215 Church Avenue, SW Roanoke, VA 24011	PROJECT NUMBER (IF ANY)
	PROJECT NAME

1. The undersigned, having executed a contract with the **City of Roanoke, Virginia**, for the construction of the above-identified project, acknowledges that:

   A. The Labor Standards Provisions are included in the aforesaid contract:

   B. Correction of any infractions of the aforesaid conditions, including infractions by any of his/her subcontractors and any lower tier subcontractors, is his\her responsibility;

2. He certifies that:

   A. Neither he nor any firm, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 U.S.C. 276 a-2(a)).

   B. No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. He agrees to obtain and forward to the aforementioned recipient within ten day after the execution of any subcontract, including those executed by his subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. He certifies that:

   A. The legal name and the business address of the undersigned are:

   _____

   _____

   _____

   Employer's Identification No. _____

_____
(Contractor)

Date: _____

By: _____

COMMUNITY DEVELOPMENT BLOCK GRANT
CITY OF ROANOKE, VIRGINIA
SUBCONTRACTOR'S CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS

TO (Appropriate Recipient):	DATE
c/o HUD Community Resources Division Room 305 North, Municipal Building 215 Church Avenue, SW Roanoke, VA 24011	PROJECT NUMBER (IF ANY)
	PROJECT NAME

1. The undersigned, having executed a contract with _____
_____(Contractor or Subcontractor)
for
_____
(Nature of Work) in the amount of $_____ in the construction of the above-identified project, certifies that:

   A. The Labor Standards Provisions of the Contract for Construction are included in the aforesaid contract;

   B. Neither he nor any firm, corporation, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 U.S.C. 276 a-2(a)).

   C. No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

2. He agrees to obtain and forward to the contractor, for transmittal to the recipient within ten days after the execution of any lower subcontract, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements, executed by the subcontractor, in duplicate.

   A. The workmen will report for duty on or about _____ .
   Date

3. He certifies that:

   A. The legal name and the business address of the undersigned are:
   _____
   _____
   _____
   Employer's Identification No. _____

_____
(Subcontractor)
Date: _____

By: _____

TECHNICAL SPECIFICATIONS

SECTION 03930
CONCRETE REHABILITATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Removal of deteriorated concrete and reinforcement and subsequent replacement and patching.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include material descriptions, chemical composition, physical properties, test data, and mixing, preparation, and application instructions.

B. Qualification Data: For installers manufacturers.

1. For products required to be installed by workers approved by product manufacturers, include letters of acceptance by product manufacturers certifying that installers are approved to apply their products.

C. Material Certificates: For each type of product indicated, signed by manufacturers.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for bonding agents and patching mortars.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Installer that employs workers trained and approved by manufacturer to apply concrete patching and rebuilding materials.

B. Manufacturer Qualifications: Manufacturer that employs factory-trained representatives who are available for consultation and Project-site inspection.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original and unopened containers, labeled with type and name of products and manufacturers.

B. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.

C. Store cementitious materials off the ground, under cover, and in a dry location.

D. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

1.6 PROJECT CONDITIONS

A. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and wind breaks, and use cooled materials as required. Do not apply to substrates with temperatures of 90 deg F and above.

PART 2 - PRODUCTS

2.1 BONDING AGENTS

A. Latex Bonding Agent: ASTM C 1059, Type I or II.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

a. Latex Bonding Agent, Type I:

1) Euclid Chemical Company (The); Euco Weld.
2) Kaufman Products, Inc.; Sureweld.
3) Meadows, W. R. Inc.; Intralok.
4) Sika Corporation; Sikalatex.

b. Latex Bonding Agent, Type II:
1) Euclid Chemical Company (The); Flex-Con.
2) Kaufman Products, Inc.; Surebond.
3) Meadows, W. R. Inc.; Sealtight Acry-Lok.

2.2 PATCHING MORTAR

A. Patching Mortar, General:

1. Unless otherwise indicated, use any of the products specified in this Article.
2. Overhead Patching Mortar: For overhead repairs, use patching mortar recommended by manufacturer for overhead use and as specified in this Article.

3. Coarse Aggregate for Adding to Patching Mortar: Washed aggregate complying with ASTM C 33, Size No. 8, Class 5S. Add only as permitted by patching mortar manufacturer.

B. Polymer-Modified, Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928, that contains a latex additive as either a dry powder or a separate liquid that is added during mixing.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Euclid Chemical Company (The); Concrete Coat Thin Coat or Verticoat.
   b. Kaufman Products, Inc.; Patchwell Patchwell Kit Patchwell Kit D or Patchwell Kit HB.
   c. Meadows, W. R., Inc.; Sealtight Meadow-Patch T1 or Sealtight Meadow-Crete FNP.
   d. Sika Corporation; SikaTop 121 Plus SikaTop 122 Plus SikaTop 123 Plus or SikaTop 126 Plus.
   e. Tamms Industries, Inc.; Duraltop Fast Set or Speed Crete PM.

2.3 MIXES

A. Mix products, in clean containers, according to manufacturer's written instructions.

1. Add clean silica sand and coarse aggregates to products only as recommended by manufacturer.
2. Do not add water, thinners, or additives unless recommended by manufacturer.
3. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
4. Do not mix more materials than can be used within recommended open time. Discard materials that have begun to set.

B. Dry-Pack Mortar: Mix with just enough liquid to form damp cohesive mixture that can be squeezed by hand into a ball but is not plastic.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Notify Architect seven days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.

B. Locate areas of deteriorated or delaminated concrete using hammer or chain drag sounding and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries. At columns and walls make boundaries level and plumb, unless otherwise indicated.

C. Locate at least three reinforcing bars using a pachometer, and drill test holes to determine depth of cover. Calibrate pachometer, using depth of cover measurements, and verify depth of cover in removal areas using pachometer.

3.2 PREPARATION

A. Protect people, motor vehicles, equipment, surrounding construction, Project site, plants, and surrounding buildings from injury resulting from concrete rehabilitation work.
   1. Protect adjacent equipment and surfaces by covering them with heavy polyethylene film and waterproof masking tape. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
   2. Neutralize and collect alkaline and acid wastes according to requirements of authorities having jurisdiction, and dispose of by legal means off Owner's property.
   3. Dispose of runoff from wet operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
   4. Collect runoff from wet operations and dispose of by legal means off Owner's property.

B. Shoring: Install temporary supports before beginning concrete removal.

C. Concrete Removal:

   1. Saw-cut perimeter of areas indicated for removal to a depth of at 1/2 inch. Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcement.
   2. Remove deteriorated and delaminated concrete by breaking up and dislodging from reinforcement.
   3. Remove additional concrete, if necessary, to provide a depth of removal of at least 1/2 inch over entire removal area.
   4. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar and to provide at least a 3/4-inch clearance around bar.
   5. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound and disbonded concrete is completely removed.
   6. Provide fractured aggregate surfaces with a profile of at least 1/8 inch that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level, unless otherwise directed.
   7. Thoroughly clean removal areas of loose concrete, dust, and debris.

D. Reinforcing Bar Preparation: Remove loose and flaking rust from reinforcing bars by mechanical means until only tightly bonded light rust remains.

   1. Where section loss of reinforcing bar is more than 25 percent, or 20 percent in 2 or more adjacent bars, cut bars and remove and replace as directed by Architect. Remove additional concrete as necessary to provide at least 3/4-inch clearance

at existing and replacement bars. Splice replacement bars to existing bars according to ACI 318, by lapping, welding, or using mechanical couplings.

3.3 APPLICATION

A. General: Comply with manufacturer's written instructions and recommendations for application of products, including surface preparation.

B. Latex Bonding Agent, Type II: Mix with portland cement and scrub into concrete surface according to manufacturer's written instructions. Apply patching mortar or concrete while bonding agent is still wet. If bonding agent dries, recoat before placing patching mortar or concrete.

C. Latex Bonding Agent, Type I: Apply to concrete by brush roller or spray. Allow to dry before placing patching mortar or concrete.

D. Patching Mortar: Unless otherwise recommended by manufacturer, apply as follows:

1. Wet substrate thoroughly and then remove standing water. Scrub a slurry of neat patching mortar into substrate, filling pores and voids.
2. Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch. At fully exposed reinforcing bars, force patching mortar to fill space behind bars by compacting with trowel from sides of bars.
3. For vertical patching, place material in lifts as recommended by the manufacturer. Do not feather edge.
4. For overhead patching, place material in lifts as recommended by the manufacturer. Do not feather edge.
5. After each lift is placed, consolidate material and screed surface.
6. Where multiple lifts are used, score surface of lifts to provide a rough surface for application of subsequent lifts. Allow each lift to reach final set before placing subsequent lifts.
7. Allow surfaces of lifts that are to remain exposed to become firm and then finish to match adjacent existing surfaces.
8. Wet-cure cementitious patching materials, including polymer-modified, cementitious patching materials, for not less than seven days by water-fog spray or water-saturated absorptive cover.

E. Dry-Pack Mortar: Use for deep cavities. Unless otherwise recommended by manufacturer, apply as follows:

1. Provide forms where necessary to confine patch to required shape.
2. Wet substrate and forms thoroughly and then remove standing water.
3. Place dry-pack mortar into cavity by hand, and compact into place with a hardwood drive stick and mallet or hammer. Do not place more material at a time than can be properly compacted. Continue placing and compacting until patch is approximately level with surrounding surface.

4. After cavity is filled and patch is compacted, trowel surface to match profile and finish of surrounding concrete. A thin coat of patching mortar may be troweled into the surface of patch to help obtain required finish.
5. Wet-cure patch for not less than seven days by water-fog spray or water-saturated absorptive cover.

END OF SECTION

SECTION 04211
BRICK MASONRY

PART 4 - GENERAL

4.1 RELATED DOCUMENTS

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

4.2 SUMMARY

A. Section Includes:
1. Face brick.
2. Mortar and grout.
3. Ties and anchors.
4. Embedded flashing.
5. Miscellaneous masonry accessories.

4.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Samples for Initial Selection:
1. Face brick**,** in the form of straps of five or more bricks.
2. Colored mortar.

D. Material Certificates: For each type and size of the following:

1. Masonry units.

a. Include material test reports substantiating compliance with requirements.
b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
c. For exposed brick, include test report for efflorescence according to ASTM C 67.

2. Cementitious materials. Include brand, type, and name of manufacturer.

3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
4. Grout mixes. Include description of type and proportions of ingredients.
5. Anchors, ties, and metal accessories.

E. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

4.4 QUALITY ASSURANCE

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

C. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on Drawings.
2. Build mockups for each type of exposed unit masonry construction in sizes approximately 48 inches long by 36 inches high by full thickness, including accessories.

   a. Include a sealant-filled joint at least 16 inches long in mockup.

3. Where masonry is to match existing, erect mockups adjacent and parallel to existing surface.
4. Clean one-half of exposed faces of mockups with masonry cleaner as indicated.
5. Protect accepted mockups from the elements with weather-resistant membrane.

6. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

4.5 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

4.6 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

C. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 5 - PRODUCTS

5.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

5.2 CONCRETE BRICK

5.3 BRICK

A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units.

1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

B. Face Brick: Facing brick complying with ASTM C 216 or hollow brick complying with ASTM C 652, Class H40V (void areas between 25 and 40 percent of gross cross-sectional area).

1. Products: Subject to compliance with requirements, match existing.

5.4 MORTAR MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C 91.

E. Mortar Cement: ASTM C 1329.

F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.

G. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
3. White-Mortar Aggregates: Natural white sand or crushed white stone.

4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

5.5 REINFORCEMENT

A. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.

B. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.187-inch- diameter, stainless-steel continuous wire.

5.6 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
   1. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
   2. Stainless-Steel Sheet: ASTM A 666, Type 304.
   3. Stainless-Steel Bars: ASTM A 276 or ASTM A 666, Type 304.

B. Corrugated Metal Ties: Metal strips not less than 7/8 inch wide with corrugations having a wavelength of 0.3 to 0.5 inch and an amplitude of 0.06 to 0.10 inch made from 0.031- inch- thick, stainless-steel sheet.

C. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.

D. Adjustable Masonry-Veneer Anchors:

   1. General: Provide anchors that allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal studs, and as follows:

      a. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in both tension and compression without deforming or developing play in excess of 0.05 inch.

   2. Contractor's Option: Unless otherwise indicated, provide any of the following types of anchors:
   3. Screw-Attached, Masonry-Veneer Anchors: Units consisting of a wire tie and a metal anchor section.

      a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

         1) Dayton Superior Corporation, Dur-O-Wal Division.
         2) Heckmann Building Products Inc.
         3) Hohmann & Barnard, Inc.
         4) Wire-Bond.

b. Anchor Section: Rib-stiffened, sheet metal plate with screw holes top and bottom, 2-3/4 inches wide by 3 inches high; with projecting tabs having slotted holes for inserting vertical legs of wire tie specially formed to fit anchor section.
c. Fabricate sheet metal anchor sections and other sheet metal parts from 0.078-inch- thick, stainless-steel sheet.
d. Wire Ties: Triangular-, rectangular-, or T-shaped wire ties fabricated from 0.187-inch- diameter, stainless-steel wire.

5.7 MISCELLANEOUS ANCHORS

A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron wedge-type inserts.

B. Dovetail Slots in Concrete: Furnish dovetail slots with filler strips, of slot size indicated, fabricated from 0.034-inch, galvanized steel sheet.

5.8 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing complying with Division 07 Section "Sheet Metal Flashing and Trim" and as follows:

1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.
2. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 feet. Provide splice plates at joints of formed, smooth metal flashing.
3. Fabricate through-wall metal flashing embedded in masonry from stainless steel, with ribs at 3-inch intervals along length of flashing to provide an integral mortar bond.

   a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

      1) Cheney Flashing Company; Cheney Flashing (Dovetail).
      2) Keystone Flashing Company, Inc.; Keystone 3-Way Interlocking Thruwall Flashing.
      3) Sandell Manufacturing Co., Inc.; Mechanically Keyed Flashing.
4. Fabricate through-wall flashing with drip edge unless otherwise indicated. Fabricate by extending flashing 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.

B. Solder and Sealants for Sheet Metal Flashings:

1. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
2. Elastomeric Sealant: ASTM C 920, chemically curing silicone sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

C. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

5.9 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from urethane.

B. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

C. Weep/Vent Products: Use the following unless otherwise indicated:

1. Mesh Weep/Vent: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe; in color selected from manufacturer's standard.

5.10 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Diedrich Technologies, Inc.
b. EaCo Chem, Inc.
c. ProSoCo, Inc.

5.11 MORTAR MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar.
2. Use mortar cement mortar unless otherwise indicated.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide Type N unless another type is indicated.

PART 6 - EXECUTION

6.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

6.2 INSTALLATION, GENERAL

A. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

C. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

1. Mix units from several pallets or cubes as they are placed.

D. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

E. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

6.3 TOLERANCES

A. Lines and Levels:

1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.

4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

B. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch; do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
2. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
3. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

6.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, match existing; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

E. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

6.5 MORTAR BEDDING AND JOINTING

A. Lay hollow brick as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With entire units, including areas under cells, fully bedded in mortar at starting course on footings.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

6.6 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:

1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

6.7 ANCHORING MASONRY VENEERS

A. Anchor masonry veneers to masonry backup with masonry-veneer anchors to comply with the following requirements:

1. Fasten screw-attached anchors to masonry backup with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
2. Embed tie sections in masonry joints. Provide not less than 2 inches of air space between back of masonry veneer and face of sheathing.
3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
4. Space anchors not more than 18 inches o.c. vertically and 24 inches o.c. horizontally, with not less than 1 anchor for each 2 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 8 inches, around perimeter.

6.8 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

B. Install flashing as follows unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
2. At masonry-veneer walls, extend flashing through veneer, across air space behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under building paper or building wrap, lapping at least 4 inches.
3. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
4. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
5. Install metal drip edges with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
6. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal drip edge.
7. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal flashing termination.
8. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.

C. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:

1. Use specified weep/vent products to form weep holes.
2. Use wicking material to form weep holes above flashing under brick sills. Turn wicking down at lip of sill to be as inconspicuous as possible.
3. Space weep holes 24 inches o.c. unless otherwise indicated.

D. Place pea gravel in cavities as soon as practical to a height equal to height of first course above top of flashing, but not less than 2 inches, to maintain drainage.

E. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in "Miscellaneous Masonry Accessories" Article.

F. Install vents in head joints in exterior wythes at spacing indicated. Use specified weep/vent products to form vents.

1. Close cavities off vertically and horizontally with blocking in manner indicated. Install through-wall flashing and weep holes above horizontal blocking.

6.9 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.

B. Inspections: Level 1 special inspections according to the "International Building Code."

1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.

C. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.

6.10 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean brick by bucket-and-brush hand-cleaning method described in "BIA Technical Notes 20."
6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
8. Clean stone trim to comply with stone supplier's written instructions.
9. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

6.11 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

END OF SECTION

SECTION 04230
GLASS UNIT MASONRY

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

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

7.2 SUMMARY

A. This Section includes glass block set in glass-block grid systems.

B. This section applies to:

1. 631 Campbell Ave SW
2. 1201 Patterson Avenue SW

7.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include glass block, glass-block grid systems, and accessories.

B. Shop Drawings: Show fabrication and installation details for glass-block grid systems.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Samples for Initial Selection: Manufacturer's actual glass-block units and glass-block grid material.

7.4 QUALITY ASSURANCE

A. Source Limitations for Glass Block: Obtain each type and pattern of glass block through one source from a single manufacturer.

B. Source Limitations for Accessory Materials: Obtain each accessory component through one source from a single manufacturer.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical exterior wall area with glass unit masonry assembly as shown on Drawings.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

7.5 DELIVERY, STORAGE, AND HANDLING

A. Store glass block in unopened cartons on elevated platforms, under cover, and in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

B. Store glass-block grid materials in unopened cartons in an enclosed, dry location.

C. Store accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

7.6 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation of glass unit masonry assemblies only when ambient and material temperatures are 40 deg F or higher.

