



ROANOKE COUNTY

FINANCE & MANAGEMENT SERVICES DEPARTMENT PURCHASING DIVISION

INVITATION FOR BID

IFB # 2023-023

Cave Spring Fire Station Roof Replacement

OPENING DATE: August 26, 2022
OPENING TIME: 2:00 P.M.

The Invitation to Bid and related documents may be obtained during normal business hours from the Purchasing Division, at the Roanoke County Administration Building, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018. This document may be viewed and/or downloaded from the County of Roanoke Purchasing Division's website at <https://www.roanokecountyva.gov/bids.aspx>. If you have any problems accessing the documents, you may contact Purchasing at (540) 772-2061.

A non-mandatory pre-bid conference will be held at 9:00 AM on August 18, 2022 at the project site (4212 Old Cave Spring Road, Roanoke VA 24018).

**THIS PUBLIC BODY DOES NOT DISCRIMINATE
AGAINST FAITH-BASED ORGANIZATIONS**

DATE of IFB: August 9, 2022

INVITATION FOR BID (IFB)

IFB No. 2023-023
Issue Date: August 9, 2022
Due Date: August 26, 2022
Title: Cave Spring Fire Station Roof Replacement

Issued By: **County of Roanoke**
Roanoke County Administration Building
Purchasing Division
5204 Bernard Drive, SW, Suite 300-F
Roanoke, VA 24018-0798
Phone (540) 772-2061
Email: KHoyt@roanokecountyva.gov

Sealed Bids will be received on or before 2:00 P.M., August 26, 2022 for furnishing the services and/or items described herein. The time of receipt shall be determined by the time clock stamp in the Purchasing office.

All questions must be submitted *in writing* before 5:00 p.m., **August 19, 2022**. Questions should be sent to Kate Hoyt at KHoyt@roanokecountyva.gov. If necessary, an addendum will be issued and posted to the County website on the Current Bids/RFP Requests tab at <https://www.roanokecountyva.gov/bids.aspx>.

If proposals are hand delivered or mailed, send directly to the Purchasing Division at the address listed above. If the Roanoke County Administration 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 County, at the originally scheduled hour.

THIS PUBLIC BODY DOES NOT DISCRIMINATE AGAINST FAITH-BASED ORGANIZATIONS.

The County reserves the right to cancel this IFB and/or reject any or all proposals and to waive any informalities in any proposal.

This section is to be completed by the Offeror and this page must be returned with the bid. In compliance with this Invitation For Bid and subject to all terms and conditions imposed herein, which are hereby incorporated herein by reference, the undersigned offers and agrees to furnish the services and/or items requested in this solicitation if the undersigned is selected as the successful Bidder. No Bid may be withdrawn within a period of sixty (60) days after Bid opening except for clerical errors, as set forth in part (1) of Section 2.2-4330(B), Virginia Code, 1950, as amended. Notices of bid withdrawal must be submitted in writing to the Purchasing Division.

My signature certifies that the bid as submitted complies with all requirements specified in this Invitation for Bid ("IFB"). If this Bid is accepted by the County, to provide the services and/or items in accordance with this Invitation for Bid and to execute a Contract/Purchase Order substantially similar to the attached Contract/Purchase Order Terms and Conditions for such services and/or items. My signature also certifies that by submitting a bid in response to this IFB, the Bidder represents that in the preparation and submission of this bid, the Bidder did not, either directly or indirectly, enter into any combination or arrangement with any person or business entity, or enter into any agreement, participate in any collusion, or otherwise take any action in the restraining of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1) or Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

I hereby certify that I am authorized to sign as a legal representative for the business entity submitting this bid.

Legal Name and Address of Firm:

_____ Date: _____

_____ By: _____
(Signature in Ink)

_____ Name: _____
(Please Print)

_____ Zip: _____ Title: _____

Phone: _____ FAX: _____

Email: _____ Business License# _____

Virginia State Corporation Commission Identification Number: _____

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COUNTY OF ROANOKE, VIRGINIA
INVITATION FOR BID NO. 2023-023
Cave Spring Fire Station Roof Replacement

SECTION 1. PURPOSE

The purpose of this Invitation for Bid (IFB) is the procurement of a contract for replacement of the roof at the Cave Spring Fire Station located at 4212 Old Cave Spring Road, Roanoke VA 24018.

The County of Roanoke invites any qualified Bidder to respond to this IFB by submitting a Bid for such work, service, and/or items consistent with the terms and conditions herein set forth.

SECTION 2. BACKGROUND

Not used.

SECTION 3. SERVICES AND/OR ITEMS REQUIRED

A description and/or listing of the services and/or items that the Successful Bidder will be required to provide to the County under this IFB are those that are set forth below and/or referred to in any way in the sample contract, any terms and conditions, and/or any attachments referred to in this IFB. Each Bidder should carefully read and review all such documents.

The following are the services and/or items that the Successful Bidder shall provide to the County of Roanoke:

- A. Replacement of the roof at 4212 Old Cave Spring Road, Roanoke VA 24018.
 - a. Project Plans are provided as Attachment E to this IFB.
 - b. Project Manual, prepared by Balzer and Associates, Inc. and dated July 26, 2022, is provided as Attachment F to this IFB. This Project Manual provides the project specifications and scope to which bidders must adhere.
 - c. Asbestos & Lead Inspection Report dated June 13, 2022 is provided as Attachment G to this IFB.
 - d. Asbestos & Lead Inspection Report dated July 29, 2022 is provided as Attachment H to this IFB. This secondary report offers results of interior sampling as it affects the project scope.
 - e. Due to the nature of the public safety facility, the building must remain fully operational during the course of the project.

SECTION 4. REQUIRED QUALIFICATIONS FOR BIDDERS

Not used.

SECTION 5. TERM OF CONTRACT OR TIME OF PERFORMANCE OR NOT USED

- A. The Successful Bidder shall start the performance of any resultant Contract as fixed by a notice to proceed given by the County to the Successful Bidder, and fully and completely perform the Contract in accordance with the Contract provisions. No liquidated damages will be applied for this Contract.
- B. All terms and conditions shall remain in force for the term of the Contract and for any renewal or extension period unless modified by mutual agreement of both parties. Prices shall not be increased during the initial term of the Contract. Prices for any renewal periods will be subject to the mutual agreement of both parties.

SECTION 6. PAYMENT FOR SERVICES

Payment(s) to the Successful Bidder shall be made in accordance with the provisions of the resultant Contract, subject to final approval by the County.

SECTION 7. GENERAL INSTRUCTIONS TO BIDDERS

- A. Bids, to be considered, must be received by the County of Roanoke Purchasing Division, at the Roanoke County Administration Building, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018, at or before 2:00 p.m., local time, on August 26, 2022, 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.

Each Bid, **one (1) original, marked as such** and **one (1) copy, marked as such**, must be appropriately signed by an authorized representative of the Offeror, and must be submitted in a **SEALED** envelope or package. A removable media storage device containing two (2) digital copies of the proposal, one as submitted, and one **redacted to remove all confidential and proprietary material**, must be included in the proposal packet. The notation "**Cave Spring Fire Station Roof Replacement**", **IFB No. 2023-023**, the Bidder's name, and the specified opening time and date must be clearly marked on the front of that sealed envelope or package.

FAXED OR E-MAILED BIDS ARE NOT ACCEPTABLE.

The Invitation for Bid and related documents may be obtained during normal business hours from the Purchasing Division, at the Roanoke County Administration Building, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018. This document may be viewed and/or downloaded from the County of Roanoke Purchasing Division's website at <https://www.roanokecountyva.gov/bids.aspx>.

If you have any problems accessing the documents, you may contact Purchasing at (540) 772-2061.

If proposals are hand delivered or mailed, send directly to the Purchasing Division at the address listed above. If the Roanoke County Administration Building is closed for business at the time scheduled for the Bid opening, the sealed bid will be accepted and opened on the next business day of the County, at the originally scheduled hour.

All questions must be submitted before 5:00 P.M. on August 19, 2022. If necessary, an addendum will be issued and posted to the County website on the Current Bids/RFP Requests tab at <https://www.roanokecountyva.gov/bids.aspx>.

A non-mandatory pre-bid conference will be held at 9:00 AM on August 18, 2022, at 4212 Old Cave Spring Road, Roanoke VA 24018.

- B. If you download this IFB from the County 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 IFB 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. The County Purchasing Division or its designee will issue Addenda that will be posted to the County website on the Current Bid Opportunities tab at <https://www.roanokecountyva.gov/bids.aspx>.

C. **IMPORTANT NOTICE - ADDENDUMS AND NOTICES OF AWARD**

Vendors may visit <http://roanokecountyva.gov/list.aspx> to sign up to receive emails or text message notices about bids, proposals, addendums, bid tabulation and awards. Vendors can sign up to receive notification in selected commodity/service categories. It is the vendor's responsibility to keep information current in the system in order to receive the notifications. The sign up only requires an email address and/or a cell phone number for receiving text messages (if your phone is capable) and your choice of categories.

Although '**Notify Me**' will be the only way to receive automatic notification, all BIDS/RFP Information will continue to be posted on our website, and can be picked up at the Purchasing Division, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018. Phone # (540) 772-2061.

The County is not responsible for any IFB obtained from any source other than the County. Contact Kate Hoyt, by phone at 540-283-8149, or by email at KHoyt@roanokecountyva.gov.

- D. Payment terms and delivery date(s) must be shown on the submitted Bid, if applicable.
- E. All Bids are to be submitted in accordance with all terms, conditions, rules, regulations, requirements and specifications identified in and by this IFB.
- F. Bids are to be on the Form as provided with OR as otherwise specified in this IFB. If a Bid Form is provided, *no changes are to be made to the Bid Form*. Any changes to Bid amounts must be initialed.
- G. All Bids shall be signed by a person on behalf of the responding Bidder who is appropriately authorized to do so. The printed name of that authorized person should be

shown as well. Any Bid submitted should be in the complete legal name of the Bidder responding. No Bid will be considered from any Bidder not properly licensed as may be required by law.