1. Maintain temperature in installation areas at 40 deg F or above for 48 hours after installing.

PART 8 - PRODUCTS

8.1 GLASS BLOCK

A. Hollow Glass Block: Hollow units made from transparent glass, with manufacturer's standard edge coating.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Pittsburgh Corning Corporation.

2. Glass Color: Colorless.
3. Pattern: Wavy, light-diffusive design on inner faces, and smooth outer faces.
4. Edge-Coating Color: White.

a. Provide one color throughout for each pattern indicated.
b. Provide multiple colors as indicated for each size and pattern.

5. Unit Sizes: Manufacturer's standard sizes corresponding to nominal sizes to match existing units.

8.2 GLASS UNIT MASONRY ACCESSORIES

A. Fasteners, General: Unless otherwise indicated, provide Type 304 or Type 316 stainless-steel fasteners at exterior walls and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, at interior walls. Select fasteners for type, grade, and class required.

PART 9 - EXECUTION

9.1 EXAMINATION

A. Examine sills, jambs, and heads surrounding glass unit masonry assemblies for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

9.2 GLASS-BLOCK GRID SYSTEM INSTALLATION

A. General: Install glass-block grid systems according to manufacturer's written instructions.

9.3 CLEANING

A. On surfaces adjacent to glass unit masonry assemblies, remove mortar, sealants, and other residue resulting from glass-block installation, in a manner approved by manufacturers of materials involved.

B. Remove excess sealants with commercial solvents of type recommended by sealant manufacturer. Exercise care not to damage sealant in joints.

C. Perform final cleaning of glass unit masonry assemblies when surface is not exposed to direct sunlight. Start at top of panel using generous amounts of clean water. Remove water with clean, dry, soft cloths; change cloths frequently to eliminate dried mortar particles and aggregate.

END OF SECTION

SECTION 04901
CLAY MASONRY RESTORATION AND CLEANING

PART 10 - GENERAL

10.1 RELATED DOCUMENTS

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

10.2 SUMMARY

A. Section includes maintenance of unit masonry consisting of brick clay masonry restoration and cleaning as follows:

1. Unused anchor removal.
2. Repointing joints.
3. Preliminary cleaning, including removing plant growth.
4. Cleaning exposed unit masonry surfaces.

B. This section applies to:

1. 312 13th Street SW
2. 1201 Patterson Avenue SW

C. Related Sections:

1. Division 7 Section "Sheet Metal Flashing and Trim" for metal flashing installed in or on restored clay masonry.

10.3 UNIT PRICES

A. Work of this Section is affected by unit prices specified in Division 1 Section "Unit Prices."

1. Unit prices apply to authorized work covered by estimated quantities.
2. Unit prices apply to additions to and deletions from Work as authorized by Change Orders.

10.4 DEFINITIONS

A. Very Low-Pressure Spray: Under 100 psi.

B. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.

C. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.

D. High-Pressure Spray: 800 to 1200 psi; 4 to 6 gpm.

E. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of masonry units to freezing and thawing.

10.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include recommendations for application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings: For the following:
   1. Provisions for expansion joints or other sealant joints.
   2. Provisions for flashing, lighting fixtures, conduits, and weep holes as required.
   3. Replacement and repair anchors. Include details of anchors within individual masonry units, with locations of anchors and dimensions of holes and recesses in units required for anchors.

C. Samples for Initial Selection: For the following:

   1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by 1/4 inch wide, set in aluminum or plastic channels.

      a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching the cleaned masonry when cured and dry.
      b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

   2. Patching Compound: Submit sets of patching compound Samples in the form of plugs (patches in drilled holes) in sample units of masonry representative of the range of masonry colors on the building.

      a. Have each set contain a close color range of at least three Samples of different mixes of patching compound that matches the variations in existing masonry when cured and dry.

   3. Sealant Materials: See Division 7 Section "Joint Sealants."
   4. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For the following:

   1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches long by 1/4 inch wide, set in aluminum or plastic channels.

      a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

2. Each type of masonry patching compound in the form of briquettes, at least 3 inches long by 1-1/2 inches wide. Document each Sample with manufacturer and stock number or other information necessary to order additional material.
3. Sealant Materials: See Division 7 Section "Joint Sealants."
4. Accessories: Each type of anchor, accessory, and miscellaneous support.

E. Qualification Data: For restoration specialists and chemical-cleaner manufacturer.

F. Quality-Control Program.

G. Restoration Program.

H. Cleaning Program.

10.6 QUALITY ASSURANCE

A. Restoration Specialist Qualifications: Engage an experienced masonry restoration and cleaning firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience installing standard unit masonry is not sufficient experience for masonry restoration work.

1. At Contractor's option, work may be divided between two specialist firms: one for cleaning work and one for repair work.
2. Field Supervision: Restoration specialist firms shall maintain experienced full-time supervisors on Project site during times that clay masonry restoration and cleaning work is in progress. Supervisors shall not be changed during Project except for causes beyond the control of restoration specialist firm.
3. Restoration Worker Qualifications: Persons who are experienced and specialize in restoration work of types they will be performing.

B. Chemical-Cleaner Manufacturer Qualifications: A firm regularly engaged in producing masonry cleaners that have been used for similar applications with successful results, and with factory-trained representatives who are available for consultation and Project-site inspection and assistance at no additional cost.

C. Source Limitations: Obtain each type of material for masonry restoration (face brick, cement, sand, etc.) from one source with resources to provide materials of consistent quality in appearance and physical properties.

D. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage due to worker fatigue.

E. Restoration Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of restoration work including protection of surrounding materials and Project site.

1. Include methods for keeping pointing mortar damp during curing period.

2. If materials and methods other than those indicated are proposed for any phase of restoration work, add to the Quality-Control Program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and worker's ability to use such materials and methods properly.

F. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used, protection of surrounding materials, and control of runoff during operations.

1. If materials and methods other than those indicated are proposed for any phase of restoration work, add to the Quality-Control Program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and worker's ability to use such materials and methods properly.

G. Cleaning and Repair Appearance Standard: Cleaned and repaired surfaces are to have a uniform appearance as viewed from 20 feet away by Architect. Perform additional paint and stain removal, general cleaning, and spot cleaning of small areas that are noticeably different, so that surface blends smoothly into surrounding areas.

H. Mockups: Prepare mockups of restoration and cleaning to demonstrate aesthetic effects and set quality standards for materials and execution and for fabrication and installation.

1. Masonry Repair: Prepare sample areas for each type of masonry material indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than 2 adjacent whole units or approximately 48 inches in least dimension. Erect sample areas in existing walls unless otherwise indicated, to demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:

   a. Reanchoring Veneers: Install three masonry repair anchors in mockup wall assembly of each anchor type required.
   b. Patching: Three small holes as directed for each type of masonry material indicated to be patched, so as to leave no evidence of repair.

2. Repointing: Rake out joints in 2 separate areas, each approximately 36 inches high by 48 inches wide for each type of repointing required and repoint one of the areas.
3. Cleaning: Clean an area approximately 25 sq. ft. for each type of masonry and surface condition.

   a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not use cleaners and methods known to have deleterious effect.
   b. Allow a waiting period of not less than two days after completion of sample cleaning to permit a study of sample panels for negative reactions.

4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
5. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

10.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

D. Store lime putty covered with water in sealed containers.

E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

10.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit masonry restoration and cleaning work to be performed according to manufacturers' written instructions and specified requirements.

B. Repoint mortar joints only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least 7 days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for masonry repair and mortar-joint pointing unless otherwise indicated:

1. When air temperature is below 40 deg F, heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for 7 days after repair and pointing.

D. Hot-Weather Requirements: Protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

F. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least 7 days after completion of cleaning.

10.9 COORDINATION

A. Coordinate masonry restoration and cleaning with public circulation patterns at Project site. Some work is near open sidewalks and active streets. Public circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Coordinate sidewalk closures with the **City of Roanoke. See the Instructions to Bidders.** Plan and execute the Work accordingly.

10.10 SEQUENCING AND SCHEDULING

A. Order replacement materials at earliest possible date to avoid delaying completion of the Work.

B. Order sand and gray portland cement for pointing mortar immediately after approval. Take delivery of sufficient quantity to complete Project.

C. Perform masonry restoration work in the following sequence:

1. Remove plant growth.
2. Inspect for open mortar joints and repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
3. Remove paint.
4. Clean masonry surfaces.
5. Where water repellents, specified in Division 7, are to be used on or near masonry work, delay application of these chemicals until after pointing.
6. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
7. Rake out mortar from joints to be repointed.
8. Point mortar and sealant joints.
9. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
10. Inspect for open mortar joints and repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
11. Remove paint.
12. Clean masonry surfaces.

D. Patch holes in masonry units to comply with "Masonry Unit Patching" Article. Patch holes in mortar joints to comply with "Repointing Masonry" Article.

PART 11 - PRODUCTS

11.1 MASONRY MATERIALS

A. Face Brick: Provide face brick, including specially molded, ground, cut, or sawed shapes where required to complete masonry restoration work.

1. Provide units with colors, color variation within units, surface texture, size, and shape to match existing brickwork and with physical properties as listed below:

a. Physical Properties per ASTM C 67:

b. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.

2. Provide units with colors, color variation within units, surface texture, and physical properties to match Architect's sample. Match existing units in size and shape.

a. Physical Properties per ASTM C 67

3. Tolerances as Fabricated: Comply with tolerance requirements in ASTM C 216.

B. Building Brick: Provide building brick complying with ASTM C 62, of same vertical dimension as face brick, for masonry work concealed from view.

1. Grade SW, MW, or NW for concealed backup.

11.2 MORTAR MATERIALS

A. Portland Cement: ASTM C 150, Type I or Type II, white or gray or both where required for color matching of exposed mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S.

C. Factory-Prepared Lime Putty: ASTM C 1489.

D. Quicklime: ASTM C 5, pulverized lime.

E. Mortar Sand: ASTM C 144 unless otherwise indicated.

1. Color: Provide natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
2. For pointing mortar, provide sand with rounded edges.
3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.

F. Mortar Pigments: Natural and synthetic iron oxides, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.

G. Water: Potable.

11.3 MANUFACTURED REPAIR MATERIALS

A. Masonry Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching masonry.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

    a. Cathedral Stone Products, Inc.; Jahn M100 Terra Cotta and Brick Repair Mortar.
    b. Edison Coatings, Inc.; Custom System 45.

2. Use formulation that is vapor- and water permeable (equal to or more than the masonry unit), exhibits low shrinkage, has lower modulus of elasticity than the masonry units being repaired, and develops high bond strength to all types of masonry.
3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
4. Formulate patching compound used for patching brick in colors and textures to match each masonry unit being patched. Provide sufficient number of colors to enable matching the color, texture, and variation of each unit.

11.4 PAINT REMOVERS

A. Solvent-Type Paint Remover: Manufacturer's standard water-rinsable, solvent-type gel formulation for removing paint coatings from masonry.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

    a. ABR Products, Inc.; Super Bio Strip Gel.
    b. Diedrich Technologies Inc.; 505 Special Coatings Stripper.
    c. Dumond Chemicals, Inc.; Peel Away 2.
    d. Hydroclean, Hydrochemical Techniques, Inc.; Hydroclean HT-300 Solvent Paint Remover.
    e. Price Research, Ltd.; Price Strip-All.
    f. PROSOCO; Sure Klean Fast Acting Stripper.

11.5 CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F.

C. Job-Mixed Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium polyphosphate, 1/2 cup of laundry detergent, and 20 quarts of hot water for every 5 gal. of solution required.

D. Job-Mixed Mold, Mildew, and Algae Remover: Solution prepared by mixing 2 cups of tetrasodium polyphosphate, 5 quarts of 5 percent sodium hypochlorite (bleach), and 15 quarts of hot water for every 5 gal. of solution required.

E. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Diedrich Technologies Inc.; Diedrich 910PM Polished Marble Cleaner.
b. Dominion Restoration Products, Inc.; Bio-Cleanse.
c. Dumond Chemicals, Inc.; Safe n' Easy Architectural Cleaner/Restorer.
d. Price Research, Ltd.; Price Non-Acid Masonry Cleaner.
e. PROSOCO; Enviro Klean 2010 All Surface Cleaner.

11.6 ACCESSORY MATERIALS

A. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting glass, metal, and polished stone surfaces from damaging effects of acidic and alkaline masonry cleaners.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. ABR Products, Inc.; Rubber Mask.
b. Price Research, Ltd.; Price Mask.
c. PROSOCO; Sure Klean Strippable Masking.

B. Sealant Materials:

1. Provide manufacturer's standard chemically curing, elastomeric sealant(s) of base polymer and characteristics indicated below that comply with applicable requirements in Division 7 Section "Joint Sealants."

a. Single-component, nonsag urethane sealant.

2. Colors: Provide colors of exposed sealants to match colors of masonry adjoining installed sealant unless otherwise indicated.
3. Ground-Mortar Aggregate: Custom crushed and ground pointing mortar sand or existing mortar retrieved from joints. Grind to a particle size that matches the adjacent mortar aggregate and color. Remove all fines passing the 100 sieve.

C. Joint-Sealant Backing:

1. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
2. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where acceptable.

D. Setting Buttons: Resilient plastic buttons, nonstaining to masonry, sized to suit joint thicknesses and bed depths of masonry units without intruding into required depths of pointing materials.

E. Masking Tape: Nonstaining, nonabsorbent material, compatible with pointing mortar, joint primers, sealants, and surfaces adjacent to joints; that will easily come off entirely, including adhesive.

F. Miscellaneous Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Little possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:

a. Remove, alter, or in any way harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
b. Leave a residue on surfaces.

11.7 MORTAR MIXES

A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C 5 and manufacturer's written instructions.

B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

C. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not exceed a pigment-to-cement ratio of 1:10 by weight.

D. Do not use admixtures in mortar unless otherwise indicated.

E. Mortar Proportions: Mix mortar materials in the following proportions:

1. Pointing Mortar for Brick: 1 part portland cement, 2 parts lime, and 6 parts sand.

a. Add mortar pigments to produce mortar colors required.

2. Rebuilding (Setting) Mortar: Same as pointing mortar

11.8 CHEMICAL CLEANING SOLUTIONS

A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended by chemical-cleaner manufacturer.

B. Acidic Cleaner Solution for Brick: Dilute with water to produce hydrofluoric acid content of 3 percent or less, but not greater than that recommended by chemical-cleaner manufacturer.

PART 12 - EXECUTION

12.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work.

1. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of restoration and cleaning work.

B. Comply with chemical-cleaner manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical-cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

1. Cover adjacent surfaces with materials that are proven to resist chemical cleaners used unless chemical cleaners being used will not damage adjacent surfaces. Use materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
2. Keep wall wet below area being cleaned to prevent streaking from runoff.
3. Do not clean masonry during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
4. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.

5. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

C. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and projections to protect from mortar droppings.
2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
3. Immediately remove mortar in contact with exposed masonry and other surfaces.
4. Clean mortar splatters from scaffolding at end of each day.

12.2 UNUSED ANCHOR REMOVAL

A. Remove masonry anchors, brackets, wood nailers, and other extraneous items no longer in use unless identified as historically significant or indicated to remain.

1. Remove items carefully to avoid spalling or cracking masonry.
2. Where directed, if an item cannot be removed without damaging surrounding masonry, do the following:

   a. Cut or grind off item approximately 1/2 inch beneath surface and core drill a recess of same depth in surrounding masonry as close around item as practical.
   b. Immediately paint exposed end of item with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.

3. Patch the hole where each item was removed unless directed to remove and replace the masonry unit.

12.3 BRICK REMOVAL AND REPLACEMENT

A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

1. When removing single bricks, remove material from center of brick and work toward outside edges.

B. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

C. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.

D. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
3. Store brick for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.

E. Clean bricks surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.

F. Replace removed damaged brick with other removed brick or salvaged brick in good quality, where possible, or with new brick matching existing brick, including size. Do not use broken units unless they can be cut to usable size.

G. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

1. Maintain joint width for replacement units to match existing joints.
2. Use setting buttons or shims to set units accurately spaced with uniform joints.

H. Lay replacement brick with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
2. Rake out mortar used for laying brick before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing masonry, and at same time as repointing of surrounding area.
3. When mortar is sufficiently hard to support units, remove shims and other devices interfering with pointing of joints.

12.4 PAINTING STEEL UNCOVERED DURING THE WORK

A. Inspect steel exposed during masonry removal. Where Architect determines that it is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:

1. Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning" as applicable to meet paint manufacturer's recommended preparation.
2. Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).

B. If on inspection and rust removal, the cross section of a steel member is found to be reduced from rust by more than 1/16 inch, notify Architect before proceeding.

12.5 MASONRY UNIT PATCHING

A. Patch the following masonry units unless another type of replacement or repair is indicated:

1. Units indicated to be patched and holes larger than 2 ½" in diameter.

B. Patching Bricks:

1. Remove loose material from masonry surface. Carefully remove additional material so patch will not have feathered edges but will have square or slightly undercut edges on area to be patched and will be at least 1/4 inch thick, but not less than recommended by patching compound manufacturer.
2. Mask adjacent mortar joint or rake out for repointing if patch will extend to edge of masonry unit.
3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
4. Rinse surface to be patched and leave damp, but without standing water.
5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
6. Place patching compound in layers as recommended by patching compound manufacturer, but not less than 1/4 inch or more than 2 inches thick. Roughen surface of each layer to provide a key for next layer.
7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of the masonry unit. Shape and finish surface before or after curing, as determined by testing, to best match existing masonry unit.
8. Keep each layer damp for 72 hours or until patching compound has set.

12.6 CLEANING MASONRY, GENERAL

A. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water will not wash over cleaned, dry surfaces.