- H. Except in cases of emergency, all bids for construction contracts shall be accompanied by a bid bond from a surety company selected by the bidder, which is legally authorized to do business in Virginia.
1. A bid, payment or performance bond for contracts for goods or services other than construction may be required if provided in the Invitation for Bid.
 2. The amount of the bid bond shall not exceed five percent (5%) of the total amount of the bid.
 3. In lieu of a bid bond, a bidder may furnish a certified check or cash escrow in the face amount required for the bond.
 4. Upon award of any public construction contract exceeding \$100,000 awarded to any prime contractor, such contractor shall furnish:
 - a. Performance bond in the sum of the contract amount.
 - b. Payment bond in the sum of the contract amount.
 5. Performance and/or payment bonds may be required for construction contracts below \$100,000 at the discretion of the County.
 6. In cases of emergency performance bonds/payment bonds are required within ten (10) calendar days of notice to proceed or project commencement.
- I. Bids that have been appropriately opened cannot be changed, adjusted, corrected or modified in any way other than complete withdrawal. The County's procedures for withdrawal of bids (whether construction or other than construction) is that set forth in Code of Virginia, §2.2-4330(A)&(B)(1), which allows withdrawal of a Bid due to an error such as 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 materials used in the preparation of the Bid. Withdrawal must be requested within two days of the Bid opening by delivering to the County original work papers, documents, and materials used in preparation of the Bid.
- J. All Bids, appropriately received, will be evaluated by considering the requirements set forth in the IFB, the quality, workmanship, economy of operation, suitability for intended purpose, delivery, payment terms and price of product or service being requested in this Bid.
- K. Bids are to be submitted on the type, brand, make, and/or kind of product and/or service requested or its approved equal, to be solely determined by the County, unless otherwise specified. Should a Bid be for a product and/or service as an equal, the name, make, model and type of that which is being Bid must be clearly stated. The Bid must also be accompanied by descriptive literature of the product or service Bid to allow for evaluation. Failure to provide this information may result in the Bid being considered non-responsive and may not be considered.

It is not the intent of the specifications to be proprietary, nor to exclude any manufacturer or dealer. Deviations will be given consideration if they are considered to be suitable and acceptable for comparison. Any deviations must be submitted, in writing, with your

bid. Deviations discovered after bid award or material receipt, not stated in your bid, shall be grounds for disqualification and nullification of order. It is the responsibility of the Offeror to prove that the deviation is equal to the product/service specified. The County of Roanoke will make the final determination as to whether the product is equivalent.

- L. If an award is made for the item(s) and/or services requested, a notice of award will be made which will be posted for public review on the County of Roanoke Purchasing Division's website under Current Bid Opportunities at <https://www.roanokecountyva.gov/bids.aspx> or you may contact Purchasing directly at (540) 772-2061 to request a copy of the award notification.

Upon completion of the Contract, payment will be made only to the Successful Bidder at the address as shown on the Contract. If the remittance address is other than the address on the Bid, it must be clearly noted and explained in the Bid. Contract/Purchase Order(s) will be paid only when the items and/or services have been supplied to and approved by the County.

- M. All items, identified in this IFB, are to be quoted and provided **F.O.B. DESTINATION-INSIDE DELIVERY**, unless otherwise stated in this IFB. All furniture items, if any, are to be put together and set in place.

- N. The County reserves the right to cancel this IFB or reject any or all Bids, to waive any informalities in any Bid and to purchase any whole or part of the items and/ or services listed in the IFB.

- M. Each Bidder is to notify in writing 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 County of Roanoke or has any responsibility or authority with the County 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 County of Roanoke. Each Bidder is advised that the Ethics in Public Contracting and Conflicts of Interests Act of the Code of Virginia, as set forth in this IFB, apply to this IFB. Such information should be provided in writing before the Bid opening date or may also be provided with the Bid response.

- N. **The attention of each Bidder is directed to VA Code 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. Each Bidder shall so state on the Bid Form, or in its response, if no Bid Form is provided, whether it has a VA license under such sections and, if so, the type of license and/or license number. Failure to include this information may result in the Bid being rejected as non-responsive.**

- O. **Bid Submittals shall include:**

1. **Pages 2-3, Invitation for Bid**
2. **Attachment A: Bid Form** (lump sum and unit prices shall include all labor, material, delivery costs, overhead and profit.)
3. **Required Attachments: B and C**

4. Signed copies of any Addenda issued.

Failure to do so may result in the Bid being determined as non-responsive.

Questions or concerns may be addressed by contacting Kate Hoyt by phone at 540-283-8149, or by email at KHoyt@roanokecountyva.gov.

- P. Ethics in Public Contracting. The provisions, requirements, and prohibitions as contained in Sections 2.2-4367 through 2.2-4377, of the Virginia Code, pertaining to bidders, offerors, contractors, and subcontractors are applicable to this IFB.
- Q. Conflict of Interests Act. The provisions, requirements, and prohibitions as contained in Sections 2.2-3100, et seq., of the Virginia Code are applicable to this IFB.
- R. The procurement provisions of the Virginia Public Procurement Act as well as the County Procurement Manual, apply to this RFP, unless specifically modified herein. The County's Procurement Manual can be reviewed on the County's electronic procurement website.
- S. The County may request clarification from any of the Bidders after review of the Bids received.
- T. The County is not liable for any costs incurred by any Bidder in connection with this IFB or any response by any Bidder to this IFB. The expenses incurred by a Bidder in the preparation, submission, and presentation of the Bid are the sole responsibility of the Bidder and may not be charged to the County.
- U. General and/or technical questions regarding the Scope of Services and/or items required, or procurement questions under this IFB may be directed **in writing** to Kate Hoyt, Senior Buyer, by email at KHoyt@roanokecountyva.gov.
- V. Each Bidder is required to state if it has ever been debarred, fined, had a contract terminated, or found not be a responsible bidder or Offer or by any federal, state, or local government and/or private entity. If so, please give the details of each such matter and include this information with Bidder's response.
- W. **Data on Convictions for Certain Crimes and Child Abuse and Neglect Certification of Contractor:** The Consultant certifies that none of the persons who will provide services requiring direct contact with students on school property during school hours or during school-sponsored activities has been convicted of any of the following felony or misdemeanor offenses: felony sex or violence offenses, other felony offenses or misdemeanor sex offenses within the past ten years.

The Consultant further understands and acknowledges (1) that if he makes a materially false statement regarding any of the above offenses, he will be guilty of a Class 1 misdemeanor and may forfeit profits derived from the contract. Further, the Consultant understands and acknowledges that before any person is permitted to provide such services subsequent to this certification, he must complete a new certification regarding such person in a form satisfactory to Roanoke County and the Roanoke County School Board. **Data and Convictions information will be requested before the County of Roanoke/Schools enters into a contract when required.**

- X. 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).
- Y. **Direct contact with any County 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 8. MISCELLANEOUS

- A. Ownership of all data, materials, and documentation originated and prepared for the County pursuant to the IFB shall belong exclusively to the County and be subject to public inspection in accordance with the *Virginia Freedom of Information Act*. The trade secrets or proprietary information submitted by the Bidder shall not be subject to public disclosure under the *Freedom of Information Act*, unless otherwise required by law or a court. **However, the Bidder must invoke the protection of Section 2.2-4342(F) of the Code of Virginia, in writing, either before or at the time the data or other material is submitted.** The written notice must SPECIFICALLY identify the data or materials to be protected and state the reason why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. The classification of an entire proposal document, line item prices, and/or total proposal prices as proprietary, or trade secrets, is NOT ACCEPTABLE and may result in REJECTION of the Bid.
- B. All Bidders shall be solely responsible for making sure that they have the most current and complete version of this IFB and all addenda that may have been issued for this IFB and that such Bidder has examined all such documents and data. Any interpretation, correction, or change of the IFB will be made by an addendum. Interpretations, corrections or changes of this IFB made in any other manner will not be binding and Bidders must not rely upon such interpretations, corrections, or changes. The County Purchasing Division or its designee will issue Addenda that will be posted to the County website on the Current Bid Opportunities tab at <https://www.roanokecountyva.gov/bids.aspx>.
- C. 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.
- D. The County may make investigations to determine the ability of the Bidder to perform the work and/or provide the services and/or items as described in this IFB. The County of Roanoke reserves the right to reject any Bid if the Bidder fails to satisfy the County of Roanoke that it is qualified to carry out the obligations and requirements requested in this IFB.

- E. The Successful Bidder must comply with the nondiscrimination provisions of Virginia Code Section 2.2-4311, which are incorporated herein by reference.
- F. The Successful Bidder must comply with the drug-free workplace provisions of Virginia Code Section 2.2-4312, which are incorporated herein by reference.
- G. It is the policy of the County of Roanoke to maximize participation whenever possible by minority and women owned business enterprises in all aspects of County contracting opportunities.
- H. The Successful Bidder shall comply with all applicable County, State, and Federal laws, codes, provisions, and regulations. The successful Bidder shall not during the performance of any resultant contract knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- I. Providers of any outside services and/or items shall be subject to the same conditions and requirements as the Successful Bidder in regards to law, code, or regulation compliance. The County reserves the right of approval for any subcontract work, including the costs thereof.

SECTION 9. EVALUATION FOR LOWEST RESPONSIVE AND RESPONSIBLE BIDDER

To determine the lowest responsive and responsible Bidder with respect to this Bid, the following factors, among such others as will protect and preserve the interest of the County may be considered:

- A. Lump Sum project cost, Add Alternate, and unit prices, as set forth on the Bid Form;
- B. The specified terms and discounts, if any, of the Bid;
- C. The ability, capacity and skill of the Bidder to perform the Contract and/or provide the services and/or items required;
- D. Whether the Bidder can perform the Contract and/or perform the services and/or provide the items promptly, or 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 on previous contracts or services;
- G. The previous and existing compliance by the Bidder with laws and ordinances relating to other contracts, purchase orders, items and/or services provided by Bidder in other matters;
- H. The equipment and facilities available to the Bidder to perform the Contract and/or provide the services and/or items requested in the IFB;
- I. The sufficiency of the financial resources and ability of the Bidder to perform the Contract and/or provide the services and/or items requested in the IFB;

- J. The quality, availability, and adaptability of the supplies, materials, equipment and/or services the Bidder can provide for the particular use and/or work requested in the IFB; and
- K. The ability of the Bidder to provide future maintenance, parts, and service for the items requested in the IFB.

SECTION 10. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

Successful Bidder, and any of its subcontractors, shall, at its sole expense, obtain and maintain during the life of the resulting Contract the insurance policies and/or bonds required. Any required insurance policies and/or 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. All such insurance shall be primary and noncontributory to any insurance or self-insurance the County may have. The policies and coverages required are those as may be referred to in the sample contract attached to this IFB, but shall include workers' compensation coverage regardless of the number of employees, unless otherwise approved by the County's Risk Manager.

SECTION 11. NEGOTIATIONS WITH LOWEST RESPONSIVE AND RESPONSIBLE BIDDER

If the bid by the lowest responsive and responsible bidder exceeds available funds, the County reserves the right to negotiate with the apparent lowest responsible bidder pursuant to County Code Chapter 17 (Ord. No. 3350, S2-30,12-14-82). State Code 2.2.4318. The conditions and procedures under which such negotiation may be undertaken are that the appropriate County 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 County, in the sole discretion of the County.

SECTION 12. BID AWARD

If an award of a Contract is made, it will be awarded to the lowest responsive and responsible bidder. If an award of a contract is made, notification of such award will be posted for public review on the County of Roanoke Purchasing Division's website under Current Bid Opportunities at <https://www.roanokecountyva.gov/bids.aspx> or you may contact Purchasing directly at (540) 772-2061 to request a copy of the award notification.

SECTION 13. FAITH BASED ORGANIZATIONS

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

SECTION 14. HOLD HARMLESS AND INDEMNITY

Successful Bidder shall indemnify and hold harmless the County 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 Successful Bidder's or its employees, agents, or subcontractors actions, activities, or omissions, negligent or otherwise, on or near County's property or arising in any way out of or resulting from any of the work or items to be provided under the 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. Successful Bidder agrees to and shall protect, indemnify, and hold harmless all the parties referred to above from any and all demands for fees, claims, suits, actions, causes of action, settlement or judgments based on the alleged or actual infringement or violation of any copyright, trademark, patent, invention, article, arrangement, or other apparatus that may be used in the performance of the Contract.

SECTION 15. PROTESTS

Any Bidder who wishes to protest or object to any award made or other decisions Pursuant to this IFB 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. Any such protest or objection must be in writing signed by a representative of the entity making the protest or objection and contain the information required by the applicable Code Sections set forth above. Such writing must be delivered to the County Manager within the required time period.

SECTION 16. COOPERATIVE PROCUREMENT

Not used.

SECTION 17. INFORMATION ON CONTRACT/PURCHASE ORDER TO BE AWARDED

The **Sample Contract** marked as Attachment D to IFB No. 2023-023 contains terms and conditions that the County will include in any Contract that may be awarded, but such terms and conditions may be added to, deleted, or modified as may be agreed to between the County and the Successful Bidder. However, if a Bidder has any objections to any of the terms or conditions set forth in the Sample or any changes or additions thereto that the Bidder wants to discuss before submitting a bid, the Bidder should set forth such objections, changes, or additions in written correspondence to the Purchasing Division at least five (5) days before the bid opening date for this IFB. Otherwise, submission of a bid by a Bidder will obligate such Bidder, if it is the Successful Bidder, to enter into a Contract containing the same or substantially similar terms and conditions as contained in such Attachment, and to comply with such terms and conditions. Also, such terms and conditions, together with the requirements of this IFB, shall be deemed to be a part of any resultant Contract/Purchase Order that may be issued by the County to the Successful Bidder.

END.

IFB # 2023-023
ATTACHMENT A: Bid Form/ Specifications

County of Roanoke
Purchasing Division
5204 Bernard Drive, SW, Suite 300-F
Roanoke, VA 24018-0798

The County reserves the right to add, delete, or adjust quantities as deemed necessary by the County.

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 County as being nonresponsive. No changes are to be made to the Bid Form. Any changes to a Bid Amount must be initialed by the person signing the Bid Form.

I/We hereby propose to furnish and provide roof replacement at the Cave Spring Fire Station, in accordance with the enclosed general terms, conditions and specifications contained in IFB No. 2023-023. The Bid Form must be completed in blue or black ink. Discrepancies in the multiplication of units of work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. My/Our prices are as follows:

PRICES QUOTED SHALL BE FOB DESTINATION. Freight charges shall be included in the bid price.

Base Bid: \$ _____

Add Alternate 1: \$ _____

Project Completion Time: _____ (calendar days after NTP)

Unit Prices

ITEM	UNIT OF MEASURE	UNIT PRICE
Hauling	per ton/mile	
Curb replacement for exhaust fans, etc.	Per typical replacement	
Cap flashing replacement (beyond that shown in the drawings)	Per linear foot	
Parapet blocking	Per 12'-0" section, including bolting	
Roof drain replacement (beyond that shown in the drawings)	Per roof drain	
Roof drain supports (additional beyond that shown in drawings)	Per roof drain location	
Thru-Wall scupper replacement	Per typical replacement	

Payment terms are: Net 30. If Bidder offers a cash discount for prompt payment, it will only be considered in determining the lowest responsible Bidder if the Bidder allows at least twenty (20)

days for the prompt payment after the goods or services are received or after the invoice is rendered, whichever is later.

To aid in the evaluation of bids, bidders must submit the original Bid Form and one copy of the Bid Form, Attachments, and detailed specification sheets, if applicable. If you fail to do so, your bid may be considered non-responsive and rejected.

Have you complied with this requirement? Yes / No.

Indicate whether your business _____ IS or _____ IS NOT located in Roanoke County. If it is, please include a copy of your Roanoke County business license with your bid.

I/We acknowledge the receipt of:

Addendum No. _____ Dated _____.

ATTACHMENT B: Virginia State Corporation Commission (SCC) Registration Information

The attention of each Bidder is directed to VA Code 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 or ___ does not have a Virginia Contractor's License. (Check appropriate block)

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: _____

If Bidder has another type of Virginia License, please list the type and number:

Type of license: _____ and number: _____.

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

The attention of each Bidder is directed to Virginia Code Section 2.2-4311.2 which 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, shall 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/offeror'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.

Signature page required with submittal of bid

IFB # 2023-023

ATTACHMENT C: Notice of Proprietary Information Form

Confidentiality References Protection in Accordance with the Code of Virginia, Section 2.2-4342

Section Title	Page #	Reason(s) for Withholding from Disclosure

INSTRUCTIONS: Identify the data or other materials to be protected and state the reasons by using the codes listed below. Indicate the specific words, figures, or paragraphs that constitute trade secrets or proprietary materials. The classification of an entire bid or proposal document, line item prices, and/or total bid or proposal prices as proprietary or trade secret is not acceptable and will result in rejection of the bid or proposal.

- A) This page contains information relating to "trade secrets", and "proprietary information" including processes. Operations, style of work, or apparatus. Identify confidential statistical data. Amount or source of any income...of any person (or) partnership. See Virginia Public Procurement Act. Section 2.2-4342. Unauthorized disclosure of such information would violate the Trade Secrets Act 18 U.S.C. 1905.

- B) This page contains proprietary information including confidential, commercial or financial information, which was provided to the Government on a voluntary basis and is of the type that would not customarily release to the public. See Virginia Public Procurement Act, Section 2.2-4342; 5 U.S.C. 552 (b) (4); 12 C.F.R. 309.5(c) (4).

- C) This page contains proprietary information including confidential, commercial or financial information. The disclosure of such information would cause substantial harm to competitive position and impair the Government's ability to obtain necessary information from contractors in the future. 5 U.S.C. See Virginia Public Procurement Act. Section 2.2-4342; 552 (b) (4)12 C.F.R. 309.5(c) (4).

ATTACHMENT D: Sample Contract and Terms or Conditions



**COUNTY OF ROANOKE, VIRGINIA
SAMPLE CONTRACT BETWEEN COUNTY OF ROANOKE AND
_____ FOR CAVE SPRING FIRE STATION ROOF REPLACEMENT**

This Contract # 2023-023 is dated August 9, 2022, between the County of Roanoke, Virginia, hereinafter referred to as the “County” or “Owner”, and _____, hereinafter referred to as the “Contractor.”

WITNESSETH:

WHEREAS, Contractor has been awarded this nonexclusive Contract by the County for furnishing all equipment, materials, goods, labor, and services necessary for replacement of the roof at 4212 Old Cave Spring Road, Roanoke VA 24018, and associated work in accordance with this Contract and the documents referred to herein, all such items or services also being referred to hereinafter as the Work or Project.

NOW, THEREFORE, THE COUNTY AND THE CONTRACTOR AGREE AS FOLLOWS:

SECTION 1. WORK TO BE PERFORMED AND DOCUMENTS.

For and in consideration of the money hereinafter specified to be paid by the County to the Contractor for the Work provided for in this Contract to be performed by the Contractor, the Contractor hereby covenants and agrees with the County to fully perform the services, provide any materials called for to construct, and complete the Work called for by this Contract in a good and workmanlike manner in accordance with this Contract and the documents referred to herein in order to fully and properly complete this Contract within the time stipulated, time being made of the essence for this Contract. It is also agreed by the parties hereto that the documents to this Contract consist of this Contract and the following documents listed below (Contract Documents), all of which are and constitute a part of this Contract as if attached hereto or set out in full herein, viz:

1. Insurance Requirements (Exhibit 1).
2. Scope of Work/Fee Schedule (Exhibit 2).
3. Bid Form Completed by Contractor and dated _____ (Exhibit 3). (To be provided after selection of Successful Bidder.)
4. Invitation for Bid No. 2023-023, which is incorporated herein by reference.

The parties agree that if there are any differences between the provisions of the above referenced documents, the provisions of the County documents and this Contract will control over any Contractor supplied documents or information.

SECTION 2. CONTRACT AMOUNT.