B. Use only those cleaning methods indicated for each masonry material and location.

1. Do not use wire brushes or brushes that are not resistant to chemical cleaner being used. Do not use plastic-bristle brushes if natural-fiber brushes will resist chemical cleaner being used.
2. Use spray equipment that provides controlled application at volume and pressure indicated, measured at spray tip. Adjust pressure and volume to ensure that cleaning methods do not damage masonry.

    a. Equip units with pressure gages.

3. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with cone-shaped spray tip.
4. For water-spray application, use fan-shaped spray tip that disperses water at an angle of 25 to 50 degrees.

5. For high-pressure water-spray application, use fan-shaped spray tip that disperses water at an angle of at least 40 degrees.
6. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F at flow rates indicated.
7. For steam application, use steam generator capable of delivering live steam at nozzle.

C. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.

D. Water Application Methods:
1. Water-Spray Applications: Unless otherwise indicated, hold spray nozzle at least 6 inches from surface of masonry and apply water in horizontal back and forth sweeping motion, overlapping previous strokes to produce uniform coverage.

E. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces to comply with chemical-cleaner manufacturer's written instructions; use brush or spray application. **Do not spray apply at pressures exceeding 50 psi.** Do not allow chemicals to remain on surface for periods longer than those indicated or recommended by manufacturer.

F. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.

1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

G. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

12.7 PRELIMINARY CLEANING

A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing to dry as long as possible before removal. Remove loose soil and debris from open masonry joints to whatever depth they occur.

B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to cleaning methods being used. Extraneous substances include paint, calking, asphalt, and tar.

1. Carefully remove heavy accumulations of material from surface of masonry with a sharp chisel. Do not scratch or chip masonry surface.
2. Remove paint and calking with alkaline paint remover.

a. Comply with requirements in "Paint Removal" Article.
b. Repeat application up to two times if needed.

3. Remove asphalt and tar with solvent-type paint remover.

    a. Comply with requirements in "Paint Removal" Article.
    b. Apply paint remover only to asphalt and tar by brush without prewetting.
    c. Allow paint remover to remain on surface for 10 to 30 minutes.
    d. Repeat application if needed.

12.8 PAINT REMOVAL

A. Paint Removal with Solvent-Type Paint Remover:

1. Remove loose and peeling paint using medium-pressure spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply thick coating of paint remover to painted masonry with natural-fiber cleaning brush, deep-nap roller, or large paint brush.
3. Allow paint remover to remain on surface for period recommended by manufacturer. Agitate periodically with stiff-fiber brush.
4. Rinse with water applied by medium-pressure spray to remove chemicals and paint residue.

12.9 CLEANING BRICKWORK

A. Cold-Water Soak:

1. Apply cold water by intermittent spraying to keep surface moist.
2. Use perforated hoses or other means that will apply a fine water mist to entire surface being cleaned.
3. Apply water in cycles with at least 30 minutes between cycles.
4. Continue spraying until surface encrustation has softened sufficiently to permit its removal by water wash, as indicated by cleaning tests.
5. Continue spraying for 72 hours.
6. Remove soil and softened surface encrustation from masonry with cold water applied by low-pressure spray.

B. Cold-Water Wash: Use cold water applied by medium-pressure spray.

C. Hot-Water Wash: Use hot water applied by medium-pressure spray.

D. Steam Cleaning: Apply steam at very low pressures not exceeding 80 psi. Remove dirt softened by steam with wood scrapers, stiff-nylon or -fiber brushes, or cold-water wash, as indicated by cleaning tests.

E. Detergent Cleaning:

1. Wet masonry with cold water applied by low-pressure spray.
2. Scrub masonry with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that masonry surface remains wet.

3. Rinse with cold water applied by low-pressure spray to remove detergent solution and soil.
4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

F. Mold, Mildew, and Algae Removal:

1. Wet masonry with cold water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
3. Scrub masonry with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that masonry surface remains wet.
4. Rinse with cold water applied by low-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

G. Nonacidic Liquid Chemical Cleaning:

1. Wet masonry with cold water applied by low-pressure spray.
2. Apply cleaner to masonry in two applications by brush or low-pressure spray. Let cleaner remain on surface for period indicated below:

   a. As recommended by chemical-cleaner manufacturer.
   b. As established by mockup.
   c. Two to three minutes.

3. Rinse with cold water applied by low-pressure spray to remove chemicals and soil.
4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.
5.

12.10 REPOINTING MASONRY

A. Rake out and repoint joints to the following extent:
   1. Joints where mortar is missing or where they contain holes.
   2. Cracked joints where cracks can be penetrated at least 3/4 inch by a knife blade 0.027 inch thick.
   3. Cracked joints where cracks are 1/2 inch or more in width and of any depth.
   4. Joints where they are deteriorated to point that mortar can be easily removed by hand, without tools.
   5. Joints where they have been filled with substances other than mortar.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, according to procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of 2-1/2 times joint width, but not less than 1/2 inch or not less than that required to expose sound, unweathered mortar.
2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Architect.

    a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without Architect's written approval based on approved quality-control program.
    b. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar by hand with chisel and resilient mallet. Strictly adhere to approved quality-control program.

D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
3. After low areas have been filled to same depth as remaining joints, point all joints by placing mortar in layers not greater than 3/8 inch. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours including weekends and holidays.

    a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
    b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.

6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

F. Pointing with Sealant:

1. After raking out, keep joints dry and free of mortar and debris.
2. Clean and prepare joint surfaces according to Division 7 Section "Joint Sealants." Prime joint surfaces unless sealant manufacturer recommends against priming. Do not allow primer to spill or migrate onto adjoining surfaces.
3. Fill sealant joints with specified joint sealant according to Division 7 Section "Joint Sealants" and the following:

    a. Install cylindrical sealant backing beneath the sealant, except where space is insufficient. There, install bond-breaker tape.
    b. Install sealant using only proven installation techniques that will ensure that sealant will be deposited in a uniform, continuous ribbon, without gaps or air pockets, and with complete wetting of the joint bond surfaces equally on both sides. Fill joint flush with surrounding masonry and matching the contour of adjoining mortar joints.
    c. Install sealant as recommended by sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead:

        1) Fill joints to a depth equal to joint width, but not more than 1/2 inch deep or less than 1/4 inch deep.

    d. Immediately after first tooling, apply ground-mortar aggregate to sealant, gently pushing aggregate into the surface of sealant. Retool sealant to form smooth, uniform beads, slightly concave. Remove excess sealant and aggregate from surfaces adjacent to joint.
    e. Do not allow sealant to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces, particularly rough textures. Remove excess and spillage of sealant promptly as the work progresses. Clean adjoining surfaces by the means necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes, as demonstrated in an approved mockup.

4. Cure sealant according to Division 7 Section "Joint Sealants."

G. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

12.11 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, spray applied at low pressure.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Wash adjacent woodwork and other nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Sweep and rake adjacent pavement and grounds to remove mortar and debris. Where necessary, pressure wash pavement surfaces to remove mortar, dust, dirt, and stains.

12.12 FIELD QUALITY CONTROL

A. Inspectors: Owner will engage qualified independent inspectors to perform inspections and prepare test reports. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.

B. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

C. Notify Owner in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until **City of Roanoke** representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION

SECTION 06100
ROUGH CARPENTRY

PART 13 - GENERAL

13.1 RELATED DOCUMENTS

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

13.2 SUMMARY

A. This Section includes the following:

1. Framing with dimension lumber.
2. Wood blocking and nailers.
3. Wood furring and grounds.

13.3 DEFINITIONS

A. Exposed Framing: Framing not concealed by other construction.

B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

C. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. NLGA: National Lumber Grades Authority.
3. SPIB: The Southern Pine Inspection Bureau.
4. WCLIB: West Coast Lumber Inspection Bureau.
5. WWPA: Western Wood Products Association.

13.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

13.5 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 14 - PRODUCTS

14.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

14.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA C2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat all rough carpentry, unless otherwise indicated.

14.3 DIMENSION LUMBER FRAMING

A. Maximum Moisture Content: 19 percent or less.

B. Framing: No. 2 grade and of the following species:

1. Southern pine; SPIB.

C. Exposed Exterior Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
1. Species and Grade: Southern pine, No. 1 grade; SPIB.

14.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Cants.
4. Furring.
5. Grounds.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content and of the following species:

1. Spruce-pine-fir; NLGA.

C. For concealed boards, provide lumber with 19 percent maximum moisture content and of the following species and grades:

1. Spruce-pine-fir (south) or spruce-pine-fir, Construction or 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

14.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Wood Screws: ASME B18.6.1.

D. Lag Bolts: ASME B18.2.1.

14.6 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

B. Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

C. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

PART 15 - EXECUTION

15.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Do not splice structural members between supports, unless otherwise indicated.

D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

E. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal- thickness.
3. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.

F. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

G. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's Uniform Building Code.
4. Table 2305.2, "Fastening Schedule," in BOCA's BOCA National Building Code.
5. Table 2306.1, "Fastening Schedule," in SBCCI's Standard Building Code.
6. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
7. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in ICC's International One- and Two-Family Dwelling Code.

I. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

J. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

1. Comply with approved fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.

2. Use finishing nails, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

15.2 WOOD GROUND, BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

15.3 WOOD FURRING INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal- size furring vertically at 24 inches o.c.

15.4 WALL AND PARTITION FRAMING INSTALLATION

A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions and for load-bearing partitions where framing members bearing on partition are located directly over studs. Fasten plates to supporting construction, unless otherwise indicated.

1. For exterior walls, provide 2-by-6-inch nominal- size wood studs spaced 16 inches o.c., unless otherwise indicated.

B. Construct corners and intersections with three or more studs

C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.

1. For non-load-bearing partitions, provide double-jamb studs and headers not less than 4-inch nominal depth for openings 48 inches and less in width, 6-inch nominal depth for openings 48 to 72 inches in width, 8-inch nominal depth for openings 72 to 120 inches in width, and not less than 10-inch nominal depth for openings 10 to 12 feet in width.
2. For load-bearing walls, provide double-jamb studs for openings 60 inches and less in width, and triple-jamb studs for wider openings. Provide headers

according to Table R502.5(1) or Table R502.5(2), as applicable, in ICC's International Residential Code for One- and Two-Family Dwellings.

15.5 RAFTER FRAMING INSTALLATION

A. Provide collar beams (ties) 1-by-6-inch nominal- size boards between every third pair of rafters, but not more than 48 inches o.c. Cut ends to fit roof slope and nail to rafters.

B. Provide special framing as indicated for eaves, overhangs, dormers, and similar conditions, if any.

15.6 STAIR FRAMING INSTALLATION

A. Provide stair framing members of size, space, and configuration indicated or, if not indicated, to comply with the following requirements:

1. Stringer Size: 2-by-12-inch nominal- size, minimum.
2. Stringer Material: solid pressure treated lumber.
3. Notching: Notch stringers to receive treads, risers, and supports; leave at least 3-1/2 inches of effective depth.
4. Stringer Spacing: At least 3 stringers for each 36-inch clear width of stair.

B. Provide stair framing with no more than 3/16-inch variation between adjacent treads and risers and no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

15.7 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

SECTION 06401
EXTERIOR ARCHITECTURAL WOODWORK

PART 16 - GENERAL

16.1 RELATED DOCUMENTS

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

16.2 SUMMARY

A. This Section includes the following:

1. Exterior standing and running trim.
2. Exterior frames and jambs.
3. Wood beaded ceiling boards.
4. Tongue and Groove Porch Decking.
5. Shop priming exterior woodwork.
6. Roof sheathing.

16.3 SUBMITTALS

A. Product Data: For each type of product and process indicated and incorporated into items of exterior architectural woodwork during fabrication, finishing, and installation.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
1. Show locations and sizes of blocking and nailers, including concealed blocking and reinforcement specified in other Sections.

16.4 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of exterior architectural woodwork indicated for construction, finishes, installation, and other requirements.

1. Provide AWI Quality Certification Program certificates indicating that woodwork complies with requirements of grades specified.

16.5 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation of exterior woodwork only when existing and forecasted weather conditions permit work to be performed and at least one coat of specified finish to be applied without exposure to rain, snow, or dampness.

B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed and indicate measurements on Shop Drawings.
2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

16.6 COORDINATION

A. Coordinate sizes and locations of framing, blocking, reinforcements, and other related units of Work specified in other Sections to ensure that exterior architectural woodwork can be supported and installed as indicated.

PART 17 - PRODUCTS

17.1 MATERIALS

A. General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

B. Wood Products: Comply with the following:

1. Hardboard: AHA A135.4.
2. Softwood Plywood: DOC PS 1, Exterior.

17.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood) and the following:

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.

2. Kiln-dry lumber and plywood after treatment to a maximum moisture content, respectively, of 19 and 15 percent. Do not use materials that are warped or do not comply with requirements for untreated materials.
3. Mark each treated item with treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.

B. Extent of Treatment: Treat blocking and nailers by pressure process and treat other exterior architectural woodwork either by pressure or nonpressure process.

17.3 INSTALLATION MATERIALS

A. Blocking, Shims, and Nailers: Softwood or hardwood lumber, pressure-preservative treated, kiln dried to less than 15 percent moisture content.

B. Nails: Hot-dip galvanized or stainless steel.

C. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts, unless otherwise indicated. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

17.4 FABRICATION, GENERAL

A. Wood Moisture Content: 10 to 15 percent.

B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Edges of Solid-Wood (Lumber) Members 3/4 Inch Thick or Less: 1/16 inch.
2. Edges of Rails and Similar Members More Than 3/4 Inch Thick: 1/8 inch.

C. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

D. Shop cut openings, to maximum extent possible, to receive hardware, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Smooth edges of cutouts and seal with a water-resistant coating suitable for exterior applications.

17.5 EXTERIOR STANDING AND RUNNING TRIM FOR OPAQUE FINISH

A. Grade: Custom.

B. Backout or groove backs of flat trim members, and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

C. Assemble casings in plant except where shipping limitations require field assembly.

D. Wood Species: Any closed-grain hardwood.

1. Do not use plain-sawn lumber with exposed, flat surfaces more than 3 inches wide.

17.6 EXTERIOR BEADED BOARD FOR CLEAR FINISH

A. Quality Standard: Comply with AWI Section 300.

1. Grade: custom.

B. Assemble moldings in plant to maximum extent possible. Miter corners in plant and prepare for field assembly with bolted fittings designed to pull connections together.

C. Wood species: Cypress. Finish – stain grade.

D. Texture: one face saw textured, the other surfaced (smooth).

17.7 3 1/4" DOUGLAS FIR PORCH DECKING

A. 3 1/4" Vertical Grain Douglas Fir Porch Decking.

1. Thickness: 23/32"
2. Width: 3 1/4"
3. Kiln Dried
4. Edge-detail: square edge

17.8 EXTERIOR FRAMES AND JAMBS FOR OPAQUE FINISH

A. Grade: Custom.

B. Wood Species: Any closed-grain hardwood.

1. Do not use plain-sawn lumber with exposed, flat surfaces more than 3 inches wide.

17.9 SHOP PRIMING

A. Woodwork for Opaque Finish: Shop prime woodwork for paint finish with one coat of wood primer specified in Division 09 painting Sections.

B. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.

1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.

17.10 ROOF SHEATHING

A. Plywood Roof Sheathing: Exterior, Structural I sheathing.

1. Span Rating: Not less than 24/0.

2. Nominal Thickness: As indicated on drawings.

17.11 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For roof sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Standard in "Power-Driven Fasteners" Paragraph below covers power-driven staples, nails, P-nails, and allied fasteners.

D. Power-Driven Fasteners: NES NER-272.

E. Wood Screws: ASME B18.6.1.

PART 18 - EXECUTION

18.1 PREPARATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Deliver concrete inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.

C. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

18.2 INSTALLATION

A. Quality Standard: Install woodwork to comply with same grade specified in Part 2 for type of woodwork involved.

B. Install woodwork true and straight with no distortions. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

D. Preservative-Treated Wood: Where cut or drilled in field, treat cut ends and drilled holes according to AWPA M4.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk concealed fasteners and blind nailing. Use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork.

F. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

1. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches.

G. Refer to Division 09 Sections for final finishing of installed architectural woodwork.

18.3 ADJUSTING AND CLEANING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; replace woodwork where not possible to repair. Adjust joinery for uniform appearance.

B. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION

SECTION 07920
JOINT SEALANTS

PART 19 - GENERAL

19.1 RELATED DOCUMENTS

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

19.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Latex joint sealants.

B. Related Sections:
1. Division 08 Section "Glazing" for glazing sealants.

19.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

C. Warranties: Sample of special warranties.

19.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

19.5 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

19.6 WARRANTY

A. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 20 - PRODUCTS

20.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

D. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

E. Colors of Exposed Joint Sealants: As selected by Owner from manufacturer's full range.

20.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

20.3 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

20.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material) or either of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

20.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 21 - EXECUTION

21.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

21.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.
    d. Exterior insulation and finish systems.

3. Remove laitance and form-release agents from concrete.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

21.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

21.4 FIELD QUALITY CONTROL

A. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

21.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

21.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

21.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces

1. Joint Locations:

a. Perimeter joints between materials listed above and frames of windows

2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 50
3. Joint-Sealant Color: As selected by Owner from manufacturer's full range of colors

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces

1. Joint Locations:

   a. Perimeter joints between interior wall surfaces and frames of interior doors and windows.

2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Owner from manufacturer's full range of colors

END OF SECTION

SECTION 07311
ASPHALT SHINGLES

PART 22 - GENERAL

22.1 RELATED DOCUMENTS

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

22.2 SUMMARY

A. Section Includes:

1. Asphalt shingles.
2. Underlayment.
3. Sheet metal

22.3 DEFINITION

A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

22.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for asphalt shingles.

C. Warranties: Sample of special warranties.

22.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain ridge and hip cap shingles ridge vents felt underlayment and self-adhering sheet underlayment from single source from single manufacturer.