The County agrees to pay the Contractor for the Contractor's complete and satisfactory performance of the Work, in the manner and at the time set out in this Contract, but the total amount for all such requests will not exceed \$ _____, as provided for in this Contract and that this Contract amount may be increased or decreased by additions and/or reductions in the Work as may be authorized and approved by the County, and the Contract amount may be decreased by the County's assessment of any damages against the Contractor, as may be provided for in this Contractor or by law, and the County retains the right of setoff as to any amounts of money the Contractor may owe the County. However, Contractor further acknowledges and agrees that any request for Contractor to perform Work under this Contract is in the sole discretion of the County and that there is no guarantee of any minimum amount of Work that may be requested by the County and that no Work may be requested.

SECTION 3. TERM OF CONTRACT.

All terms and conditions shall remain in force for the term of this Contract and for any renewal or extension period unless modified by mutual agreement of both parties. Prices shall not be increased during the initial term of this Contract.

SECTION 4. TIME OF PERFORMANCE.

The Contractor shall commence the Work to be performed under this Contract on such date as is established and fixed for such commencement by written notice (which may be initially given verbally in an emergency situation) to proceed given by the County representative to the Contractor, and the Contractor covenants and agrees to fully construct, perform, and complete the Work and/or provide the goods called for by this Contract established by such notice. The Contractor further agrees that the Work shall be started promptly upon receipt of such notice and shall be prosecuted regularly, diligently, and uninterruptedly at a rate of progress that will ensure full completion thereof in the shortest length of time consistent with the Contract Documents and that Contractor will cooperate and coordinate with the other County contractors or employees doing other work or using the area where Contractor is working.

SECTION 5. PAYMENT.

- A. The County and Contractor agree that the County will only pay the Contractor for time actually spent and materials actually provided on the Project requested and accepted by the County. Invoices for services rendered and accepted shall be submitted by Contractor directly to the payment address of the requesting County department/division. Payment of such invoices shall be the responsibility of the department/division.

- B. The County agrees to pay Contractor for the Contractor's complete and satisfactory performance of the Work, in the manner and at the time set out in this Contract. The County retains the right to setoff as to any amounts of money Contractor may owe the County. A written progress report may be requested by the County to accompany payment request and, if so, such progress report shall detail the work completed. Also, sufficient documentation of all costs, expenses, materials supplies, and/or hours worked may be requested by the County and, if so, may be required prior to the processing of any such request for payment. Payment will only be made for work actually performed, services actually supplied, and/or materials or goods furnished to the County, all of which need to

be approved and accepted by the County prior to such payment, unless otherwise provided for in the Contract documents. Once a payment request has been received the County, the County will process such payment request. If there are any objections or problems with the payment request, the County will notify the Contractor of such matters. If the payment request is approved and accepted by the County, payment will be made by the County to the Contractor not more than 30 days after such request has been approved.

- C. The services the Contractor may be requested to provide the County are those items set forth in Exhibit 2 (Scope of Work) and/or Exhibit 3 (Bid Form), which list of services may be amended by the mutual agreement of the parties. The prices to be paid to the Contractor for such services provided to and accepted by the County under the provisions of this Contract shall be the current price(s) as set forth in Exhibit 3 (Bid Form). Unless otherwise stated in this Contract, the price(s) shall include all applicable charges such as pick up, delivery, printing, packaging, shipping, and other charges.

SECTION 6. SALES TAX EXEMPTION.

The County is exempt from payment of State Sales and Use Tax on all tangible personal property purchased or leased for the County's use or consumption. The Virginia Sales and Use Tax Certificate of Exemption number is 217-074292-9.

SECTION 7. FREE ON BOARD, RISK OF LOSS, AND TITLE.

All prices include F.O.B Destination, inside delivery, unless otherwise noted in this Contract. The risk of loss from any casualty, regardless of cause, shall be on the Contractor until the items have been delivered to County personnel making the request and accepted by the County. The risk of loss shall also be on the Contractor during the return of any items to the Contractor. Title to the items shall pass to the County upon receipt and acceptance of such items by the County.

SECTION 8. INSPECTION.

The County shall have a reasonable time after receipt of items and before payment to inspect all items for conformity to this Contract. If all or some of the items delivered to the County do not fully conform to the provisions hereof, the County shall have the right to reject and return such nonconforming items, at the sole cost of the Contractor.

SECTION 9. WARRANTY OF MATERIAL AND WORKMANSHIP.

Contractor agrees that all items provided to the County will be new, or if an item is refurbished or remanufactured, such item will meet the industry standards for such item and the item shall be clearly labeled as refurbished or remanufactured, and that all such items include such warranties as may be provided by Virginia law together with any warranties provided by the manufacturer of the item. Contractor shall use reasonable commercial efforts to assist the County in processing warranty claims against a manufacturer. Contractor also agrees that the services provided under this Contract shall be completed in a professional, good and workmanlike manner, with the degree of skill and care that is required by like contractors in Virginia. Further, Contractor warrants that such services shall be completed in accordance with the applicable requirements of this Contract and shall be correct and appropriate for the purposes contemplated in this Contract. Contractor agrees that Contractor shall repair or replace, at Contractor's sole expense, and to the satisfaction

of the County, any items, material, equipment, or part of the item that is found by the County to be defective or not in accordance with the terms of this Contract.

- A. 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.
- B. Work not conforming to these warranties shall be considered defective.
- C. 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.
- D. The Design-Builder agrees to assign to Roanoke County at the time of final completion of the Work all manufacturer's warranties relating to equipment, materials, and labor used in the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties. If necessary as a matter of law, the Design-Builder may retain the right to enforce directly any such manufacturers' warranties during the one-year period following the date of Substantial Completion.

SECTION 10. PAYMENTS TO OTHERS BY CONTRACTOR.

The Contractor agrees that Contractor will comply with the requirements of Section 2.2-4354 of the Virginia Code regarding Contractor's payment to other entities and the Contractor will take one of the two actions permitted therein within 7 days after receipt of amounts paid to Contractor by the County. Contractor further agrees that the Contractor shall indemnify and hold the County harmless for any lawful claims resulting from the failure of the Contractor to make prompt payments to all persons supplying the Contractor equipment, labor, tools, or material in connection with the work provided for in the Contract. In the event of such claims, the County may, in the County's sole discretion, after providing written notice to the Contractor, withhold from any payment request or final payment the unpaid sum of money deemed sufficient to pay all appropriate claims and associated costs in connection with the Contract and make such payment, if the County determines it to be appropriate to do so.

SECTION 11. HOLD HARMLESS AND INDEMNIFY.

Contractor shall indemnify and hold harmless the County 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 County's property or arising in any way out of or resulting from any of the work or items 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. Contractor agrees to and shall protect, indemnify, and hold harmless all the parties referred to above from any and all demands for fees, claims, suits, actions, causes of action, settlement or judgments based on the alleged or actual infringement or violation

of any copyright, trademark, patent, invention, article, arrangement, or other apparatus that may be used in the performance of this Contract.

SECTION 12. COMPLIANCE WITH LAWS AND REGULATIONS, PERMITS, AND IMMIGRATION LAW.

- A. **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.

- B. **Permits and Licenses:** The Contractor shall, at its sole cost, obtain all required permits and license from the appropriate authorities, including the County 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.

- C. **Litter:** In accordance with the Virginia Anti-Litter Law, receptacles sufficient to contain employees' 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.

- D. **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 13. INDEPENDENT CONTRACTOR.

The relationship between Contractor and the County is a contractual relationship. It is not intended in any way to create a legal agency or employment relationship. Contractor shall, at all times, maintain its status as an independent contractor and both parties acknowledge that neither is an agent, partner or employee of the other for any purpose. Contractor shall be responsible for causing all required insurance, workers' compensation (regardless of number of employees) and unemployment insurance to be provided for all of its employees and subcontractors. Contractor will be responsible for all actions of any of its subcontractors, and that they are properly licensed.

SECTION 14. REPORTS, RECORDS, AND AUDIT.

Contractor agrees to maintain all books, records, electronic data, and other documents relating to this Contract for a period of five (5) years after the end of each fiscal year included in this Contract. The County, its authorized employees, agents, representatives, and/or state auditors shall have full access to and the right to request, examine, copy, and/or audit any such materials during the term of the Contract and such retention period, upon prior written notice to

Contractor. This includes the County's right to audit and/or examine any of the Contractor's documents and/or data as the County deems appropriate to protect the County's interests.

SECTION 15. INSURANCE REQUIREMENTS.

Contractor and any of its subcontractors involved in this Contract shall maintain the insurance coverage's set forth in Exhibit 1 to this Contract and provide the proof of such insurance coverage as called for in Exhibit 1, including workers' compensation coverage regardless of the number of Contractor's employees. Such insurance coverage shall be obtained at the Contractor's sole expense and maintained during the life of the Contract and shall be effective prior to the beginning of any work or other performance by the Contractor under this Contract. Additional insured endorsements, if required, must be received by the County within 30 days of the execution of this Contract or as otherwise required by the County's Risk Manager.

SECTION 16. DEFAULT.

If Contractor fails or refuses to perform any of the terms of this Contract, including poor services, work or materials, the County may, by written notice to Contractor, terminate this Contract in whole or in part. In addition to any right to terminate, the County may enforce any remedy available at law or in equity in connection with such default, and Contractor shall be liable for any damages to the County resulting from Contractor's default. The County further reserves the right to immediately obtain such work or services from other entities in the event of Contractor's default.

SECTION 17. NONWAIVER.

Contractor agrees that the County's waiver or failure to enforce or require performance of any term or condition of this Contract or the County'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 County from requiring the Contractor to comply with all the terms and conditions of the Contract and does not bar the County from asserting any and all rights and/or remedies it has or might have against the Contractor under this Contract or by law.

SECTION 18. FORUM SELECTION AND CHOICE OF LAW.

This Contract shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue for any litigation, suits, and claims arising from or connected with this Contract shall only be proper in the Roanoke County Circuit Court, or in the Roanoke County General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to this Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties. The provisions of this Contract shall not be construed in favor of or against either party, but shall be construed according to their fair meaning as if both parties jointly prepared this Contract.

SECTION 19. SEVERABILITY.

If any provision of this Contract, or the application of any provision hereof to a particular entity or circumstance, shall be held to be invalid or unenforceable by a court of competent jurisdiction,

the remaining provisions of this Contract shall not be affected and all other terms and conditions of this Contract shall be valid and enforceable to the fullest extent permitted by law.

SECTION 20. NONDISCRIMINATION.

- A. During the performance of this Contract, Contractor agrees as follows:
 - i. 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. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - ii. Contractor in all solicitations or advertisements for employees placed by or on behalf of Contractor will state that Contractor is an equal opportunity employer.
 - iii. 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.
- B. Contractor will include the provisions of the foregoing Section A (i, ii, and iii) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

SECTION 21. DRUG-FREE WORKPLACE.

- A. During the performance of this Contract, Contractor agrees to (i) provide a drug-free workplace for 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 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 Contractor that Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- B. For the purposes 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 whom 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.

SECTION 22. FAITH BASED ORGANIZATIONS.

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

SECTION 23. DATA ON CONVICTIONS FOR CERTAIN CRIMES

The Contractor certifies that none of the persons who will provide services requiring direct contact with students on school property during school hours or during school-sponsored activities has been convicted of any of the following felony or misdemeanor offenses: felony sex or violence offenses; other felony offenses or misdemeanor sex offenses within the past ten years.

The Contractor further understands and acknowledges (1) that if he or his agents make a materially false statement regarding any of the above offenses, he will be guilty of a Class 1 misdemeanor and may forfeit profits derived from the contract. Further, the Contractor understands and acknowledges that before any person is permitted to provide such services subsequent to this certification, he must complete a new certification regarding such person in a form satisfactory to Roanoke County and the Roanoke County School Board. Data and Conviction information will be requested before the County of Roanoke/Schools enters into a contract / when required.

SECTION 24. ASSIGNMENT.

Contractor may not assign or transfer this Contract in whole or in part except with the prior written consent of the County. If consent to assign is given, no such assignment shall in any way release or relieve the Contractor from any of the covenants or undertakings contained in this Contract and the Contractor shall remain liable for the Contract during the entire term thereof.

SECTION 25. 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 Board of Supervisors or its designee (hereafter "BOS"). The Contractor may not institute legal action prior to receipt of the County's decision on the claim unless the BOS fails to render such decision within ninety (90) calendar days from submittal of its claim. The decision of the BOS 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 90 day time limit, whichever occurs first, initiates legal action as provided in Section 2.2-4364 of the Code of Virginia. Failure of the County to render a decision within said ninety (90) 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 County's failure to render a decision within said ninety (90) 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.

SECTION 26. SUCCESSORS AND ASSIGNS.

The terms, conditions, provisions, and undertakings of this Contract shall be binding upon and inure to the benefit of each of the parties hereto and their respective successors and assigns.

SECTION 27. HEADINGS.

The captions and headings in this Contract are for convenience and reference purposes only and shall not affect in any way the meaning and interpretation of this Contract.

SECTION 28. COUNTERPART COPIES.

This Contract may be executed in any number of counterpart copies, each of which shall be deemed an original, but all of which together shall constitute a single instrument.

SECTION 29. AUTHORITY TO SIGN.

The persons who have executed this Contract represent and warrant that they are duly authorized to execute this Contract on behalf of the party for whom they are signing.

SECTION 30. NOTICES.

All notices must be given in writing and shall be deemed valid if sent by certified mail, return receipt requested, or by a nationally recognized overnight courier, with a receipt, addressed as follows (or any other address that the party to be notified may have designated to the sender by like notice):

To County:	County of Roanoke General Services 5235 Hollins Road Roanoke VA 24019
Email:	_____@roanokecountyva.gov
Copy to:	County of Roanoke Purchasing Division Attn: Kate Hoyt 5204 Bernard Drive, SW, Suite 300-F Roanoke, Virginia 24018
Email:	KHoyt@roanokecountyva.gov
If to Contractor:	_____ Attn: _____, President/CEO _____ _____
Email Address:	_____
Phone:	_____

Notices shall be deemed to be effective one day after sending if sent by overnight courier or three (3) days after sending it by certified mail, return receipt requested.

SECTION 31. PROTECTING PERSONS AND PROPERTY.

- A. **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.
- B. **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.

- C. **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".
- D. **Protecting the Work and Adjacent Property:** The Contractor shall continuously maintain adequate protection of all the Work from damage and shall protect the County'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.
- E. **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 County, 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 County, Contractor shall so act immediately, without appeal.

SECTION 32. 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 County may terminate this Contract on seven (7) days written notice to Contractor, without any penalty or damages being incurred by the County. Contractor further agrees to comply with any applicable requirements of any grants and/or agreements providing such funding.

SECTION 33. SUSPENSION OR TERMINATION OF CONTRACT BY COUNTY.

The County, at any time, may order Contractor to immediately stop work on this Contract, and/or by seven days (7) written notice may terminate this Contract, with or without cause, in whole or in part, at any time. Upon receipt of such notice, the Contractor shall immediately discontinue all services affected (unless the notice directs otherwise), and deliver to the County all data (including electronic data), drawings, specifications, reports, project deliverables, estimates, summaries, and such other information and materials as may have been accumulated by the Contractor in performing this Contract whether completed or in process (unless otherwise directed by the notice).

- A. If the termination or stop work order is due to the failure of the Contractor to fulfill any of its Contract obligations, the County may take over the Work and prosecute the same to completion by contract or otherwise. In such case, the Contractor shall be liable to the County for any damages allowed by law, and upon demand of County shall promptly pay the same to County.

- B. Should the Contract be terminated or work is stopped not due in any way to the fault of the Contractor, the Contractor shall only be entitled to compensation for services actually performed and materials actually supplied prior to notice of termination or to stop work and which are approved by the County and any applicable federal or state approving agency. No profit, overhead, or any other costs of any type are allowed after the date of such notice of termination or stop work order.
- C. The rights and remedies of the County provided in this Section are in addition to any other rights and remedies provided by law or under this Contract and County may pursue any and all such rights and remedies against Contractor as it deems appropriate.

SECTION 34. ETHICS IN PUBLIC CONTRACTING.

The provisions, requirements, and prohibitions as contained in Sections 2.2-4367 through 2.2-4377, of the Va. Code, pertaining to bidders, offerors, contractors, and subcontractors are applicable to this Contract.

SECTION 35. 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 County may void the Contract if the Contractor fails to remain in compliance with the provisions of this section.

SECTION 36. OWNERSHIP OF REPORTS AND DOCUMENTS.

Contractor agrees that all reports and any other documents (including electronic data) prepared for, obtained in connection with, and/or required to be produced in connection with this Contract shall be delivered by the Contractor to the County and all such items shall become the sole property of the County. The Contractor agrees that the County shall own all rights of any type in and to all such items, including but not limited to copyrights and trademarks, and the County may reproduce, copy, and use all such items as the County deems appropriate, without any restriction or limitation on their use and without any cost or charges to the County from Contractor. Contractor hereby transfers and assigns all such rights and items to the County. Contractor further agrees Contractor will take any action and execute any documents necessary to accomplish the provisions of this Section. The Contractor also warrants that Contractor has good title to all materials, equipment, documents, and supplies which it uses in the Work or for which it accepts payment in whole or in part.

SECTION 37. 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 County 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 County on or after the effective date of the Contract which is agreed to by the Contractor and approved by the County, and which authorizes an addition, deletion, or revision in the Work, including any adjustment in the Contract Price and/or the Contract Time.

County or Owner: The County of Roanoke, Virginia, (Includes any Agency that is represented by Roanoke County and sometimes also referred to as Buyer) or its authorized representative.

County Code: Refers to the Code of the County of Roanoke, as amended.

County Designee: The County of Roanoke's authorized representative.

Board of Supervisors: The County Board of Supervisors or 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 County 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.

Final Acceptance: The County's acceptance of the project from the Contractor upon confirmation from County 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 County at the County's discretion to the Contractor fixing the date on which the Contract time will commence for the Contractor to begin the Work in accordance with the requirements of the Contract Documents.

Project Inspector: One or more individuals employed by the County to inspect the Work and/or to act as Resident Inspector to the extent required by the County. The County 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 County when construction is sufficiently complete, in accordance with the Contract Documents, so the County 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 County 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 38. INDEMNITY PROVISION.

- A. **Indemnity:** Contractor shall indemnify and hold harmless County 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 County's property or easement, or arising in any way out of or resulting from any of the work to be provided under this Contract. This provision 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.

- B. **Hazardous Material:** While on County'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 County's acquiescence, Contractor shall indemnify and hold County, its 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 County for all costs and expenses incurred by County in eliminating or remedying such violations. Contractor also agrees to reimburse County and hold County, its officers, agents, and employees harmless from any and all costs, expenses, attorney's fees and all penalties or civil judgments obtained against the County 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 County's premises.
- C. **Patents:** The Contractor shall protect, indemnify, and hold harmless the County, its officers, agents and employees 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 39. EMPLOYMENT AND CONDUCT OF PERSONNEL.

- A. **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 County 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 County and such person shall not again be used for this Contract.
- B. **Superintendence:** The Contractor shall have a competent foreman or superintendent, subject to County's approval, which shall not be unreasonably withheld, on the jobsite at all times during the progress of the Work. The Contractor shall notify the County, in writing, of any proposed change in the foreman or superintendent including the reason therefore prior to making such change.
- C. **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 \$5,000, so that the provisions will be binding upon each subcontractor or vendor.

- a. 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 whom 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 40. SUBCONTRACTORS.

- A. **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 County 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 County business license. The Contractor is required to submit the Contractor's Certification as to Licensure of Subcontractors Form to County. This constitutes a material part of the Contractor's Contract with the County.
- B. **Change of Subcontractors:** Subcontractors shall not be changed without the written approval of County.
- C. **Responsibility for Subcontractors:** The Contractor shall not employ for the project any subcontractor that the County may, within a reasonable time, object to as unsuitable. The Contractor further agrees that it is as fully responsible to the County 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 41. CONDITIONS AT SITE.

- A. **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 County and will be the sole responsibility of the Contractor.
- B. **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 County before the conditions are disturbed. Upon such notice, or upon his own observation of such conditions, County 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.

- C. **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 County. County 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 County.

SECTION 42. SURVEYS AND LAYOUT.

- A. **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 County of any discrepancies and confirm such notice in writing within five (5) calendar days.
- B. **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 County.
- C. **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 County. 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 County, be replaced and accurately located by the Contractor.