C. Fire-Resistance Characteristics: Where indicated, provide asphalt shingles and related roofing materials identical to those of assemblies tested for fire resistance per test

method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.

22.6 DELIVERY, STORAGE, AND HANDLING

A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.

1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

22.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install asphalt shingles until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

22.8 WARRANTY

A. Special Warranty: Standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Manufacturing defects.
   b. Structural failures including failure of asphalt shingles to self-seal after a reasonable time.

2. Material Warranty Period: 30 years from date of Substantial Completion, prorated, with first three years non-prorated.
3. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 100 mph for 10 years from date of Substantial Completion.
4. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor five years from date of Substantial Completion.
5. Workmanship Warranty Period: 10 years from date of Substantial Completion.

B. Special Project Warranty: Roofing Installer's Warranty, or warranty form at end of this Section, signed by roofing Installer, covering the Work of this Section, in which roofing Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

22.9 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Asphalt Shingles: 33 sq. ft of each type, in an unbroken bundle.

PART 23 - PRODUCTS

23.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.

1. Basis-of-Design Product: Subject to compliance with requirements, provide one of the following:

a. Elk “Prestique Plus”; Elk Premium Building Products, Inc.
b. CertainTeed “Landmark Pro”; CertainTeed Corporation.
c. GAF “Timberline Ultra”; GAF Corp.

2. Butt Edge: Notched cut.
3. Strip Size: Manufacturer's standard.
4. Algae Resistance: Granules treated to resist algae discoloration.
5. Color and Blends: As selected by Architect from manufacturer's full range.

B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

23.2 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226, Type II, asphalt-saturated organic felts, nonperforated.

B. Self-Adhering Sheet Underlayment, Grace Ultra, Polyethylene Faced: ASTM D 1970, minimum of 30-mil- thick, slip-resisting, polyethylene-film-reinforced top surface laminated to butyl rubber, with release paper backing; cold applied. Provide primer for adjoining concrete or masonry surfaces to receive underlayment.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Insert manufacturer's name; product name or designation or comparable product by one of the following:

a. Carlisle Coatings & Waterproofing, Inc.
b. Grace, W. R. & Co. - Conn.
c. Henry Company.
d. Johns Manville.
e. Owens Corning.
f. Polyguard Products, Inc.
g. Protecto Wrap Company.
h. Elk Corporation.

23.3 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch- diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

C. Felt Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter.

23.4 METAL FLASHING AND TRIM

A. General: Comply with requirements in SMACNA’s “Architectural Sheet Metal Manual.”

1. Sheet Metal: Zinc-tin alloy-coated steel, 22 gage, at crickets, drips and valleys.

2. Pre-finished steel at step flashings.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item.

1. Apron Flashings: Fabricate with lower flange a minimum of 4 inches over and 4 inches beyond each side of downslope asphalt shingles and 6 inches up the vertical surface.
2. Step Flashings: Fabricate with a headlap of 2 inches and a minimum extension of 4 inches over the underlying asphalt shingle and up the vertical surface.
3. Cricket Flashings: Fabricate with concealed flange extending a minimum of 18 inches beneath upslope asphalt shingles and 6 inches beyond each side of chimney and 6 inches above the roof plane.
4. Open-Valley Flashings: Fabricate in lengths not exceeding 10 feet with 1-inch-high, inverted-V profile at center of valley and equal flange widths of 10 inches.
5. Drip Edges: Fabricate in lengths not exceeding 10 feet with 2-inch roof-deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge.

C. Vent Pipe Flashings: ASTM B 749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches from pipe onto roof.

PART 24 - EXECUTION

24.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

24.2 UNDERLAYMENT INSTALLATION

A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

B. Single-Layer Felt Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides a minimum of 2 inches over underlying course. Lap ends a minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with felt underlayment nails.

1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends of felt not less than 6 inches over self-adhering sheet underlayment.
2. Install fasteners at no more than 36 inch o.c.

C. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.

1. Prime concrete and masonry surfaces to receive self-adhering sheet underlayment.

2. Eaves: Extend from edges of eaves 24 inches beyond interior face of exterior wall.
3. Rakes: Extend from edges of rake 24 inches beyond interior face of exterior wall.
4. Valleys: Extend from lowest to highest point 18 inches on each side.
5. Hips: Extend 18 inches on each side.
6. Ridges: Extend 36 inches on each side without obstructing continuous ridge vent slot.
7. Sidewalls: Extend beyond sidewall 18 inches, and return vertically against sidewall not less than 4 inches.
8. Dormers, Chimneys, Skylights, and Other Roof-Penetrating Elements: Extend beyond penetrating element 18 inches, and return vertically against penetrating element not less than 4 inches.
9. Roof Slope Transitions: Extend 18 inches on each roof slope.

D. Metal-Flashed, Open-Valley Underlayment: Install two layers of 36-inch- wide felt underlayment centered in valley. Stagger end laps between layers at least 72 inches. Lap ends of each layer at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Fasten each layer to roof deck with felt underlayment nails.

1. Lap roof-deck felt underlayment over first layer of valley felt underlayment at least 6 inches.

24.3 METAL FLASHING INSTALLATION

A. General: Install metal flashings and other sheet metal to comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."

1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.

C. Step Flashings: Install with a headlap of 2 inches and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.

D. Cricket Flashings: Install against the roof-penetrating element extending concealed flange beneath upslope asphalt shingles and beyond each side.

E. Open-Valley Flashings: Install centered in valleys, lapping ends at least 8 inches in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.

1. Secure hemmed flange edges into metal cleats spaced 12 inches apart and fastened to roof deck.
2. Adhere 9-inch- wide strip of self-adhering sheet to metal flanges and to self-adhering sheet underlayment.

F. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.

G. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.

H. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

24.4 ASPHALT SHINGLE INSTALLATION

A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed at least 7 inches wide with self-sealing strip face up at roof edge.

1. Extend asphalt shingles 3/4 inch over fasciae at eaves and rakes.
2. Install starter strip along rake edge.

C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

D. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full-length first course followed by cut second course, repeating alternating pattern in succeeding courses.

E. Fasten asphalt shingle strips with a minimum of four roofing nails located according to manufacturer's written instructions.

1. Where roof slope exceeds 20:12, seal asphalt shingles with asphalt roofing cement spots after fastening with additional roofing nails.
2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
3. When ambient temperature during installation is below 50 deg F, seal asphalt shingles with asphalt roofing cement spots.

F. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.

G. Ridge and Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.

1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

24.5 ROOFING INSTALLER'S WARRANTY

A. WHEREAS, <**Insert Name of Contractor**>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: Piedmont Community Services- Patrick County
2. Address: Stuart, VA
3. Building Name/Type: Community Services- Facility Addition
4. Acceptance Date: Substantial Completion.
5. Warranty Period: 30 years.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:

    a. Lightning;
    b. Peak gust wind speed exceeding 100 mph;
    c. Fire;
    d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    f. Vapor condensation on bottom of roofing; and
    g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages

Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this <**Insert day**> day of <**Insert month**>, <**Insert year**>.

1. Authorized Signature: <**Insert signature**>.
2. Name: <**Insert name**>.
3. Title: <**Insert title**>.

END OF SECTION

SECTION 07620
SHEET METAL FLASHING AND TRIM

PART 25 - GENERAL

25.1 RELATED DOCUMENTS

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

25.2 SUMMARY

A. Section Includes:

1. Formed Products:

a. Formed roof drainage sheet metal fabrications.
b. Formed roof edge fabrications.
c. Gutters and Downspouts.

B. Related Sections:

1. Division 06 Section "Rough Carpentry" for wood nailers, curbs, and blocking.
2. Division 07 Section "Asphalt Shingles" for sheet metal flashing and trim integral with shingle roofing.

25.3 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Fabricate and install roof edge flashing and copings capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
1. Wind Zone 2: For velocity pressures of 31 to 45 lbf/sq. ft.: 90-lbf/sq. ft. perimeter uplift force, 120-lbf/sq. ft. corner uplift force, and 45-lbf/sq. ft. outward force.

C. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

25.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:

1. Identification of material, thickness, weight, and finish for each item and location in Project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
4. Details of termination points and assemblies, including fixed points.
5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
7. Details of special conditions.
8. Details of connections to adjoining work.
9. Detail formed flashing and trim at a scale of not less than 1-1/2 inches per 12 inches.

C. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.

D. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.

E. Warranty: Sample of special warranty.

25.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

25.6 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

25.7 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

    a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 26 - PRODUCTS

26.1 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.

1. Surface: Smooth, flat.
2. Exposed Coil-Coated Finishes:

    a. Three-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

3. Color: As selected by Architect from manufacturer's full range.
4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

26.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

C. Solder:

D. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

E. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

H. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

26.3 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to

design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.

E. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

G. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" and by FMG Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.

H. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

I. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

J. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

K. Do not use graphite pencils to mark metal surfaces.

26.4 ROOF DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters.

1. Gutter Style: SMACNA designation A, half-round to matching existing.
2. Expansion Joints: Lap type.
3. Accessories: Wire ball downspout strainer.
4. Gutters with Girth up to 15 Inches: Fabricate from the following materials:

    a. Aluminum: 0.032 inch thick.

B. Downspouts: Fabricate rectangular (round where matching existing) downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors.

1. Fabricate from the following materials:

    a. Aluminum: 0.024 inch thick.

C. Splash Pans: Fabricate from the following materials:

1. Aluminum: 0.040 inch thick.

PART 27 - EXECUTION

27.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

27.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
5. Install sealant tape where indicated.
6. Torch cutting of sheet metal flashing and trim is not permitted.
7. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.

1. Coat back side of uncoated aluminum sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

D. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal joints as shown and as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

F. Rivets: Rivet joints in uncoated aluminum where indicated and where necessary for strength.

27.3 ROOF DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.

B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets spaced not more than 36 inches apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
   1. Fasten gutter spacers to front and back of gutter.
   2. Loosely lock straps to front gutter bead and anchor to roof deck.
   3. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches apart.
   4. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch telescoping joints.
   1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c. in between.
   2. Provide elbows at base of downspout to direct water away from building.
   3. Connect downspouts to underground drainage system indicated.

D. Splash Pans: Install where downspouts discharge on grade.

27.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

27.5 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07920
JOINT SEALANTS

PART 28 - GENERAL

28.1 RELATED DOCUMENTS

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

28.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Latex joint sealants.

B. Related Sections:
1. Division 08 Section "Glazing" for glazing sealants.

28.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

C. Warranties: Sample of special warranties.

28.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

28.5 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

28.6 WARRANTY

A. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 29 - PRODUCTS

29.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

D. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

E. Colors of Exposed Joint Sealants: As selected by Owner from manufacturer's full range.

29.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

29.3 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

29.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material) or either of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

29.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 30 - EXECUTION

30.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

30.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.
    d. Exterior insulation and finish systems.

3. Remove laitance and form-release agents from concrete.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

30.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

30.4 FIELD QUALITY CONTROL

A. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

30.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

30.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

30.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces

1. Joint Locations:

a. Perimeter joints between materials listed above and frames of windows

2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 50
3. Joint-Sealant Color: As selected by Owner from manufacturer's full range of colors

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces

1. Joint Locations:

   a. Perimeter joints between interior wall surfaces and frames of interior doors and windows.

2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Owner from manufacturer's full range of colors

END OF SECTION

SECTION 08411
ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 31 - GENERAL

31.1 RELATED DOCUMENTS

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

31.2 SUMMARY

A. Section Includes:

1. Exterior storefront framing.

31.3 DEFINITIONS

A. ADA/ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities."

31.4 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:

1. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
2. Dimensional tolerances of building frame and other adjacent construction.
3. Failure includes the following:

a. Deflection exceeding specified limits.
b. Thermal stresses transferring to building structure.
c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
d. Noise or vibration created by wind and by thermal and structural movements.
e. Loosening or weakening of fasteners, attachments, and other components.
f. Sealant failure.
g. Failure of operating units.

B. Structural Loads:

1. Wind Loads:

a. Basic Wind Speed: 85 mph.

C. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to L/360 of clear span or 1/8 inch, whichever is smaller.

D. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not fewer than 10 seconds.

E. Windborne-Debris-Impact-Resistance Performance: Provide aluminum-framed systems that pass missile-impact and cyclic-pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996 or AAMA 506.

1. Large-Missile Impact: For aluminum-framed systems located within 30 feet of grade.

F. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 1.57 lbf/sq. ft.

G. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

H. Water Penetration under Dynamic Pressure: Provide aluminum-framed systems that do not evidence water leakage through fixed glazing and framing areas when tested according to AAMA 501.1 under dynamic pressure equal to 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

1. Maximum Water Leakage: No uncontrolled water penetrating aluminum-framed systems or water appearing on systems' normally exposed interior surfaces from sources other than condensation. Water leakage does not include water

controlled by flashing and gutters that is drained to exterior and water that cannot damage adjacent materials or finishes.

I. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
2. Test Performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.

   a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 deg F.
   b. Low Exterior Ambient-Air Temperature: 0 deg F.

3. Interior Ambient-Air Temperature: 75 deg F.

J. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 45 when tested according to AAMA 1503.

K. Thermal Conductance: Provide aluminum-framed systems with fixed glazing and framing areas having an average U-factor of not more than 0.57 Btu/sq. ft. x h x deg F when tested according to AAMA 1503.

L. Sound Transmission: Provide aluminum-framed systems with fixed glazing and framing areas having the following sound-transmission characteristics:

1. Sound Transmission Class (STC): Minimum 35 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
2. Outdoor-Indoor Transmission Class (OITC): Minimum 34 OITC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 1332.

31.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for aluminum-framed systems.

B. Shop Drawings: For aluminum-framed systems. Include plans, elevations, sections, details, and attachments to other work.

1. Include details of provisions for system expansion and contraction and for drainage of moisture in the system to the exterior.

C. Warranties: Sample of special warranties.

31.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.

C. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.

D. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.

E. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.

F. Welding Qualifications: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code - Aluminum."

31.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

31.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration caused by thermal movements.

c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
d. Water leakage through fixed glazing and framing areas.
e. Failure of operating components.

2. Warranty Period: Three years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.

1. Warranty Period: Five years from date of Substantial Completion.

PART 32 - PRODUCTS

32.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. EFCO Corporation.
2. Kawneer North America; an Alcoa company.
3. Vistawall Architectural Products.
4. YKK AP

32.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Sheet and Plate: ASTM B 209.
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.
5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer, complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

32.3 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Thermally broken.
2. Glazing System: Retained mechanically with gaskets on four sides.
3. Glazing Plane: center, u.n.o.
4. Stile and Rail Doors:
   a. Medium Stile (at 631 Campbell)
   b. Narrow Stile (at 1201 Patterson Ave)

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system, fabricated from stainless steel.

D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts, complying with ASTM A 123/A 123M or ASTM A 153/A 153M.

E. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

F. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.

32.4 ENTRANCE DOOR HARDWARE

A. General: Provide entrance door hardware and entrance door hardware sets indicated in "Entrance Door Hardware Sets" Article for each entrance door to comply with requirements in this Section.
1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products equivalent in function and comparable in quality to named products with BHMA standard referenced.
2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
3. Opening-Force Requirements:
   a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion and not more than 15 lbf to open the door to its minimum required width.
   b. Accessible Interior Doors: Not more than 5 lbf to fully open door.

B. Opening-Force Requirements:

1. Delayed-Egress Locks: Lock releases within 15 seconds after applying a force of not more than 15 lbf for not more than 3 seconds.
2. Latches and Exit Devices: Not more than 15 lbf required to release latch.

C. Butt Hinges: BHMA A156.1, Grade 1, radius corner.
1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while entrance door is closed.
2. Exterior Hinges: Stainless steel, with stainless-steel pin.
3. Quantities:
a. For doors provide 3 hinges per leaf.

D. Mortise Auxiliary Locks: BHMA A156.5, Grade 1.

E. Panic Exit Devices: BHMA A156.3, Grade 1, listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305. Panics shall be the “Touch Bar type equal to Dor-o-matic 1490 concealed rod exit device.

F. Exterior Lockset: Schlage FE575 Keypad Lock (at 631 Campbell Ave)

G. Exterior Lock Cylinder (at 1201 Patterson Ave)

H. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.

I. Closers: BHMA A156.4, Grade 1, with accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use; adjustable to meet field conditions and requirements for opening force. Closers shall be equal to LCN 4040 series surface closers.

J. Door Stops: BHMA A156.16, Grade 1, floor or wall mounted, as appropriate for door location indicated, with integral rubber bumper.

K. Weather Stripping: Manufacturer's standard replaceable components.
1. Compression Type: Made of ASTM D 2000, molded neoprene, or ASTM D 2287, molded PVC.
2. Sliding Type: AAMA 701 made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.

L. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.

M. Thresholds: BHMA A156.21, raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch .

32.5 GLAZING SYSTEMS

A. Glazing: As specified in Division 08 Section "Glazing."

B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

32.6 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Joint Sealants."

32.7 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
6. Provisions for field replacement of glazing.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
1. At exterior doors, provide compression weather stripping at fixed stops.

E. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
1. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into door edge.
2. At exterior doors, provide weather sweeps applied to door bottoms.

F. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

G. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

H. Storefront Framing: Fabricate components for assembly using shear-block system or head-and-sill-receptor system with shear blocks at intermediate horizontal members.

I. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

PART 33 - EXECUTION

33.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

33.2 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

D. Set continuous sill members and flashing in full sealant bed as specified in Division 07 Section "Joint Sealants" to produce weathertight installation.

E. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

F. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.
1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.

2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

G. Install glazing as specified in Division 08 Section "Glazing."

H. Install perimeter joint sealants as specified in Division 07 Section "Joint Sealants" to produce weathertight installation.