SECTION 43. DRAWINGS AND SPECIFICATIONS.

- A. **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 necessary, Contractor may request the same in writing from County. The Contractor shall carry out the Work in accordance with the drawings and specifications and any additional detail drawings and instructions as issued by County. However, Contractor shall immediately notify County of any discrepancies in such drawings and/or specifications and confirm such notice in writing within five (5) calendar days.

- B. **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 County.
- C. **"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.
- D. **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.
- E. **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, plotted from available records and field survey information, and shall be considered approximate only, and the County makes no representations with regard to their accuracy. The Contractor shall not scale measurements or dimensions from the drawings. Where there are discrepancies, County 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.
- F. **As-Built Drawings:** The Contractor shall maintain at the site for the County 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 County, the Project Inspector, and the County'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.
- G. **Record Drawings:** Upon completion of the Work and prior to Final Acceptance, the Contractor shall deliver to County, for preparation of the Record Drawings, one complete set of "As-Built Drawings" and documents referred to in Section 10.6.

SECTION 44. SCHEDULE OF THE WORK.

- A. **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 County or by other County consultants or contractors at the site or for the Project. The Contractor shall prepare and submit to County a schedule for accomplishing the Work based upon the completion time stated in the Contract and submit such to County 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 County. All schedules under Section 11 shall be in both paper and electronic form unless otherwise directed by County.

- B. **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.
- C. **Delay and Recovery Schedule:** Should there be any delay; County may require the Contractor to prepare, at no extra cost to the County, a plan of action and a recovery schedule for completing the Work by the contractual completion date.
 - i. The plan of action and recovery schedule shall set forth how the Contractor intends to comply with the original schedule. The plan of action and recovery schedule, when required, shall be submitted and approved by County prior to Contractor's submission of the next monthly construction estimate. The County may withhold progress payments until such schedule is submitted and approved.

SECTION 45. 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 County that the finished Work complies with the Contract Documents. The Contractor shall be solely responsible for health and safety precautions and programs for its workers, and subcontractors, agents and assigns with the Work. No inspection by, knowledge on the part of, or acquiescence by the County, 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 46. STANDARDS FOR MATERIAL INSTALLATION AND WORKMANSHIP.

- A. **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 County 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 County.

- B. Hazardous Substances:** Unless specifically approved by the County or required by the specifications, the Contractor shall not incorporate any material into the Work that contains 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 County. If the Contractor becomes aware that a material required by the specifications contains asbestos or other hazardous substances, it shall notify the County and County immediately and shall take no further steps to acquire or install any such material without first obtaining County approval. (See also Sections 2.2 and 8.3 of these General Conditions.)
- C. 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 workers 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 workers. Poor or inferior workmanship (as determined by County, 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 the County, or other inspecting authority, at the Contractor's sole expense.
- D. 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 County will be notified by Contractor for an interpretation and decision.
- E. 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 County 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.
- F. 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 47. SUBMITTALS.

- A. **General:** The Contractor shall submit for the approval of County all documents and/or materials required by the solicitation or requested by County. 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.
- B. **Format:** Submissions shall be made in such number of copies that two (2) approved copies may be retained by County. 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.
- C. **Supporting Material:** Submissions 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.
- D. **Coordination:** Contractor shall review and coordinate 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.
- E. **Variations:** If the submissions 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 so 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.

- F. **"Or Equal"**: The drawings and/or specifications may indicate that County 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 County. 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 County must design around the dimensions and characteristics of a particular product.
- G. **Review by County**: County will review and respond to the submittals within a reasonable time. 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.
- H. The Work shall be in accordance with approved submittals.

SECTION 48. INSPECTION AND INDEPENDENT TESTING.

- A. **Inspection and Testing**: All material and workmanship shall be subject to inspection, examination, and testing by County at any and all times during manufacture and/or construction. County shall have authority to reject defective material and workmanship and require its correction. Rejected workmanship shall be corrected to the satisfaction of the County, and rejected material shall be replaced with proper material that is satisfactory to the County, 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 County 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.
- B. **Payment for Inspection, Testing, and Certification**:
- i. 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 County. 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 County for the cost of reexamination and retesting.
- ii. Although conducted by independent testing entities, the County 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 by entities 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.
 - iii. 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.

C. **Examination of Completed Work:** Should it be considered necessary or advisable by County at any time before final acceptance of the entire Work to examine 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.

D. **Suspension of Work:** The County 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 County. 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.

E. **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:

- i. Enter into the area of responsibility of the Contractor's superintendent;
- ii. 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;
- iii. Authorize or suggest that the County occupy the project, in whole or in part; or
- iv. Issue a certificate for payment.

SECTION 49. USE OF PREMISES AND REMOVAL OF DEBRIS

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.

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.

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.

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 County may do so and charge for costs thereof to the Contractor in accordance with these General Conditions.

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 50. DAMAGES TO THE WORK AREA

- A. **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 County.
- i. 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.
 - ii. 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 County.
 - iii. 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.

- B. **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.
 - a. Damages that may occur to the utilities during the Work shall be the sole responsibility of the Contractor.
- C. **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.
- D. **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 County.
- E. **Weather Damage:** Damage with respect to the Work caused by the weather shall be the responsibility of the Contractor.
- F. **Blasting:** Any damage that may occur due to blasting shall be the sole responsibility of the Contractor.

SECTION 51. CHANGES IN THE WORK

- A. **Changes in Drawings and Specifications:** The County 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 in writing, by County to Contractor.
- B. **Changes in Quantities:** The County 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.

- i. 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, 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.
- ii. 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.
- iii. 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 County.

C. 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 County. The Contractor shall deliver any request for a change in the Work, Contract price, and/or completion time in writing to County 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 County 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 County.

D. Delays:

- i. In the event a delay is caused by the County, any other separate contractor employed by the County, or any party for whom the Contractor deems the County responsible, or the agents and employees of any of them, the Contractor shall inform the County 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 County 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 County 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 County or parties for whom the County 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 County written notice within ten (10) calendar days of the occurrence causing the delay.
- ii. 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 is made in writing to the County, 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 resumption of work to the County not less than ten (10) calendar days after work resumes. 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.

- iii. Requests for compensation for delays must be substantiated by itemized data and records clearly showing that the work delayed was 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.
- iv. 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.)

E. **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 County and to the County. 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 County 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 County and shall not stop work on the Project unless directed to do so by County.

- F. **Extra Work:** The County 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 County. Payment for such extra work shall be made as hereinafter provided in Section 19.7.
- G. **Payment Methods for Extra Work:** The extra work done by the Contractor as authorized and approved by County 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 County and the Contractor before said extra work is commenced, subject to all other conditions of the Contract:
- i. Unit prices; or
 - ii. Lump sum price; or
 - iii. 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.
- H. **Disputed Claims for Extra Work:** If one of the payment methods set forth in Section 19.7 is not agreed on by County, the County 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 County in its performance of the extra work. However, County 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.
- I. **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 County, but no additional compensation will be allowed for unusual weather. Furthermore, Contractor agrees that for any delays not caused by the County or any delays beyond the control of the County, no additional compensation will be due the Contractor and no change in the Contract price will be allowed by the County, only an extension of the Contract time will be considered by the County. The Contractor shall deliver requests for changes in the Contract price and/or completion time in writing to County 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 County and shall not stop work on the Project unless directed to do so by County.

SECTION 52. PAYMENT FOR WORK

- A. **Monthly Construction Estimates:** Monthly construction estimates shall be submitted to County, no more than once every thirty (30) calendar days.

- B. **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 County 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 County.

- C. **Progress Payments:** The County 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 County 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 County may withhold all or a portion of the progress payment until such dispute is resolved to the satisfaction of the County. If there are any objections or problems with the progress payment request, the County will notify the Contractor of such matters. If the progress payment request is approved by the County, payment will be made by the County 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 County and shall not stop work on the Project unless directed to do so by County. Any such disputes shall be handled as set forth in Section 31 of these General Conditions.

- D. **Retainage:** To ensure proper performance of the Contract, the County 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.)
- E. **Ownership of Material and Work:** All material and work covered by progress payments shall become the property of the County. 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 County. 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.
- F. **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 County. The Contractor agrees that Contractor shall indemnify and hold the County, its governing body, officers, agents, and employees 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 County 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.
- G. **Final Payment:** Within thirty (30) calendar days after the Final Acceptance of the Work, the County 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 County for any reason whatever.
- H. **Payment and Acceptance:** No payment, final or otherwise, nor partial or entire use, occupancy, or acceptances of the Work by the County 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.
- I. **Right to Audit:** The Contractor agrees that the County, 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 County upon County's request, at no cost to County.

SECTION 53. LIQUIDATED DAMAGES

Liquidated damages are not provided for by this Contract.

SECTION 54. INSPECTION FOR SUBSTANTIAL COMPLETION AND FINAL ACCEPTANCE

- A. **Substantial Completion:** The Contractor shall notify the County, 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 County. Inspection and testing shall take place at a time mutually agreeable to the Contractor and County. The inspection shall determine if substantial completion has been accomplished. If so, County 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.

- B. **Request for Final Acceptance:** The Contractor shall notify County, 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 County and final payment shall be made in accordance with Section 20.7 of these General Conditions.

- C. **Final Inspection:** County will conduct the final inspection, and may elect to have other persons of its choosing also participate in the inspection. If re-inspection is required, the Contractor shall reimburse the County for all costs of re-inspection or, at the County's option, the costs may be deducted from payments due to the Contractor.

- D. **As-Built Drawings:** No Contract retainage will be released prior to receipt of all approved As-Built Drawings.

- E. **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, County will furnish a written Certificate of Final Acceptance of the Work to the Contractor. County 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.

- F. **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 County and of all other liability of the County to the Contractor whatever, including liability for all things done or furnished in connection with the Work or the Contract.