33.3 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet; 1/4 inch over total length.
2. Alignment:

   a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
   b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

33.4 ADJUSTING

A. Adjust operating entrance door hardware to function smoothly as recommended by manufacturer.

<u>Single Doors</u>
1 Set Pivots
1 Exit Device
1 Closer
Weatherstrip
1 Floor Stop
Sweep/Threshold

<u>Double Doors</u>
2 Sets Pivots
2 Push/Pulls
2 Exit Devices
2 Closers
2 Floor Stops
2 Sweeps/Threshold

SECTION 08511

ALUMINUM WINDOWS

PART 1 GENERAL

1.1 SUMMARY

A Provide all labor, material, and equipment necessary to furnish and install aluminum windows as shown on drawings and specifications herein. Window shapes and accessories as specified and detailed shall establish the type of units and materials to be used to provide the functional performance and aesthetic requirements desired. Details indicate the required depth and profile.

1.2 RELATED REQUIREMENTS

A Section 07 90 00 – Joint Protection

B Section 08 80 00 – Glazing

1.3 REFERENCE STANDARDS

A AAMA/WDMA/CSA 101/I.S.2/A440-05 “Standard/Specification for Windows, Doors, and Unit Skylights”

B AAMA 502 “Voluntary Specification for Field Testing of Newly Installed Fenestration Products"

C AAMA 611 "Voluntary Specification for Anodized Architectural Aluminum"

D AAMA 701/702 "Voluntary Specification for Pile Weather Stripping and Replaceable Fenestration Weather Seals”

E AAMA 1503 “Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections”

F AAMA 2603 “Voluntary Specification, Performance Requirements, and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels”

G AAMA 2604 “Voluntary Specification, Performance Requirements, and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels”

H AAMA 2605 “Voluntary Specification, Performance Requirements, and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels”

I ASTM E90 “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions”

J ASTM E283 "Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen"

K ASTM E330 "Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference"

L ASTM E331 "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference"

M ASTM E413 “Classification for Rating Sound Insulation”

N ASTM E547 "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Differential"

O ASTM F588 “Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies and Excluding Glazing Impact”

P ASTM E966 “Standard Guide for Field Measurements of Airborne Sound Insulation of Building Facades and Facade Elements”

Q ASTM E1332 “Standard Classification for Determination of Outdoor Indoor Transmission Class”

R ASTM E1425 “Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems”

S ASTM E1886 “Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials”

T ASTM E1996 “Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes”

U ASTM E2190 "Standard Specification for Insulating Glass Unit Performance and Evaluation"

V V NFRC 100 “Procedure for Determining Fenestration Product U-Factors”

W NFRC 200 “Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence”

X NFRC 500 “Procedure for Determining Fenestration Product Condensation Resistance Values”

1.4 PERFORMANCE REQUIREMENTS

A Performance Requirements as specified in Part 2 and with the following requirements

B Uniform Load Structural Test

1 With sash in a closed position window shall be tested in accordance with ASTM E330. At a static air pressure difference of **65.0** pounds per square foot with pressure applied both positively and negatively.

2 Static air pressure difference shall be 1.5 times the design pressure used in AAMA/WDMA/CSA 101/I.S.2/A440-05. (1.5 is the factor used to provide a margin of safety in aluminum windows and is the minimum recommended by the AAMA.)

3 At conclusion of test, there shall be no glass breakage; permanent damage to fasteners, hardware parts, support arms or actuating mechanisms. Nor any other damage which would cause the window to be inoperable. Permanent deformation of any frame, sash or ventilator member shall not exceed 0.04% of its span.

C Air Infiltration

1 With sash in a closed and locked position window shall be tested in accordance with ASTM E283 and shall meet the following performance requirements.

a) Air infiltration on windows with less than 18 feet of operable sash crack perimeter shall not exceed 2.8 cfm per square foot of window area when tested in a static pressure drop of 1.57 psf (equivalent to 25 mph wind velocity) or 6.3 cfm total when tested at
6.24 psf (equivalent to 50 mph wind velocity).

b) Air infiltration on windows with 18 or more feet of operable sash crack perimeter shall not exceed 0.05 cfm per square foot of window area at a static pressure drop of 1.57 psf or .15 cfm at 6.24 psf.

D Water Resistance

1 All tests shall be conducted in accordance with ASTM E331. No water shall pass the innermost plane of the window when tested at a static air pressure difference of **12.0** psf.

E Thermal Performance

a) When tested in accordance with AAMA 1503 or according

to NFRC 100 the thermal transmittance due to conduction (Uc) shall not exceed **0.42** on the entire specimen.

b) When tested in accordance with AAMA 1503 or according to NFRC 100 the Condensation Resistance Factor (CRF) shall not be less than **52** on the entire specimen.

F Forced Entry Resistance

1 When tested in accordance with ASTM F588, window shall perform to a minimum Performance Level **10**.

G Sound Transmission

1 Sound Transmission Class (STC). When tested in accordance with ASTM E1425, window shall perform to a minimum **STC-34**. Testing shall be performed in a NVLAP Certified Test Laboratory.

2 Outdoor Indoor Transmission Class (OITC). When tested in accordance with ASTM E1332, window shall perform to a minimum of **OITC-27**. Testing shall be performed in a NVLAP Certified Test Laboratory.

1.5 QUALITY ASSURANCE

A All testing shall be performed by an independent architectural testing laboratory accredited by the American Architectural Manufactures Association (AAMA), the National Voluntary Laboratory Accreditation Program (NVLAP), the International Conference of Building Officials (ICBO), and such other accreditation as may be required by state of local building regulations.

B The manufacturer shall provide the architect and owner a notarized affidavit of compliance certifying that the windows furnished for this project are identical in every aspect of design, component parts (including sealants and the application thereof, reinforcing members, etc.) and fabrication techniques as the windows tested in the laboratory for which test reports have been furnished.

1.6 SUBMITTALS

A Window manufacturer shall supply test reports from an AAMA and NVLAP accredited laboratory certifying compliance with performance specifications for each type of window supplied for this project.

B Window manufacturer shall supply product data for each type of window required, including:

1 Construction details and fabrication methods

2 Data on hardware and accessories

3 Recommendations for maintenance and cleaning of exterior surfaces

C Before proceeding with the manufacture of windows, the window contractor shall submit complete shop drawings with installation details for the architect's approval. These drawings shall also show window elevations, details of all window sections, collateral materials, details of anchorage, and associated hardware.

D Window manufacturer shall submit three samples of finish.

E Window manufacturer shall submit a copy of the product warranty to be applied to this project.

1.7 WARRANTY

A The manufacturer shall warrant the product against material defects or defects in manufacturing. If a defect is discovered and brought to the attention of the manufacturer, the defect will be corrected at no cost to the owner. Warranty shall not be pro-rated. Warranties requiring the owner to return windows to the factory for repair or replacement shall not be accepted.

1 Windows: Warrant for **ten (10)** years against defects in material or

workmanship under normal use.

2 Insulating glass units: Warrant seal for **ten (10)** years against visual obstruction from film formation or moisture collection between internal glass surfaces, excluding that caused by glass breakage or abuse.

3 Finish:

a) Organic finish conforming to AAMA 2605-05: Warrant for **ten (10)** years against chipping, peeling, cracking, chalking or fading.

PART 2 PRODUCTS

2.1 MANUFACTURER

A Basis of design: St. Cloud Window, Inc., 390 Industrial Blvd., Sauk Rapids, MN 56379 Phone: 800-383-9311 Fax: 320-255-1513

1 SCW2500 – Historic Steel Replica Projecting

2 SCW2500 – Historic Steel Replica Fixed

B Requests for substitutions of products or manufacturer other than the base bid must be submitted to the architect 10 business days prior to the bid date. Requests for substitutions must demonstrate that the product seeking approval meets or exceeds the design and performance specifications of the base bid. Products not pre-approved by the architect in writing via addendum will not be accepted.

2.2 MATERIALS

A Aluminum Extrusions

1 Shall be accurately extruded aluminum alloy 6063-T6.

2 All primary sash and frame members shall have a minimum wall thickness of 0.125 inches.

B Insect Screen

1 All screen frames to be tubular extruded aluminum, finished with 18x16 screen cloth, securely held in place by means of reusable vinyl spline. Roll-formed screen frames shall not be accepted.

2 Provide screens on operating vents as indicated on the architectural plans.

3 *Wicket Screens*

a) *Wicket screens shall be mounted to the interior side of frame over the operating vent. Wicket screens will be constructed of 0.062 extruded aluminum and will incorporate a sliding wicket screen to allow for operation of vent cam handles.*

4 Mesh to be: **fiberglass**

C Thermal Barrier

1 Provide continuous extruded high performance nylon 6/6 polyamide with multi- directional 25% glass fiber reinforcing as manufactured by Technoform or equal. All polyamide material must be from a minimum of 90% virgin components, with a maximum 10% pre-consumer regrind. Aluminum components shall be mechanically crimped into cross knurled cavities and obtain a minimum composite shear value of 800 pounds for a 4 inch section. Rolled in PVC, single directional glass fiber reinforced polyamide, and pour and de-bridge Urethane thermal break systems will not be acceptable.

D Weather Stripping

1 A rubberized vinyl EPDM weather stripping bulb to be used in secured extruded ports at all frame vent perimeter locations.

E Hardware

1 Awning: Concealed 4-bar stainless steel balanced arm hinges to be used at the jamb sides of vents for opening and closing operation. The frame vent will be equipped with two white bronze cam handles to hold the vent in a tightly closed and locked position.

2 Casement: Exposed knuckle hinges located at the jamb and finished to match the window frame. The frame vent will be equipped with a brushed nickel rotary crank style operator at the sill with two brushed nickel cam locks at the jambs to hold the vent in a tightly closed and locked position.

3 Hopper: Concealed 4-bar stainless steel balanced arm hinges to be

used at the jamb sides of vents for opening and closing operation. The frame vent will be equipped with two white bronze cam handles to hold the vent in a tightly closed and locked position.

F Glazing

1 All glazing shall comply with the performance requirements outlined in CSI MasterFormat Section 08 80 00 - Glazing.

2 All windows to be fully factory glazed with 1 inch overall insulated glass.

3 All glass shall be glazed with removable stops and shall be replaceable without dismantling the sash or frame members.

4 A continuous polyshim tape will be used on the exterior glazing leg and a continuous silicone cap bead over the polyshim bonding to the glass edge to prevent moisture from intruding into the window system. A continuous rubberized vinyl compression bulb to be used on the interior glazing stops.

5 Nominal glass thickness and type shall be:

a) Exterior glass lite

i) Thickness: 1/4"

ii) Tint: clear

iii) Type: tempered

b) Air space

i) - 1/2” air filled

c) Interior glass lite

i) Thickness: 1/4"

ii) Tint: clear

iii) Type: tempered

iv) Coating: hard coat low E on #3 surface

G Muntin

1 Muntin grids shall be extruded aluminum with exposed surfaces finished to match window exterior and interior colors.

2 Muntin grids shall be applied to the interior and exterior of the glass lite to simulate a true divided light.

3 Insulated glass units shall incorporate between glass grids.

4 Grid patterns to be designated by

architect.

H FABRICATION

1 All joints of the frame shall be butt type and secured by means of thread-cutting stainless steel screws anchored into screw ports which shall be an integral part of the frame members. The vent frame shall use miter-type joinery and be secured together with the use of aluminum corner keys and crimped. All corner joints shall be joined neatly and all sharp edges shall be de-burred and filed smooth. Joints to be sealed for weather tightness with the use of small joint sealer material.

2.3 FINISH

A Anodized Finish: Class I (etched and anodized to 0.7 mil), conforming to

AAMA 611-98

a) Color to be selected from black, dark bronze, medium bronze, light bronze or champagne

PART 3 ERECTION

3.1 INSTALLATION

A All window and related window components shall be installed in accordance with requirements of the owner and the approved shop drawings of the manufacturer. Installation shall be by a contractor who is experienced and who shall document at least one other projects of similar nature and scope for which the window products were successfully installed.

B All materials shall be erected plumb, level and true, relative to the building structure. The maximum variation from plumb and level shall not exceed 1/8 inch (plus or minus) over 10 feet.

C Approved insulation materials shall be installed in the frame cavity on the interior portion of the window frame. Area adjacent to the exterior of the window frame shall remain un-insulated. The window installer shall use caution in the insulation operation to avoid overlapping insulation materials across the thermal-barrier connector thus bridging the two separate frame members.

3.2 CAULKING

A A grade “A” type urethane caulking compound: Pecora, Tremco, Vulkem or equal as approved by the architect, shall be applied per the installation drawings and details at all points where the aluminum master frame and/or panning intersects the masonry or other exterior wall finish. The caulking material shall be applied in a manner which insures a continuous air-tight and water-tight perimeter seal. Color to match the color of the aluminum windows unless specified otherwise by the architect.

3.3 ADJUSTMENTS, PROTECTION, AND CLEANING

A After installation, the erector shall remove all sealants, caulking, and other misplaced materials from all surfaces, including adjacent work. The window frame, sash, and glass shall be cleaned thoroughly with materials

and methods recommended by the window and glass manufacturers and shall not cause any defacement of the work.

B Installer shall make any and all adjustments to window sash and hardware to cause the operating sash to function properly and in accordance with the manufacture's standards.

C Protect from contact with contaminating substances resulting from construction operations, after installation and cleaning of windows by window contractor, the general contractor shall be responsible for maintaining the cleanliness and protection of the window from damage from other trades.

D Remove all sealant, caulking, and other misplaced materials from all surfaces, including adjacent work. The window frames, casing, and glass shall be thoroughly cleaned with materials and methods recommended by the window and glass manufacturers and shall not cause any defacement of the work.

E The general contractor shall be responsible for the protection of the work from damage by other trades.

END OF SECTION

SECTION 08520
ALUMINUM CLAD WOOD WINDOWS AND DOORS

PART 34 - GENERAL

34.1 RELATED DOCUMENTS

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

34.2 SUMMARY

A. This Section includes:
   1. Fixed and operable aluminum clad wood-framed windows
   2. Aluminum clad wood panel doors

34.3 DEFINITIONS

A. Performance class designations according to AAMA/WDMA 101/I.S.2/NAFS:

   1. AW: Architectural.
   2. HC: Heavy Commercial.
   3. C: Commercial.
   4. LC: Light Commercial.
   5. R: Residential.

B. Performance grade number according to AAMA/WDMA 101/I.S.2/NAFS:

   1. Design pressure number in pounds force per square foot used to determine the structural test pressure and water test pressure.

C. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.

D. Minimum Test Size: Smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

34.4 PERFORMANCE REQUIREMENTS

A. General: Provide wood windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified, and that are of test size indicated below:
   1. Size as field verified.

B. Structural Performance: Provide wood windows capable of withstanding the effects of the following loads based on testing units representative of those indicated for Project that pass AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Structural Test:

1. Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed indicated in miles per hour at 33 feet above grade, according to ASCE 7, Section 6.5, "Method 2-Analytical Procedure," based on mean roof heights above grade indicated on Drawings.

   a. Basic Wind Speed: 85 mph.

2. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch, whichever is less, at design pressure based on testing performed according to AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Deflection Test or structural computations.

C. Windborne-Debris Resistance: Provide glazed windows capable of resisting impact from windborne debris, based on the pass/fail criteria as determined from testing glazed windows identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 or AAMA 506 and requirements of authorities having jurisdiction.

34.5 SUBMITTALS

A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of wood window indicated.

B. Shop Drawings: Include plans, elevations, sections, details, hardware, attachments to other work, operational clearances, installation details, and the following:

1. Mullion details, including reinforcement and stiffeners.
2. Joinery details.
3. Expansion provisions.
4. Flashing and drainage details.
5. Weather-stripping details.
6. Thermal-break details.
7. Glazing details.
8. Window cleaning provisions.
9. For installed products indicated to comply with design loads, include structural analysis data prepared by or under the supervision of a qualified professional engineer detailing fabrication and assembly of wood windows and used to determine the following:

   a. Structural test pressures and design pressures from basic wind speeds indicated.
   b. Deflection limitations of glass framing systems.

C. Maintenance Data: For operable window sash, operating hardware, weather stripping and finishes to include in maintenance manuals.

D. Warranty: Special warranty specified in this Section.

34.6 QUALITY ASSURANCE

A. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.

1. Installer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
2. Engineering Responsibility: Preparation of data for wood windows, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Manufacturer Qualifications: A manufacturer capable of fabricating wood windows that meet or exceed performance requirements indicated and of documenting this performance by inclusion in lists and by labels, test reports, and calculations.

C. Source Limitations: Obtain wood windows through one source from a single manufacturer.

D. Product Options: Information on Drawings and in Specifications establishes requirements for wood windows' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

E. Product Options: Drawings indicate size, profiles, and dimensional requirements of wood windows and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements." Do not modify size and dimensional requirements.

1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

F. Fenestration Standard: Comply with AAMA/WDMA 101/I.S.2/NAFS, "North American Fenestration Standard Voluntary Performance Specification for Windows, Skylights and Glass Doors," for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Provide AAMA-certified wood windows with an attached label.

G. Glazing Publications: Comply with published recommendations of glass manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated.

34.7 PROJECT CONDITIONS

A. Field Measurements: Verify wood window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating wood windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

34.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
c. Faulty operation of movable sash and hardware.
d. Deterioration of wood, metals, aluminum, other materials, and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty Period:

a. Window: Three years from date of Substantial Completion.
b. Glazing: Five years from date of Substantial Completion.
c. Metal Finish: Five years from date of Substantial Completion.

PART 35 - PRODUCTS

35.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Anderson**;** 400 series Tilt-Wash Double hung windows or a comparable product by one of the following:

1. Aluminuml-Clad Wood Windows:

a. Andersen Commercial Group; Andersen Corporation.
b. Crestline; a brand of Peachtree Companies, Inc.
c. Pella
d. Weather Shield Mfg., Inc.
e. Jeld-wen, Inc.