SECTION 55. GUARANTEE OF WORK

- A. **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.
- B. **Defective Work:** The Contractor agrees it shall repair or replace, at Contractor's sole expense, and to the satisfaction of County, any work, material, equipment, or part that is found, by County, to be defective.
- C. **Repairs:** If, within any guarantee period, defects are noticed by County which require repairs or changes in connection with the guaranteed work, those repairs or changes being in the determination of County 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 County, such notice being given not more than four weeks after the expiration of any such guarantee period, and without any expense to the County:
- i. Place in satisfactory condition all guaranteed work and correct all defects therein; and
 - ii. Make good all damage to the structure, site, equipment, or contents thereof, which in the determination of County 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
 - iii. Make good any work or material or the equipment and contents of structures or the site disturbed in fulfilling any such guarantee.
- D. **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 County 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.
- E. The Design-Builder agrees to assign to Roanoke County at the time of final completion of the Work all manufacturer's warranties relating to equipment, materials, and labor used in the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties. If necessary as a matter of law, the Design-Builder may retain the right to enforce directly any such manufacturers' warranties during the one-year period following the date of Substantial Completion.
- F. **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 County, to comply with the terms of the guarantee and/or correct the Work, the

County 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.

- G. 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 56. 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 County a request to stop work or County on its own may issue a Stop Work Order. County designee 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 County. 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 County 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 County 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 County 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 57. TERMINATION OF CONTRACT FOR CAUSE

- A. **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 County 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 workers 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 County, or otherwise fails to comply with any of the terms or provisions of this Contract including, but not limited to, poor services, deficient work or material, the County 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.
- B. **Possession of Work:** Upon termination of the Contract, the County may take possession of the premises and of all material, tools, and appliances thereon and finish the Work by whatever method the County 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 County, together with any other cost or expenses of terminating the Contract and having it completed by others, together with any and all other damages County may be entitled to from the Contractor.

SECTION 58. TERMINATION FOR CONVENIENCE OF COUNTY

- A. **Termination for Convenience:** The County, at its discretion, may terminate this Contract at any time without cause, in whole or in part, upon giving the Contractor 7 days 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 County elect not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as County may require assigning to the County the Contractor's interest in all subcontracts and purchase orders designated by County. After all such steps have been taken to County's satisfaction; the Contractor shall receive as full compensation for termination and assignment only the following:
- i. All amounts then otherwise due under the terms of this Contract for actual work performed and approved by County; and
 - ii. 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, County shall have no further liabilities or obligations to Contractor of any nature.
- B. **Termination Effect on Surety:** In no event shall termination for the convenience of the County terminate the obligation of the Contractor's surety on its payment and performance bonds.

SECTION 59. PRECONSTRUCTION CONFERENCE

County 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 60. PROJECT SIGN(S)

The Contractor shall supply, erect, and maintain Project Sign(s) in accordance with the County of Roanoke Standard Detail. The sign(s) shall be located as directed by County. The Contractor shall not display any other signs or advertisements.

SECTION 61. ENTIRE CONTRACT.

This Contract, including any attachments, exhibits, and referenced documents, constitutes the complete understanding between the parties. This Contract may be modified only by written agreement properly executed by the parties.

SIGNATURE PAGE TO FOLLOW.

THIS AGREEMENT may be modified in writing by mutual agreement of both parties.

IN WITNESS WHEREOF, the parties hereto have signed this Contract by their authorized representatives.

(Full Legal Name of Consultant)

By _____

Printed Name and Title

Roanoke County Board of Supervisors

By _____

Printed Name and Title

Approved as to execution:

County Attorney/Assistant County Attorney

**CONTRACT 2023-023
BETWEEN COUNTY OF ROANOKE AND [VENDOR NAME]
FOR CAVE SPRING FIRE STATION ROOF REPLACEMENT**

EXHIBIT 1: SAMPLE CONTRACTOR'S INSURANCE AND BOND REQUIREMENTS

REFERENCE: IFB # 2023-023

INSURANCE REQUIREMENTS SECTION

The Contractor shall comply with the insurance requirements set forth in the Contract, including the items set forth below:

- A. Neither the Contractor nor any subcontractor shall commence work under this Contract until the Contractor has obtained and provided proof of the required insurance coverages to the County, and such proof has been approved by the County. The Contractor confirms to the County that all subcontractors have provided Contractor with proof of such insurance, or will do so prior to commencing any work under this Contract.

- B. Contractor, including all subcontractors, shall, at its and/or their sole expense, obtain and maintain during the life of this Contract the insurance policies and/or coverages required by this section. The County and its officers, employees, agents, assigns, and volunteers shall be added as an additional insured to the general liability and automobile coverages of any such policies and such insurance coverages shall be primary and noncontributory to any insurance and/or self-insurance such additional insureds may have. The Contractor shall immediately notify in writing the County of any changes, modifications, and/or termination of any insurance coverages and/or policies required by this Contract. The Contractor shall provide to the County with the signed Contract an Acord certificate of insurance which states in the description of operations section one of the two paragraphs below:
 - 1. The County and its officers, employees, agents, assigns, and volunteers are additional insureds as coverage under this policy includes ISO endorsement CG 20 33 which provides that the insured status of such entities is automatic if required by a contract or a written agreement. (If additional insured status is automatic under a different coverage form, Contractor must attach a copy of the coverage form to its certificate. Any required insurance policies shall be effective prior to the beginning of any work or other performance by Contractor and any subcontractors under this Contract).

OR

- 2. ISO endorsement CG 20 10 will be issued, prior to the beginning of any work or other performance by Contractor under this Contract, to the County and its officers, employees, agents, assigns, and volunteers naming them as an additional insured under the general liability coverage. (A copy of the binder confirming the issuance

must be attached to the certificate. Any required insurance policies shall be effective prior to the beginning of any work or other performance by Contractor and any subcontractors under this Contract).

However, if B (1) or (2) cannot be provided, the County's Risk Manager, in such Manager's sole discretion, may approve such other certificate of insurance or insurance document(s) that the Risk Manager deems acceptable. The County of Roanoke shall also be named as the Certificate Holder.

C. The following insurance coverages and limits are required in order to provide services or materials to Roanoke County general government agencies and the Roanoke County Public Schools. These limits may be adjusted depending on the type of service or materials being provided and the exposure to risk.

The Successful Offeror shall carry Liability Insurance in the amount specified below, including contractual liability assumed by the Successful Offeror, and shall deliver a Certificate of Insurance from carriers acceptable to the owner specifying such limits. The Certificate shall show the County of Roanoke and Roanoke County Public Schools, their supervisory boards and members thereof, officers, agents, employees and volunteers as an additional insureds on the Commercial General Liability, Automobile Liability and Excess/Umbrella Liability coverage. The additional insured status shall be endorsed to the coverage with the provision that this coverage "is primary to all other coverage the County of Roanoke and/or Roanoke County Public Schools may possess." A Certificate of Insurance evidencing the additional insured status must be presented to the County of Roanoke and/or Roanoke County Public Schools along with a copy of the Endorsement prior to work or services beginning.

The coverage shall be provided by a carrier(s) rated "Excellent" by A.M. Best. In addition, the insurer shall agree to give the County 30 days' notice of its decision to cancel coverage.

1. **Workers' Compensation**

Statutory Virginia Limits
Employers' Liability Insurance

- \$100,000 for each Accident by employee
- \$100,000 for each Disease by employee
- \$500,000 policy limit by Disease

2. **Commercial General Liability - Combined Single Limit**

- \$1,000,000 each occurrence including contractual liability for specified agreement
- \$2,000,000 General Aggregate (other than Products/Completed Operations)
- \$2,000,000 General Liability-Products/Completed Operations
- \$1,000,000 Personal and Advertising injury
- \$ 100,000 Fire Damage Legal Liability

Coverage must include Broad Form property damage and (XCU) Explosion, Collapse and Underground Coverage

3. **Business Automobile Liability** – including owned, non-owned and hired car coverage
 - Combined Single Limit - \$1,000,000 each accident

4. **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:

 - a. **Builders Risk:** At the discretion of the County, the Contractor, at its cost, shall obtain and maintain in the names of the County and the Contractor "all-risk" builders risk insurance (if approved by the County) 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.
 - b. **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 County at the value established in the approval and for portions of the work in transit.
 - c. **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 \$2,000,000. Should any unexpected special hazards be encountered during the performance of this Contract that could not have been reasonably foreseen, the Contractor shall, prior to performing any work involving the special hazard, immediately obtain this insurance as instructed by the County. 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 County, otherwise the Contractor shall assume full responsibility for the purchase with no charge back to the County.
 - d. **Deductible:** Deductible/self-insured retention amounts shall be reduced or eliminated upon written request from County. 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.
 - e. **Term:** Insurance shall remain in effect until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective work.
 - f. **Limit of Liability:** Nothing contained in these insurance requirements is to be construed as limiting the liability of Contractor or Contractor's insurance carriers. County 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 County should suffer an injury or loss in excess of the amount recoverable through insurance.

- i. Contractual Liability covers the following indemnity agreement: “The Successful Offeror agrees to indemnify, defend and hold harmless the County of Roanoke and Roanoke County Public Schools, their supervisory boards and members thereof, officers, agents, employees and volunteers from any claims, damages, suits, actions, liabilities and costs of any kind or nature, including attorneys’ fees, arising from or caused by the provision of any services, the failure to provide any services or the use of any services or materials furnished (or made available) by the Successful Offeror, provided that such liability is not attributable to the County or School Division’s sole negligence.”

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

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

- a. \$1,000,000 each occurrence including contractual liability for specified agreement occurrence
- b. \$2,000,000 General Aggregate (other than Products/Completed Operations)
- c. \$2,000,000 General Liability-Products/Completed Operations
- d. \$1,000,000 Personal and Advertising injury
- e. \$ 100,000 Fire Damage Legal Liability

Coverage must include Broad Form property damage and (XCU) Explosion, Collapse and Underground Coverage.

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

2. Umbrella Liability Insurance:

This coverage shall be written for minimum limit of:

- a. \$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. The intent of this insurance specification is to provide the coverage required and the limits expected for each type of coverage. With regard to the Business Automobile Liability and Commercial General Liability, the total amount of coverage can be accomplished through any combination of primary and excess/umbrella insurance. However, the total insurance protection provided for Commercial General Liability or for Business Automobile Liability, either individually or in combination with the Excess/Umbrella Liability, must total \$5,000,000 per occurrence. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded the County of Roanoke and Roanoke County Public Schools. This policy shall be endorsed to be primary with respect to the additional insured.