35.2 WINDOW

A. Window Type: double hung.

B. AAMA/WDMA Performance Requirements: Provide wood windows of performance indicated that comply with AAMA/WDMA 101/I.S.2/NAFS .

1. Performance Class: LC 30

C. Air Infiltration: Maximum rate not more than indicated when tested according to AAMA/WDMA 101/I.S.2/NAFS, Air Infiltration Test.

1. Maximum Rate: 0.3 cfm/sq. ft. of area at an inward test pressure of 1.57 lbf/sq. ft.

D. Water Resistance: No water leakage as defined in AAMA/WDMA referenced test methods at a water test pressure equaling that indicated, when tested according to AAMA/WDMA 101/I.S.2/NAFS, Water Resistance Test.

1. Test Pressure: 15 percent of positive design pressure, but not less than 4.5 lbf/sq. ft. or more than 15 lbf/sq. ft.

E. Forced-Entry Resistance: Comply with Performance Grade 10 requirements when tested according to ASTM F 588.

F. Operating Force and Auxiliary (Durability) Tests: Comply with AAMA/WDMA 101/I.S.2/NAFS for operating window types indicated.

35.3 GLAZING

A. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

35.4 HARDWARE

A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with wood; designed to smoothly operate, tightly close, and securely lock wood windows, and sized to accommodate sash or ventilator weight and dimensions. Do not use aluminum in frictional contact with other metals. Where exposed, provide extruded, cast, or wrought aluminum.

B. Counterbalancing Mechanism: Comply with AAMA 902.

1. Sash-Balance Type: Concealed, tape-spring type, of size and capacity to hold sash stationary at any open position.

C. Sill Cap/Track: Rigid PVC or other weather-resistant plastic track with manufacturer's standard integral color, of thickness, dimensions, and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.

D. Locks and Latches: Designed to allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only. Provide custodial locks.

E. Roller Assemblies: Low-friction design.

F. Push-Bar Operators: Provide telescoping-type, push-bar operator designed to open and close ventilators with fixed screens.

G. Gear-Type Rotary Operators: Comply with AAMA 901 when tested according to ASTM E 405, Method A.

1. Operation Function: All ventilators move simultaneously and securely close at both jambs without using additional manually controlled locking devices.

H. Four- or Six-Bar Friction Hinges: Comply with AAMA 904.

1. Locking mechanism and handles for manual operation.
2. Friction Shoes: Provide friction shoes of nylon or other nonabrasive, nonstaining, noncorrosive, durable material.

I. Limit Devices: Provide concealed support arms with adjustable, limited, hold-open limit devices designed to restrict sash or ventilator opening.

1. Safety Devices: Limit clear opening to 6 inches for ventilation; with custodial key release.

35.5 INSECT SCREENS

A. General: Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Fabricate insect screens to fully integrate with window frame. Locate screens on inside of window and provide for each operable exterior sash or ventilator.

1. Aluminum Tubular Frame Screens: Comply with SMA 1004, "Specifications for Aluminum Tubular Frame Screens for Windows," Architectural C-24 class.

B. Aluminum Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, adjustable rollers, and removable PVC spline/anchor concealing edge of frame.

1. Aluminum Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet with minimum wall thickness as required for class indicated.
2. Finish: Baked-on organic coating in manufacturer's standard color.
3. Finish: Manufacturer's standard.

C. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch- diameter, coated aluminum wire.

1. Wire-Fabric Finish: Charcoal gray.

D. Wickets: Provide sliding or hinged wickets, framed and trimmed for a tight fit and for durability during handling.

35.6 ALUMINUM-CLAD WOOD HINGED DOORS

A. Aluminum-Clad Wood Hinged Doors: Architect Series factory-assembled aluminum-clad wood doors with outward-swing door panels installed in frame.

B. Frame:
   1. Select woods, water-repellent, preservative-treated in accordance with WDMA I.S.-4. Includes water-repellency, three active fungicides and an insecticide applied to the frame.
   2. Interior Exposed Surfaces: Pine veneered and edge-banded with no visible fastener holes.
   3. Exterior Surfaces: Clad with aluminum at head and jambs.
   4. Metal Sill: Solid aluminum, ADA approved, low profile.
      a. Finish: Mill finish.
   5. Overall Frame Depth: 5-7/8 inches (149 mm).

C. Door Panel:
   1. Select woods, water-repellent, preservative-treated in accordance with WDMA I.S.-4. Includes water-repellency, three active fungicides and an insecticide applied to the panel.
   2. Panels: Three-ply construction. Randomly finger-jointed blocks laminated with water-resistant glue.
   3. Interior Exposed Surfaces: Pine core veneered, pine glass stops.
   4. Exterior Surfaces: Clad with aluminum.
   5. Intermediate Bar: 5-1/4 inches high.
   6. Corners: Urethane-sealed and secured with metal fasteners.
   7. Sash Thickness: 2-1/16 inches (52 mm).

D. Weather Strip:
   1. Panel mounted, dual-durometer extruded polymer, one-piece design.

35.7 FABRICATION

A. Fabricate wood windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Fabricate wood windows that are reglazable without dismantling sash or ventilator framing.

C. Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator, unless otherwise indicated.

D. Factory machine windows for openings and for hardware that is not surface applied.

E. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.

F. Factory-Glazed Fabrication: Except for light sizes in excess of 100 united inches, glaze wood windows in the factory where practical and possible for applications indicated. Comply with requirements in Division 08 Section "Glazing" and with AAMA/WDMA 101/I.S.2/NAFS.

G. Glazing Stops: Provide nailed or snap-on glazing stops coordinated with Division 08 Section "Glazing" and glazing system indicated. Provide glazing stops to match sash and ventilator frames.

H. Provide wood windows in configuration indicated. Provide window frames, fixed and operating sash, operating hardware, and other trim and components necessary for a complete, secure, and weathertight installation, including the following:

1. Angled mullion posts with interior and exterior trim.
2. Angled interior and exterior extension and trim.
3. Clear pine head and seat boards.
4. Top and bottom plywood platforms.
5. Exterior head and sill casings and trim.
6. Support brackets.

I. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 36 - EXECUTION

36.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate, and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weathertight window installation.

1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
4. Proceed with installation only after unsatisfactory conditions have been corrected.

36.2 INSTALLATION

A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing windows, hardware, accessories, and other components.

B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

C. Set sill members in bed of sealant or with gaskets, as indicated, for weathertight construction.

D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

36.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and ventilators, screens, hardware, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

C. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

E. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

END OF SECTION

SECTION 08581 - CUSTOM STORM WINDOWS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Removable panel storm windows for interior application.

1.2 RELATED SECTIONS

A. Section 07900 - Joint Sealers.
B. Section 08800 - Glazing.

1.3 REFERENCES

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 1998.
B. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels; 1998.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.
B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Show dimensions, layout, profiles and product components; details of anchoring and fastening; sealants and weatherstripping; and recorded field measurements.

D. Finish Samples: Submit color samples, for approval by Architect, that represent the allowable range of finish established from production material specified.

E. Component Samples: If requested by Architect, submit samples of anchors, fasteners, hardware, assembled corner sections and other materials and components.

F. Operation and Maintenance Data: Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

G. Executed warranty documents specified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

1. Store inside, if possible, in a clean, well-drained area free of dust and corrosive fumes.
2. Stack vertically or on edge so that water cannot accumulate on or within materials. Use non-staining wood or plastic shims between components to provide water drainage and air circulation.
3. Cover materials with tarpaulins or plastic hung on frames to provide air circulation.
4. Keep water away from stored assemblies.

1.6 WARRANTY

A. Manufacturer's Warranty: Submit warranty against defects in materials and workmanship for period of 5 years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design Manufacturer: Allied Window, Inc., which is located at: 11111 Canal Rd. ; Cincinnati, OH 45241-1861; Toll Free Tel: 800-445-5411; Tel: 513-559-1212; Fax: 513-559-1883; Email: request info (info@alliedwindow.com); Web: www.alliedwindow.com

B. Substitutions: Requests for substitutions will be considered in accordance with provisions of Division 01.

2.2 STORM WINDOWS

A. Storm Windows - General: Provide units that fit existing windows without gaps of more than 1/8 inch (3 mm) in each unit.

1. Verify actual measurements of openings by field measurement before fabrication; show recorded measurements on shop drawings.
2. Allow for out-of-square and irregular conditions.
3. Verify frame and sill conditions of each opening before fabrication; provide appropriate fabrication details to suit existing conditions.

B. Removable Panel Storm Windows: Interior mounted, aluminum framed removable panel(s) in aluminum master frame; panels removable to interior.
1. Frame and Sash Sightline: 2-1/8 inch (54 mm) maximum.
2. Frame Thickness: 3/8 inch (9.5 mm).

3. Mounting: Interior.

a. Provide screen for operable panel.
b. Provide heavy duty spring loaded latches that engage at multiple sash positions for ventilation, and full width bottom rail lift handle.

4. Sill: Full width lift rail; flexible sill-seal weatherstripping.

2.3 COMPONENTS

A. Master Frame and Panel and Sash Frame Members: Extruded aluminum with wall thickness not less than 0.062 inches (1.6 mm); miter corners and join with corner keys.
1. Aluminum: 6063-T5 alloy and temper with minimum ultimate strength of 22,000 psi (152 MPa) and yield strength of 16,000 psi (110 MPa).
2. Corner Keys: Extruded aluminum.
3. Sill Expander: Where necessary to fit existing sloping sill, provide H-shaped member below master frame with weep holes.

4. Finish: Baked acrylic enamel, complying with AAMA 2603, electrostatically applied; 15 year warranty.

a. Color: To be selected from manufacture's full color range; two part, polyurethane finish, with 5-year warranty.

B. Screens: Extruded aluminum frame of same type of construction and finish as panel frames; screen cloth held in place with vinyl splines.
1. Frame Dimensions: 3/8 inch (9.5 mm) thick by 1-1/16 inches (27 mm) wide.

2. Screen Cloth: Aluminum wire, 18 by 16 mesh; charcoal color.

C. Fasteners: Zinc plated, cadmium plated or other non-corrosive metal compatible with aluminum.

D. Hardware: Nylon or zinc die-cast.

E. Glass Type: Annealed glass.

1. Thickness: 5/32 inch (4 mm).

F. Type: Tempered float glass, ASTM C1048, quality Q3. (where required)

1. Thickness: 5/32 inch (4 mm).
G. Glazing Gaskets: Removable and reusable virgin vinyl glazing splines with neatly mitered corners.
H. Weatherstripping: Pile type for operating units. Tracks lined with Stan-pro number 525-160, with Schlegel number 301-2432-500 at meeting rail.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 08711
DOOR HARDWARE (SCHEDULED BY DESCRIBING PRODUCTS)

PART 37 - GENERAL

37.1 RELATED DOCUMENTS

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

37.2 SUMMARY

A. This Section includes the following:

1. Commercial door hardware for the following:

a. Swinging doors.

2. Cylinders for doors specified in other Sections.

B. Related Sections include the following:

1. Division 08 Section "Hollow Metal Doors and Frames" for door silencers provided as part of hollow-metal frames.
2. Division 08 Section "Aluminum-Framed Entrances and Storefronts" for entrance door hardware, including cylinders.

C. Products furnished, but not installed, under this Section include the following. Coordinating, purchasing, delivering, and scheduling remain requirements of this Section.

1. Thresholds and weather stripping specified in other Sections.
2. Permanent cores to be installed by Owner.

37.3 SUBMITTALS

A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Samples for Initial Selection: For each finish, color, and texture required for each type of door hardware indicated.

C. Samples for Verification: For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Samples before, or concurrent with, submission of the final door hardware sets.

1. Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

D. Warranty: Special warranty specified in this Section.

E. Other Action Submittals:

1. Door Hardware Sets: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

a. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.
b. Content: Include the following information:

1) Identification number, location, hand and material of each door and frame.
2) Type, style, function, size, quantity, and finish of each door hardware item. Include description and function of each lockset and exit device.
3) Complete designations of every item required for each door or opening including name and manufacturer.
4) Fastenings and other pertinent information.
5) Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
6) Explanation of abbreviations, symbols, and codes contained in schedule.
7) Mounting locations for door hardware.
8) Door and frame sizes and materials.
9) List of related door devices specified in other Sections for each door and frame.

c. Submittal Sequence: Submit initial draft of final schedule along with essential Product Data to facilitate the fabrication of other work that is critical in Project construction schedule. Submit the final door hardware sets after Samples, Product Data, coordination with Shop Drawings of other work, delivery schedules, and similar information has been completed and accepted.

37.4 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.

1. Installer's responsibilities include supplying and installing door hardware, and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
2. Installer shall have warehousing facilities in Project's vicinity.

3. Scheduling Responsibility: Preparation of door hardware and keying schedules.
4. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

37.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

37.6 COORDINATION

A. Coordinate layout and installation of recesses with floor construction. Cast anchoring inserts into concrete.

B. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Existing Openings: Where new hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide for proper operation.

37.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including excessive deflection, cracking, or breakage.

b. Faulty operation of operators and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Three years from date of Substantial Completion, except as follows:

a. Manual Closers: 10 years from date of Substantial Completion.

PART 38 - PRODUCTS

38.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in this Section and door hardware sets indicated in Part 3 "Door Hardware Sets" Article.

1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated.

B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Sets" Article. Products are identified by descriptive titles corresponding to requirements specified in Part 2.

C. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

38.2 HINGES, GENERAL

A. Quantity: Provide the following, unless otherwise indicated:

1. Two Hinges: For doors with heights up to 60 inches.
2. Three Hinges: For doors with heights 61 to 90 inches.
3. Four Hinges: For doors with heights 91 to 120 inches.
4. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

C. Hinge Weight: Unless otherwise indicated, provide the following:

1. Entrance Doors: Heavy-weight hinges.
2. Doors with Closers: Antifriction-bearing hinges.
3. Interior Doors: Standard-weight hinges.

D. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Brass, with stainless-steel pin body and brass protruding heads.
2. Interior Hinges: Brass, with stainless-steel pin body and brass protruding heads.

E. Hinge Options: Where indicated in door hardware sets or on Drawings:

1. Hospital Tips: Slope ends of hinge barrel.
2. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors.
3. Corners: 1/4-inch radius.

F. Fasteners: Comply with the following:

1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
2. Screws: Phillips flat-head; machine screws (drilled and tapped holes) for metal doors. Finish screw heads to match surface of hinges.

38.3 HINGES

A. Template Hinge Dimensions: BHMA A156.7.

B. Available Manufacturers:

1. Hager Companies.
2. McKinney Products Company; an ASSA ABLOY Group company.
3. Stanley Commercial Hardware; Div. of The Stanley Works.

C. Antifriction-Bearing, Full-Mortise (Butt) Hinges: BHMA A156.1, heavy weight; Grade 1, with 4 ball bearings; button tips; nonrising removable pins; and base metal as follows:

1. Base Metal: Cast, forged, or extruded brass or bronze.

38.4 LOCKS AND LATCHES, GENERAL

A. Accessibility Requirements: Where indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.

B. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

C. Lock Trim:

1. Levers: Forged.
2. Escutcheons (Roses): Forged.

3. Dummy Trim: Match lever lock trim and escutcheons.
4. Lockset Designs: Standard-duty key-in levers, meeting A156.2 Series 4000, Grade 1.

D. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Bored Locks: Minimum 1/2-inch latchbolt throw.
2. Mortise Locks: Minimum 3/4-inch latchbolt throw.
3. Deadbolts: Minimum 1-inch bolt throw.

E. Rabbeted Meeting Doors: Provide special rabbeted front and strike on locksets for rabbeted meeting stiles.

F. Backset: 2-3/4 inches, unless otherwise indicated.

G. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, and as follows:

1. Strikes for Auxiliary Deadlocks: BHMA A156.5.
2. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
3. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
4. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.

38.5 AUXILIARY LOCKS AND LATCHES

A. Auxiliary Locks: BHMA A156.5, Grade 1.

1. Available Manufacturers:

a. ABLOY Security, Inc.; an ASSA ABLOY Group company.
b. Adams Rite Manufacturing Co.
c. Best Access Systems; Div. of The Stanley Works.
d. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
e. Schlage Commercial Lock Division; an Ingersoll-Rand Company.
f. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company.

2. Mortise Auxiliary Locks:

a. Material: Brass.
b. Deadlocks: Deadbolt operated by key outside and turn inside.
c. Deadlatches: Latchbolt and auxiliary deadlatch operated by key outside and turn inside.

38.6 DOOR BOLTS, GENERAL

A. Bolt Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Mortise Flush Bolts: Minimum 3/4-inch throw.

B. Manual Flush Bolts: BHMA A156.16, Grade 1; designed for mortising into door edge.

1. Available Manufacturers:

a. Adams Rite Manufacturing Co.
b. Glynn-Johnson; an Ingersoll-Rand Company.
c. Hager Companies.
d. IVES Hardware; an Ingersoll-Rand Company.
e. Stanley Commercial Hardware; Div. of The Stanley Works.
f. Trimco.

38.7 DOOR BOLTS

A. Manual-Extension Flush Bolts: Fabricated from extruded brass or aluminum, with 12-inch rod actuated by flat lever. Provide matching strike.

38.8 LOCK CYLINDERS

A. Standard Lock Cylinders: BHMA A156.5, Grade 1.

B. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:

1. Number of Pins: Five.
2. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.
3. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
4. Bored-Lock Type: Cylinders with tailpieces to suit locks.

a. High-Security Grade: BHMA A156.5, Grade 1A, listed and labeled as complying with pick- and drill-resistant testing requirements in UL 437 (Suffix A).

C. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.
2. Removable Cores: Core insert, removable by use of a special key; for use only with core manufacturer's cylinder and door hardware.

D. Construction Keying: Comply with the following:
1. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 2 construction master keys.

a. Replace construction cores with permanent cores as directed by Owner.
b. Furnish permanent cores to Owner for installation.