- E. **Contracts Less Than \$100,000:** The following minimum insurance limits apply unless specified otherwise in the Supplemental General Conditions:
1. Limits of Liability: For the Commercial General Liability policy:
 - a. \$1,000,000 each occurrence including contractual liability for specified agreement occurrence
 - b. \$1,000,000 General Aggregate (other than Products/Completed Operations)
 - c. \$1,000,000 General Liability-Products/Completed Operations
 - d. \$1,000,000 Personal and Advertising injury
 - e. \$ 100,000 Fire Damage Legal Liability

Coverage must include Broad Form property damage and (XCU) Explosion, Collapse and Underground Coverage.

- F. **Proof of Insurance Coverage:** The policies of insurance required by Sections 4.1, 4.2, or 4.3 shall be provided by a carrier(s) rated "Excellent" by A.M Best, licensed to do business in Virginia and maintained for the life of the Contract by the Contractor. Other insurance requirements include the following:
1. The Contractor shall furnish the County 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.
 2. The Contractor shall notify County 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 County and Risk Manager.
 3. The required insurance policies and coverages, excluding those for Workers' Compensation and Professional Liability, shall name the County of Roanoke, its governing body, officers, agents, volunteers and employees as additional insured 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 County's Risk Manager from the insurer with the certificate of insurance unless the County's Risk Manager agrees to another process. The County's Risk Manager may approve other documentation of such insurance coverages.
 4. Insurance coverage shall be in a form and with an insurance company approved by the County 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.
 5. The classification code numbers appearing on the Commercial General Liability coverage parts shall not exclude the symbols "X-C-U".
 6. The certificate holders on the Accord form Certificates of Insurance shall be:
Roanoke County Board of Supervisors
5204 Bernard Drive, Suite 300F
Roanoke, VA 24019-0798

Attn: Purchasing Dept.

- G. Compliance by the Contractor with the foregoing requirements as to carrying insurance shall not relieve the Contractor of their liabilities provisions of the Contract
- H. Contractual Liability covers the following indemnity agreement: “The Successful Offeror agrees to indemnify, defend and hold harmless the County of Roanoke and Roanoke County Public Schools, their supervisory boards and members thereof, officers, agents, employees and volunteers from any claims, damages, suits, actions, liabilities and costs of any kind or nature, including attorneys’ fees, arising from or caused by the provision of any services, the failure to provide any services or the use of any services or materials furnished (or made available) by the Successful Offeror, provided that such liability is not attributable to the County or School Division’s sole negligence.”
- I. The continued maintenance of the insurance policies and coverages required by the Agreement is a continuing obligation, and the lapse and/or termination of any such policies or coverages without approved replacement policies and/or coverages being obtained shall be grounds for termination of the Consultant/Contractor for default.
- J. Nothing contained in the insurance requirements is to be construed as limiting the liability of the Consultant/Contractor, and/or its subcontractors, or their insurance carriers. The County does not in any way represent that the coverages or the limits of insurance specified are sufficient or adequate to protect the Consultant/Contractor’s interest or liabilities, but are merely minimums. The obligation of the Consultant/Contractor, and its subcontractors, to purchase insurance shall not in any way limit the obligations of the Consultant/Contractor in the event that the County or any of those named above should suffer any injury or loss in excess of the amount actually recoverable through insurance.
- K. The classification code numbers appearing on the Commercial General Liability coverage parts shall not exclude the symbols "X-C-U".
- L. The intent of this insurance specification is to provide the coverage required and the limits expected for each type of coverage. With regard to the Business Automobile Liability and Commercial General Liability, the total amount of coverage can be accomplished through any combination of primary and excess/umbrella insurance. However, the total insurance protection provided for Commercial General Liability or for Business Automobile Liability, either individually or in combination with the Excess/Umbrella Liability, must total \$1,000,000 per occurrence. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded the County of Roanoke and Roanoke County Public Schools. This policy shall be endorsed to be primary with respect to the additional insured.
- M. The certificate holders on the Accord form Certificates of Insurance shall be:

Roanoke County Board of Supervisors
5204 Bernard Drive, Suite 300F

Roanoke, VA 24019-0798
Attn: Purchasing Dept.

N. Claims Made Policies

If the liability insurance has been issued on a "claims made" basis, the Successful Offeror must either:

1. Agree to provide certificates of insurance evidencing the above coverage for a period of three (3) years after final payment under the Agreement for General Liability policies. This certificate shall evidence a "retroactive date" no later than the beginning of the Offeror's work; or
2. Purchase the extended reporting period endorsement for the policies and provide certificates of insurance and a copy of the endorsement.

BOND REQUIREMENTS SECTION

The Contractor shall comply with the bond requirements set forth in the Contract, including the items set forth below:

- A. Except in cases of emergency, all bids for construction contracts shall be accompanied by a bid bond from a surety company selected by the bidder, which is legally authorized to do business in Virginia.
1. A bid, payment or performance bond for contracts for goods or services other than construction may be required if provided in the Invitation for Bid.
 2. The amount of the bid bond shall not exceed five percent (5%) of the total amount of the bid.
 3. In lieu of a bid bond, a bidder may furnish a certified check or cash escrow in the face amount required for the bond.
 4. Upon award of any public construction contract exceeding \$100,000 awarded to any prime contractor, such contractor shall furnish:
 - a. Performance bond in the sum of the contract amount.
 - b. Payment bond in the sum of the contract amount.
 5. Performance and/or payment bonds may be required for construction contracts below \$100,000 at the discretion of the County.
 6. In cases of emergency performance bonds/payment bonds are required within ten (10) calendar days of notice to proceed/project commencement.

END

**CONTRACT 2023-023
BETWEEN COUNTY OF ROANOKE AND VENDOR NAME
FOR CAVE SPRING FIRE STATION ROOF REPLACEMENT**

EXHIBIT 2: SCOPE OF WORK/FEE SCHEDULE

REFERENCE: IFB# 2023-023

The following are the services and/or items that the Successful Bidder will be required to provide and such services are to be included in the bids.

The services, work, and/or items that the Contractor shall provide in a timely and proper manner in accordance with the Contract include, but are not necessarily limited to, the following:

Reference IFB 2023-023 and Attachments.

IFB # 2023-023

ATTACHMENT E: Project Plans

Cave Spring Fire Department Roof Replacement

CAVE SPRING FIRE DEPARTMENT ROOF REPLACEMENT

4212 OLD CAVE SPRING ROAD

ROANOKE COUNTY, VIRGINIA 24018

BALZER PROJECT NO. 03220043.00



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
Shenandoah Valley
New River Valley / Lynchburg
www.balzer.cc

1208 Corporate Circle
Roanoke, VA 24018
540.772.9580



DRAWING ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	MH	MAN HOLE
AP	ACCESS PANEL	MFR	MANUFACTURER
ACT	ACOUSTIC CEILING TILE	MAS	MASONRY
ACPL	ACOUSTIC PLASTER	MO	MASONRY OPENING
A/CM	AIR CONDITIONING	MTL	MATERIAL
ALUM	ALUMINUM	MAX	MAXIMUM
AB	ANCHOR BOLT	MECH	MECHANICAL
ANDG	AND/GROUND	MET	METAL
APPROX	APPROXIMATELY	MFB	METAL BUILDING MANUFACTURER
AD	AREA DRAIN	MFD	METAL FLOOR DECKING
ARCH	ARCHITECTURAL	MRO	METAL ROOF DECKING
ASPH	ASPHALT	MIS	MISCELLANEOUS
		MISC	MISCELLANEOUS
		MOLD	MOLDING, MOULDING
		MTC	MOUNTING
BP	BASE PLATE	NOM	NOMINAL
BSMT	BASEMENT	NIC	NOT IN CONTRACT
BM	BEAM	NIS	NOT TO SCALE
BRG	BEARING	NOS	NUMBER
BT	BITUMINOUS	OC	ON CENTER
BLKG	BLOCKING	OPR	OPENING
BO	BOND	OPP	OPPOSITE
BOT	BOTTOM	OD	OUTSIDE DIAMETER
BRK	BRICK	OF	OF
BLDG	BUILDING	OA	OVERALL
		OH	OVERHANG
CPT	CARPET	PNL	PANEL
CO	CASED OPENING	PTD	PAINTED
CSMT	CASEMENT	PBD	PARTIAL BOARD
CLG	CEILING	PLST	PLASTER
C/H	CEILING HEIGHT	PLAM	PLASTIC LAMINATE
CL	CENTER LINE	PL	PLATE
C/N	CERAMIC TILE	PLGL	PLATE GLASS
CR	CHAIR RAIL	PWD	PLYWOOD
CLR	CLAR (ARCH)	PVC	POLYVINYL CHLORIDE
CLS	CLOSET	PFE	PORTABLE FIRE EXTINGUISHER
COL	COLUMN	LB	POUNDS/SQUARE FOOT
CONC	CONCRETE	PSI	POUNDS/SQUARE INCH
CMSU	CONCRETE MASONRY UNIT	PC CONC	PRECAST CONCRETE
CONST	CONSTRUCTION	PRFIN	PREFINISHED
CONT	CONTINUOUS	PL	PROPERTY LINE
CONTR	CONTROL JOINT	PROP	PROPOSED
CORR	CORRIDOR	QT	QUARRY TILE
COUNTR	COUNTER		
CRS	COURSE		
DEM	DEMOLITION		
DEPT	DEPARTMENT		
DNKG	DIMENSIONAL		
DIAM	DIAMETER		
DNM	DIMENSION		
DD	DITTO		
DR	DIVISION		
DR	DOOR		
DR	DOUBLE HUNG		
DS	DOWN SPOUT		
DRN	DRAIN		
DT	DRAIN TILE		
DWG	DRAWING		
ELEC	ELECTRIC		
EW	ELECTRIC WATER COOLER		
EP	ELECTRICAL PANEL BOARD		
ELV	ELEVATION		
EMER	EMERGENCY		
ENCL	ENCLOSE, ENCLOSURE		
ENG	ENGINEER(ING)		
ENT	ENTRANCE		
EQUM	EQUIPMENT		
EQUIP	EQUIPMENT