E. Manufacturer: Same manufacturer as for locks and latches.

38.9 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference, and as follows:

1. No Master Key System: Cylinders are operated by change keys only.
2. Keyed Alike: Key all cylinders to same change key.

B. Keys: Nickel silver.

1. Quantity: In addition to one extra key blank for each lock, provide the following:

a. Cylinder Change Keys: Three.

38.10 CLOSERS, GENERAL

A. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

1. Comply with the following maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.

B. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf to set door in motion and not more than 15 lbf to open door to minimum required width.

C. Flush Floor Plates: Provide finish cover plates for floor closers unless thresholds are indicated. Match door hardware finish, unless otherwise indicated.

D. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

E. Surface Closers: BHMA A156.4, Grade 1.Provide type of arm required for closer to be located on non-public side of door, unless otherwise indicated.

1. Available Manufacturers:

a. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
b. DORMA Architectural Hardware; Member of The DORMA Group North America.
c. Dor-O-Matic; an Ingersoll-Rand Company.
d. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
e. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
f. Yale Commercial Locks and Hardware; an ASSA ABLOY Group company.

38.11 CLOSERS

A. Traditional Surface Closers: Rack-and-pinion hydraulic type; with adjustable sweep and latch speeds controlled by key-operated valves; with forged-steel main arm; enclosed in a cast-aluminum alloy shell; complying with the following:

1. Mounting: Hinge side.
2. Type: Regular arm.
3. Backcheck: Adjustable, effective between 60 and 85 degrees of door opening.

38.12 STOPS AND HOLDERS, GENERAL

A. Stops and Bumpers: BHMA A156.16**,** Grade 1.

1. Provide floor stops for doors unless they will impede traffic. Otherwise, provide wall stops.

B. Silencers for Metal Door Frames: BHMA A156.16, Grade 1; neoprene or rubber, minimum diameter 1/2 inch; fabricated for drilled-in application to frame.

C. Available Manufacturers:

1. DORMA Architectural Hardware; Member of The DORMA Group North America.
2. Dor-O-Matic; an Ingersoll-Rand Company.
3. Glynn-Johnson; an Ingersoll-Rand Company.
4. Hager Companies.
5. IVES Hardware; an Ingersoll-Rand Company.
6. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
7. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
8. Stanley Commercial Hardware; Div. of The Stanley Works.
9. Trimco.

38.13 STOPS AND HOLDERS

A. Wall Bumpers: Polished cast brass or aluminum with rubber bumper; 2-1/2-inch diameter, minimum 3/4-inch projection from wall, with backplate for concealed fastener installation; with convex bumper configuration.

B. Dome-Type Floor Stops: Polished cast brass, bronze, or aluminum, with rubber bumper; and as follows:

1. Height: Minimum 1-3/8 inches high, for doors with threshold.
2. Riser: Extruded aluminum for carpet installations.

38.14 DOOR GASKETING, GENERAL

A. Standard: BHMA A156.22.

B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
2. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

C. Air Leakage: Not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.

D. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

E. Gasketing Materials: ASTM D 2000 and AAMA 701/702.

F. Available Manufacturers:

1. Hager Companies.
2. National Guard Products.
3. Pemko Manufacturing Co.
4. Zero International.

38.15 DOOR GASKETING

A. Spring-Metal Perimeter Gasketing: Metal gasket material fastened to frame rabbet with nails or screws.

1. Gasket Material: Minimum 0.008-inch- thick brass or bronze.

B. Door Sweeps: Gasket material held in place by flat metal housing or flange; surface mounted to face of door with screws.

1. Gasket Material: Nylon brush.
2. Housing Material: Bronze.

38.16 THRESHOLDS, GENERAL

A. Standard: BHMA A156.21.

B. Accessibility Requirements: Where thresholds are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."

1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.

C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.

D. Available Manufacturers:

1. Hager Companies.

2. National Guard Products.
3. Pemko Manufacturing Co.
4. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
5. Zero International.

38.17 THRESHOLDS

A. Saddle Thresholds: Type and base metal as follows:

1. Type: Thermal break and fluted top.
2. Base Metal: Aluminum.

38.18 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

C. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

38.19 FINISHES

A. Standard: BHMA A156.18, as indicated in door hardware sets.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance

of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 39 - EXECUTION

39.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

39.2 PREPARATION

A. Steel Doors and Frames: Comply with DHI A115 Series.

1. Surface-Applied Door Hardware: Drill and tap doors and frames according to ANSI A250.6.

39.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 09 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

39.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final

operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Unless otherwise required by authorities having jurisdiction, adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

39.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

39.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

39.7 DOOR HARDWARE SETS

A. Coordinate lock and entry access with individual owners.

<u>Door Hardware Set No. 1</u>
Each to have the following:

No.	Item	Description	Manuf.
3	Hinges	TA2714-4.5 x 4.5 -NRP	McKinney
1	Rim Exit Device	ED8200B – P857	Corbin-Russwin
1	Rim Cylinder	3090-318—L4 CMK	Corbin-Russwin
1	Closer	DC3201	Corbin-Russwin
1	Threshold	#8726A	Zero International
1	Kickplate	KO050-8”	Trimco
3	Silencers	1229A	Trimco
1	Wall or Floor Stop	1278CV	Trimco
1 Set Seals			

<u>Door Hardware Set No. 2</u>
Storefront Entrances to have the following:

1	Mortise Cylinder	1080-114-A01-CT6	Corbin-Russwin

(Balance of Hardware supplied by Storefront Supplier)

END OF SECTION

SECTION 08800
GLAZING

PART 40 - GENERAL

40.1 RELATED DOCUMENTS

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

40.2 SUMMARY

A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Doors.
2. Storefront framing.
3. Re-glazing of existing steel windows.

40.3 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

C. Interspace: Space between lites of an insulating-glass unit.

40.4 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Delegated Design: Design glass, including comprehensive engineering analysis according to ICC's 2003 International Building Code by a qualified professional engineer, using the following design criteria:

1. Design Wind Pressures: As indicated on Drawings.

2. Design Wind Pressures: Determine design wind pressures applicable to Project according to ASCE/SEI 7, based on heights above grade indicated on Drawings.
   a. Basic Wind Speed: 100 mph.
3. Vertical Glazing: For glass surfaces sloped 15 degrees or less from vertical, design glass to resist design wind pressure based on glass type factors for short-duration load.
4. Maximum Lateral Deflection: For glass supported on all four edges, limit center-of-glass deflection at design wind pressure to not more than 1/50 times the short-side length or 1 inch, whichever is less.
5. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

40.5 PRECONSTRUCTION TESTING

A. Preconstruction Adhesion and Compatibility Testing: Test each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

1. Testing will not be required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.
2. Use ASTM C 1087 to determine whether priming and other specific joint-preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
3. Test no fewer than eight Samples of each type of material, including joint substrates, shims, sealant backings, secondary seals, and miscellaneous materials.
4. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
5. For materials failing tests, submit sealant manufacturer's written instructions for corrective measures including the use of specially formulated primers.

40.6 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.

C. Product Certificates: For glass and glazing products, from manufacturer.

D. Preconstruction adhesion and compatibility test report.

E. Warranties: Sample of special warranties.

40.7 QUALITY ASSURANCE

A. Manufacturer Qualifications for Insulating-Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved and certified by coated-glass manufacturer.

B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

C. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

D. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.

E. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

F. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

   1. GANA Publications: GANA's "Laminated Glazing Reference Manual" and GANA's "Glazing Manual."
   2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

G. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

H. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

40.8 DELIVERY, STORAGE, AND HANDLING

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

B. Comply with insulating-glass manufacturer's written recommendations for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

40.9 PROJECT CONDITIONS

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

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

40.10 WARRANTY

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

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

B. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated-glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

   1. Warranty Period: Five years from date of Substantial Completion.

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

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

PART 41 - PRODUCTS

41.1 GLASS PRODUCTS, GENERAL

A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.

1. Minimum Glass Thickness for Exterior Lites: Not less than 6.0 mm.
2. Thickness of Tinted Glass: Provide same thickness for each tint color indicated throughout Project.

B. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass as needed. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass as needed. Where fully tempered glass is required, provide Kind FT heat-treated float glass.

C. Windborne-Debris-Impact Resistance: Provide exterior glazing that passes basic-protection testing requirements in ASTM E 1996 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the Project and shall be installed in same manner as glazing indicated for use on the Project.

1. Large-Missile Test: For glazing located within 30 feet of grade.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:

1. For monolithic-glass lites, properties are based on units with lites 6.0 mm thick.
2. For laminated-glass lites, properties are based on products of construction indicated.
3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
4. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F.
5. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
6. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

41.2 GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.

B. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
2. For uncoated glass, comply with requirements for Condition A.

3. For coated vision glass, comply with requirements for Condition C (other coated glass).

C. Film-Faced Polished Wired Glass: ASTM C 1036, Type II, Class 1 (clear), Form 1, Quality-Q6 and complying with testing requirements in 16 CFR 1201 for Category II materials.

1. Mesh: M1 (diamond).

41.3 LAMINATED GLASS

A. Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer or cast-in-place and cured-transparent-resin interlayer to comply with interlayer manufacturer's written recommendations.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: As selected by architect from manufacturer’s standard white and standard color (5 minimum) range.

41.4 INSULATING GLASS

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

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

B. Glass: Comply with applicable requirements in "Glass Products" Article and in "Laminated Glass" Article as indicated by designations in "Insulating-Glass Types" Article.

41.5 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:

1. Neoprene complying with ASTM C 864.
2. EPDM complying with ASTM C 864.
3. Silicone complying with ASTM C 1115.
4. Thermoplastic polyolefin rubber complying with ASTM C 1115.

41.6 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

G. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.

41.7 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.

C. Grind smooth and polish exposed glass edges and corners.

41.8 LAMINATED-GLASS TYPES

A. Glass Type: Clear laminated glass with two plies of heat-strengthened float glass.

1. Thickness of Each Glass Ply: 4.0 mm.
2. Interlayer Thickness: 0.060 inch.
3. Provide safety glazing labeling.

41.9 INSULATING-GLASS TYPES

A. Glass Type: Low-e-coated, tinted insulating glass. PPG SolarBan 60 is basis-of-design.

1. Overall Unit Thickness: 1 inch.
2. Thickness of Each Glass Lite: 6.0 mm.
3. Outdoor Lite: Tinted float glass.
4. Interspace Content: Argon.
5. Indoor Lite: Clear float glass.
6. Low-E Coating: Pyrolytic on second surface.
7. Visible Light Transmittance: 71 percent minimum.
8. Winter Nighttime U-Factor: .28 maximum.
9. Solar Heat Gain Coefficient: .39 maximum.
10. Provide safety glazing labeling.

PART 42 - EXECUTION

42.1 EXAMINATION

A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep systems.
3. Minimum required face and edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

42.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that will leave visible marks in the completed work.

42.3 GLAZING, GENERAL

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

B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where length plus width is larger than 50 inches.

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Set glass lites with proper orientation so that coatings face exterior or interior as specified.

K. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

L. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

42.4 GLAZING COMPOUND

A. Install all original & new glass into bed of acrylic-latex, siliconized caulking & secure with adequate glazing points. Install new glazing putty so that putty, at glass, is in the same sight plane as interior molding edge of sash.

42.5 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

C. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

42.6 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

42.7 GLAZING SCHEDULE

A. Glass types: (IGU = Insulating Glass Units)
   1. Glass 1 = 1/4" tempered clear (safety)
   2. Glass 2 = 1" IGU - low-e solar controlling glass. (exterior storefront UNO)
   3. Glass 3 = 3/16” – 1/4" glass (at existing steel windows only)
   4. Glass 4 = 3/16” – 1/4" wire glass (at existing steel windows only)
   5. Glass 5 = 3/16” – 1/4" safety wire glass (at existing steel windows only)

END OF SECTION

SECTION 09300

TILING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions.

1.2 SUMMARY

A. Section includes ceramic tile for exterior wall applications; using thin-set application method; and tiling accessories.

1.3 REFERENCES

A. American National Standards Institute:
1. ANSI A108.1 - Installation of Ceramic Tile, A collection.
2. ANSI A108.10 - Specifications for Installation of Grout in Tilework.
3. ANSI A108.5 - Specifications for Ceramic Tile Installed with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
4. ANSI A118.1 - Standard Specification for Dry-Set Portland Cement Mortar.
5. ANSI A118.3 - Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy Adhesive.
6. ANSI A118.4 - Latex-Portland Cement Mortar.
7. ANSI A118.6 - Ceramic Tile Grouts.
8. ANSI A118.7 Polymer-Modified Grout
9. ANSI A118.15 Modified Dry-Set Cement Mortar
10. ANSI A137.1 - Ceramic Tile.

B. Tile Council of America:
1. TCA - Handbook for Ceramic Tile Installation. Use recommendations from latest addition

C. American Society for Testing and Materials (ASTM)

1. ASTM C1026- Standard Test Method for Measuring the Resistance of Ceramic and Glass Tile to Freeze-Thaw Cycling, is the test standard for tile used in freeze/thaw conditions.

1.4 DEFINITIONS

A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.

B. Facial Dimension: Actual tile size (minor facial dimension as measured per ASTM C 499).

C. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.5 SUBMITTALS

A. Product Data: For each type of tile, mortar, grout, and other products specified.

B. Tile Samples for Verification: One each item listed below, prepared on Samples of size and construction indicated. Where products involve normal color and texture variations, include Sample sets showing the full range of variations expected.

C. Grout Samples for Initial Selection: Manufacturer's color charts consisting of actual selections of grout showing the full range of colors available for each type of grout indicated.

D. Product Certificates: Signed by manufacturers certifying that the products furnished comply with requirements.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Source Limitations for Tile: Obtain each color, grade, finish, type, composition, and variety of tile from one source.

C. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source of producer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements of ANSI A137.1 for labeling sealed tile packages.

B. Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained to comply with referenced standards and manufacturer's written instructions.

1.9 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
   1. Tile and Trim Units: Furnish quantity of full-size units equal to 2 percent of amount installed, for each type, composition, color, pattern, and size indicated. Provide letter of transmittal for new package and labeled extra stock. Not to be used for punch list items.

PART 2 PRODUCTS

2.1 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
   1. Provide tile complying with Standard Grade requirements, unless otherwise indicated.
   2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting Materials" and "Grouting Materials" articles.

C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
   1. Provide full range of manufacturer's colors, textures, and patterns.

2.2 CERAMIC/ PORCELAIN TILE/ GLASS/ METAL/ NATURAL STONE

A. Manufacturers:

1. Dal-Tile International, www.daltile.com*
2. GPS Tile, Mosaic Tile Company, www.mosaictileco.com**
3. American Olean, Morris Tile Company, www.morristile.net ***

* Contact Dorianne Torrice: 804.840.4003, mail to: dorianne.torrice@daltile.com
**Contact Ann Hartley: 336-339-5093, mail to: ahartley@mosaictileco.com

*** Contact Dan Rogers: 804-370-1486, mail to: dan.rogers@morristile.net

2.3 COMPONENTS

A. Porcelain Wall Tile (Suitable for Exterior Applications): ANSI C1026, conforming to the following:
1. Porosity <.5%
2. Size: 4-1/4 x 4-1/4 x 5/16 inch
3. Shape: Square.
4. Edge: Cushioned.
5. Surface Finish: Matte glazed
6. Color: To Be Determined
   a. Field Tile: Type III

2.4 ACCESSORIES

A. Mortar Materials:
1. Mortar Bond Coat Materials:
   a. Modified Dry-Set Cement type: ANSI A118.15. (use for wall tile)

Grout Materials:

2. Standard Grout: Polymer Modified Sand-Portland as specified in ANSI A118.7. (use for wall tile)
   a. Color: As selected from manufacturer's full range
3. Penetrating Sealer:

B. Trim Units:

1. Size: 1" x 1" Corner-guards Clear Satin Stainless Steel Corner guards at external corners—full height of tile.

2. Shapes: As follows, selected from manufacturer's standard shapes:

   a. Internal Corners: Field-butted square corners.

C. Waterproof and Crack Isolation Membrane: type recommended by manufacturer for exterior wall tile applications.

2.5 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturer's written instructions to accommodate tile(s) specified.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
   1. Verify that substrates for setting tile are firm; dry; clean; free from oil; waxy films, and curing compounds unless otherwise indicated; and within flatness tolerances required by referenced ANSI A 108.5 series of tile installation standards for installations indicated.
   2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile have been completed before installing tile.
   3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust latter in consultation with Architect.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove coatings, including curing compounds, and other substances that contain soap, wax, oil, or silicone and are incompatible with tile-setting materials by using a terrazzo or concrete grinder, a drum sander, or a polishing machine equipped with a heavy-duty wire brush.

B. Use trowellable leveling and patching compounds per tile-setting material manufacturers written instructions to fill cracks, holes, and depressions.

C. Remove protrusions, bumps, and ridges by sanding or grinding.

3.3 INSTALLATION, GENERAL

A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 series of tile installation standards in “Specifications for Installation of Ceramic Tile” that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.

B. TCA Installation Guidelines: TCA’s “Handbook for Ceramic Tile Installation.” Comply with TCA Installation methods indicated in ceramic tile installation schedules.

C. Extend tile work into recesses and behind equipment and fixtures to form a complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

E. Jointing Pattern:
   1. Lay Ceramic tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are the same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Provide uniform joint widths, unless otherwise indicated.

F. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, in locations in accordance with manufacturer’s recommendations during installation of setting materials and tile. Do not saw-cut joints after installing tiles.

G. Grout tile to comply with the requirements of the following tile installation standards:
   1. Polymer Modified Sanded Grout for Exterior Application, comply with ANSI A118.7.

3.4 ACCESSORIES INSTALLATION

3.5 WALL TILE INSTALLATION

A. Install types of tile designated for wall installations to comply with requirements in the Ceramic Tile Wall Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.

B. Joint Widths: Install tile on walls with the following joints widths:
   1. Glazed Wall Tile: 1/16 inch.
   2. Porcelain Tile: Nominal 1/16” joint unless otherwise indicated on drawings.

3.6 WATERPROOF MEMBRANE INSTALLATION

A. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.

3.7 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
   1. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer’s written instructions, but no sooner than 10 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.

B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, un-bonded, and otherwise defective tile work.

C. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer that ensure tile is without damage or deterioration at the time of Substantial Completion.
   1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
   2. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

E. Grout tile joints. Use standard grout at all wall tile.

F. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.8 CLEANING

A. Clean tile and grout surfaces.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Protect installed construction.

END OF SECTION

SECTION 09400
TERRAZZO (REPAIR)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUBMITTALS

A. Product Data: Submit Manufacturer's technical information and installation instructions for each type of terrazzo, accessory items, and materials.

B. Certification: Submit manufacturer's written certification that terrazzo materials meet or exceed specified NTMA properties.

C. Samples: Match existing adjacent terrazzo in pattern and color; submit two 6" square samples of each pattern of terrazzo.

1.3 QUALITY ASSURANCE

A. NTMA Standards: Comply with specified provisions and recommendations of National Terrazzo and Mosaic Association, Inc. (NTMA), as outlined in the "Terrazzo Specifications and Design Guide" (available at www.ntma.com).

PART 2 - PRODUCTS

2.1 CEMENTITIOUS TERRAZZO MATERIALS

A. Portland Cement: ASTM C 150, Type I, except as modified to comply with NTMA requirements for compressive strength. Obtain cement from a single source for each required color.

1. Provide non-staining white cement for terrazzo matrix.

2. Provide standard gray cement for underbed.

B. Sand: Comply with ASTM C 33.

C. Water: Clean, potable, free of oil, soluble salts or other deleterious substances.

D. Aggregate: Natural, sound, crushed marble chips without excessive flats or flakes, complying with NTMA requirements. TERRAZZO (REPAIR) SECTION

09400 09400-2 11/13 1. Colors and gradation of aggregate sizes, as required, to match the existing terrazzo.

E. Matrix Pigments: Pure mineral or synthetic pigments, resistant to alkalis and non-fading. Mix pigments with matrix to provide required colors.

F. Underbed Reinforcement: Galvanized welded wire fabric, 2" X 2" WO.3 X WO.3 (16 ASW gage or 0.0625" diameter); comply with ASTM A 185 and ASTM A82, except for minimum wire size. G. Curing Compound: Liquid-membrane-forming compound, ASTM C 309, Type 1. 2.02 TERRAZZO ACCESSORIES A. Divider Strips: Depth and style required for terrazzo type and thickness. Width, material and color as indicated. Angle or "T"-type for adhesive bonding to substrate.

1. Unless otherwise indicated, use white zinc alloy divider strips with 1/4" wide top.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean and prepare substrate to comply with NTMA specifications for type of terrazzo application indicated. Clean substrate of loose chips and foreign matter. Grind concrete substrate to provide surfaces within tolerances required by NTMA for type of terrazzo application.

3.2 INSTALLATION, GENERAL

A. For cementitious terrazzo, comply with NTMA recommendations for proportioning mixes, installation of strips, and for placing, curing, grinding, grouting and finishing.

B. Place and finish terrazzo around obstructions to achieve continuous color, pattern and finish.

C. Install divider and accessory strips in adhesive setting bed, in accordance with manufacturer's instructions, without voids below strips. Provide mechanical anchorage as required for adequate attachment of strips to substrate.

3.3 CEMENTITIOUS TERRAZZO

A. Terrazzo: Comply with NTMA Technical Manual. Prepare sub-slab surfaces to insure TERRAZZO (REPAIR) SECTION 09400 09400-3 11/13 positive bonding with underbed. Thoroughly clean areas of foreign matter immediately before placing bond coat. Place underbed while bond coat is still plastic.

B. Surfacing: Grout cured terrazzo topping in accordance with NTMA specifications. Delay grinding and finishing until heavy trade work is completed and construction traffic through the area is restricted. Finish by fine grinding with abrasive grit of

size specified by NTMA, or as otherwise required to match existing adjacent terrazzo.

3.4 CLEANING, SEALING, AND PROTECTION

A. Clean terrazzo after installation and finishing operations are completed, complying with sealer manufacturer's instructions.

B. Apply sealer to cleaned terrazzo surfaces to comply with sealer manufacturer's instructions.

C. Protect terrazzo from damage and wear during construction operations and until formally accepted by owner.

3.5 FINAL CLEANING

A. Clean terrazzo as recommended by manufacturer of sealer and machine buff when area is ready for occupancy.

END OF SECTION

SECTION 09911
EXTERIOR PAINTING

PART 43 - GENERAL

43.1 RELATED DOCUMENTS

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

43.2 SUMMARY

A. This Section includes surface preparation and the application of paint systems on the following exterior substrates:

1. Concrete.
2. Concrete masonry units (CMU).
3. Steel.
4. Wood.
5. Exterior portland cement (stucco).

B. Related Sections include the following:

1. Division 05 Sections for shop priming of metal substrates with primers specified in this Section.
2. Division 08 Sections for factory priming windows and doors with primers specified in this Section.

43.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of topcoat product indicated.

43.4 QUALITY ASSURANCE

A. MPI Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

43.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

43.6 PROJECT CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

43.7 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 qt of each material and color applied.

PART 44 - PRODUCTS

44.1 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

B. Colors: As selected by Architect from manufacturer's full range

44.2 PRIMERS/SEALERS

A. Alkali-Resistant Primer: MPI #3.

1. VOC Content: E Range of E1.

B. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

44.3 METAL PRIMERS

A. Alkyd Anticorrosive Metal Primer: MPI #79.

1. VOC Content: E Range of E1.

44.4 WOOD PRIMERS

A. Exterior Alkyd Wood Primer: MPI #5.

1. VOC Content: E Range of E2.

B. Exterior Oil Wood Primer: MPI #7.

1. VOC Content: E Range of E2.

44.5 EXTERIOR LATEX PAINTS

A. Exterior Latex (Flat): MPI #10 (Gloss Level 1).

1. VOC Content: E Range of E1.

B. Exterior Latex (Semigloss): MPI #11 (Gloss Level 5).

1. VOC Content: E Range of E1.

C. Exterior Latex (Gloss): MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

1. VOC Content: E Range of E1.

44.6 EXTERIOR ALKYD PAINTS

A. Exterior Alkyd Enamel (Flat): MPI #8 (Gloss Level 1).

1. VOC Content: E Range of E1.

B. Exterior Alkyd Enamel (Semigloss): MPI #94 (Gloss Level 5).

1. VOC Content: E Range of E1.

C. Exterior Alkyd Enamel (Gloss): MPI #9 (Gloss Level 6).

1. VOC Content: E Range of E1.

PART 45 - EXECUTION

45.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Wood: 15 percent.
3. Plaster: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

45.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.

G. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

H. Plaster Substrates: Do not begin paint application until plaster is fully cured and dry.

45.3 APPLICATION

A. Apply paints according to manufacturer's written instructions.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

45.4 FIELD QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will perform tests for compliance of paint materials with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove

noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

45.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

45.6 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex Over Alkali-Resistant Primer System: MPI EXT 3.1K.

   a. Prime Coat: Alkali-resistant primer.
   b. Intermediate Coat: Exterior latex matching topcoat.
   c. Topcoat: Exterior latex (semigloss).

B. CMU Substrates:

1. Latex Over Alkali-Resistant Primer System: MPI EXT 4.2L.

   a. Prime Coat: Alkali-resistant primer.
   b. Intermediate Coat: Exterior latex matching topcoat.
   c. Topcoat: Exterior latex (semigloss).

C. Steel Substrates:

1. Alkyd System: MPI EXT 5.1D.

   a. Prime Coat: Alkyd anticorrosive metal primer.
   b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
   c. Topcoat: Exterior alkyd enamel (semigloss).

D. Dressed Lumber Substrates: Including architectural woodwork, doors.

1. Latex Over Alkyd Primer System: MPI EXT 6.3A.

a. Prime Coat: Exterior alky wood primer.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (gloss).

E. Wood Panel Substrates: Including siding, fascias and soffits.

1. Latex Over Alkyd Primer System: MPI EXT 6.4G.

a. Prime Coat: Exterior alkyd wood primer.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (semigloss).

F. Dimension Lumber Substrates, Nontraffic Surfaces: Including board siding.

1. Latex Over Alkyd Primer System: MPI EXT 6.2A.

a. Prime Coat: Exterior alky wood primer.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (semigloss).

G. Stucco Substrates:

1. Latex System: MPI EXT 9.1A.

a. Prime Coat: Exterior latex matching topcoat.
b. Intermediate Coat: Exterior latex matching topcoat.
c. Topcoat: Exterior latex (semigloss).

END OF SECTION

SECTION 10731
AWNINGS

PART 46 - GENERAL

46.1 RELATED DOCUMENTS

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

46.2 SUMMARY

A. This Section includes the following:

1. Fixed awnings.
2. Retractable awnings, manually operated.

B. Related Sections include the following:

1. Division 05 Section "Metal Fabrications" for blocking, shims, reinforcing, and supplemental support members for connecting to awning frame and anchorage.
2. Division 06 Section "Rough Carpentry" for blocking, nailers, shims, reinforcing, framing, and furring for connecting to awning frame and anchorage.

46.3 DEFINITIONS

A. Awning: An architectural projection that provides weather protection, identity, or decoration and is wholly supported by the building to which it is attached. An awning is comprised of a lightweight, rigid skeleton structure over which a rigid covering is attached.

B. Retractable Awning: A cover with a frame that retracts against a building or other structure to which it is entirely supported.

46.4 PERFORMANCE REQUIREMENTS

A. General: Design, fabricate, and install awnings to withstand loads from gravity, wind, snow**,** ponding, drift, and structural movement, including thermally induced movement; and to resist, without failure, other conditions of in-service use, including exposure to weather.

B. Structural Performance: Provide awnings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Wind Loads: Determine loads based on the following minimum design wind pressures:

    a. Uniform pressure of 20 lbf/sq. ft., acting upward or downward.

C. Thermal Movements: Provide awnings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, tearing of fabric, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

46.5 SUBMITTALS

A. Product Data: Include styles, material descriptions, construction details, fabrication details, dimensions of individual components and profiles, hardware, fittings, mounting accessories, features, finishes, and operating instructions for awnings.

B. Shop Drawings: Show location and extent of awnings. Include elevations, sections, and details not shown in Product Data. Show materials, fabrication, dimensions, mounting heights, connections, anchorages, installation details, attachments to other work, operational clearances, and relationship to adjoining work. Show colors and graphic layout and content.

1. Show locations for blocking, reinforcement, and supplementary structural support to be provided by others.
2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation. Calculate requirements for supporting awnings. Verify capacity of members and connections to support loads and verify loads, point reactions, and locations for attachment of awnings to structure with those indicated on Drawings.
3. Graphics: Show text message, font, character sizes, and other graphic forms, character spacing, word spacing, line spacing, margin widths, position of copy, and other information related to graphic design.

C. Samples for Initial Selection: For each colored or finished component of each type of awning indicated.

1. Include Samples of graphics on fabric.
2. Include similar Samples of accessories involving color selection.

D. Maintenance Data: For awnings to include in maintenance manuals. Include the following:

1. Methods for maintaining awning fabrics and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to fabrics, finishes, and performance.
3. Operating hardware.

E. Warranty: Special warranty specified in this Section.

46.6 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of awnings.

B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

1. Fabricator is a Master Fabric Craftsman certified by the Industrial Fabrics Association International.
2. Fabricator's responsibilities include fabricating and installing awnings and providing professional engineering services needed to assume engineering responsibility.

C. Source Limitations: Obtain awnings through one source from a single manufacturer.

D. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.2, "Structural Welding Code--Aluminum."

E. Regulatory Requirements: Provide awnings complying with or exceeding requirements of the 2006 Virginia Uniform Statewide Building Code (VUSBC), effective May 1, 2008.

F. Fire-Test-Response Characteristics: Provide awning fabrics with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Flame-Resistance Ratings: Passes NFPA 701.
2. Permanently attach label to each awning fabric indicating whether fabric is inherently and permanently flame resistant, or treated with flame-retardant chemicals, and whether it will require retreatment after designated time period or cleaning.

46.7 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit installation of awnings in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.

B. Field Measurements: Where awning installation is indicated to fit to other work, verify dimensions of other work by field measurements before fabrication and indicate measurements on Shop Drawings. Allow clearances for fenestration operation throughout the entire operating range. Notify Architect of discrepancies. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

46.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer and fabricator agree to repair or replace components of awnings that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including framework.
b. Deterioration of fabric including seam failure.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Awning Warranty Period: Five years from date of Substantial Completion.
3. Fabric Warranty Period: Five years from date of Substantial Completion.
4. Thread Warranty Period: Five years from date of Substantial Completion.
5. Graphics Warranty Period: Outdoor durability not less than five years from date of Substantial Completion.

PART 47 - PRODUCTS

47.1 AWNING FABRICS

A. Fabric Fiber Content: Solution-dyed acrylic.
1. 9.25 ounces per sq. yd.
2. 46 or 60 inches wide

B. Style:
1. Bottom Hem: Straight or scalloped, as selected by Owner.
2. Color: As selected by Owner from manufacturer's full range, including solids and stripes.
3. Applied Treatment: Mildew resistant and Water repellent
4. Performance Characteristics: As follows:

a. Mildew Resistance: Showing no growth when tested per ASTM G 21.
b. Shrinkage: Not greater than 1 percent per ASTM D 1204.
c. Stretch Factor: Not less than 1 percent per ASTM D 4851.

C. Graphic Application: Silk-screen printing.

1. Text Message: As provided by Owner.

a. Text Font: Helvetica.
b. Character Size: Minimum 4-inch- high characters.
c. Character Colors: White typically, black on very light substrates.

D. Thread: 100 percent bonded polyester, UV-light, mildew, and rot resistant.

47.2 AWNING FRAMES

A. Aluminum Frames: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability properties of alloy and temper required by structural loads.

1. Aluminum Plate and Sheet: ASTM B 209.
2. Aluminum Extrusions: ASTM B 221.
3. Extruded Structural Pipe and Round Tubing: ASTM B 429, standard weight (Schedule 40) unless another weight is indicated or required by structural loads.
4. Drawn Seamless Tubing: ASTM B 210.
5. Aluminum Finish: Mill finish complying with finish manufacturer's written instructions for surface preparation including pretreatment, application, baking, and minimum dry film thickness.

B. Anchors, Fasteners, Fittings, Hardware, and Installation Accessories: Complying with performance requirements indicated and suitable for exposure conditions, supporting structure, anchoring substrates, and installation methods indicated. Corrosion-resistant or noncorrodible units; weather-resistant, tamperproof, vandal- and theft-resistant, compatible, nonstaining materials. Provide as required for awning assembly, mounting, and secure attachment. Number as needed to comply with performance requirements and to maximize appearance; evenly spaced. Where exposed to view, with finish and color as selected by Architect from manufacturer's full range.

1. Wood Screws: ASME B18.6.1.
2. Lag Bolts: ASME B18.2.1.
3. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
4. Adhesive-Bonded Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 1512 conducted by a qualified independent testing and inspecting agency.

   a. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

5. Grommets: Stainless steel, No. 2.

   a. Grommet Spacing: 6-inch o.c.

6. Lacing: 100 percent polyester, braided No. 4.

C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

47.3 AWNING FABRICATION

A. Fabrics: Reinforce wear points and hardware attachment points with nonwoven webbing.

1. Fabric Edges and Seams: Adhesively bonded.
2. Fabric Edges and Seams: Manufacturer's standard hemming and seaming methods.

B. Frames: Preassemble awning frames in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

1. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
2. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Fabricate slip-fit connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
4. Weld corners and connections continuously. Obtain fusion without undercut or overlap. Remove welding flux immediately. At exposed corners and connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
5. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications in place and to properly transfer loads.

C. Colors of Metal and Plastic Components Exposed to View: Matching or coordinating with awning fabric color.

47.4 RETRACTABLE AWNING OPERATORS

A. Manual Operation: With gear and crank operator.

1. Manual Operation Assist Mechanism: Manufacturer's standard spring assist for operating heavy awnings.
2. Crank Handle: One, detachable.
3. Operating Function: Stop and hold awning at any position in ascending or descending travel.

PART 48 - EXECUTION

48.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for supporting members, blocking, inserts, installation tolerances, operational clearances, and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

48.2 INSTALLATION, GENERAL

A. General: Install awnings at locations and in position indicated, securely connected to supports, free of rack, and in proper relation to adjacent construction. Use mounting methods of types described and in compliance with Shop Drawings and fabricator's written instructions.

B. Install awnings after other finishing operations, including joint sealing and painting, have been completed.

C. Attach fabric to frames as recommended by fabricator, using lacing method as required to conceal ends of lacing or using fabric hem pockets to ensure tight, wrinkle-free fit of fabric to frame.

D. Slip fit frame connections accurately together to form hairline joints and tighten to secure.

E. Weld frame connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.

1. Field Welding: Comply with the following requirements:

a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
b. Obtain fusion without undercut or overlap.
c. Remove welding flux immediately.
d. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Anchoring to In-Place Construction: Use anchors, fasteners, fittings, hardware, and installation accessories where necessary for securing awnings to structural support and for properly transferring load to in-place construction.

G. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

H. Coordinate awning installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed exterior wall and roof assemblies.

48.3 CLEANING AND PROTECTION

A. Clean awning surfaces after installation, according to manufacturer's written instructions.

B. Touchup Painting: Immediately after erection, clean field welds, connections, and abraded areas. Paint uncoated and abraded areas with same or compatible material as used for shop-applied finish painting.

1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

C. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that awnings are without damage or deterioration at time of Substantial Completion.

D. Replace damaged awnings that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

48.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain awnings. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION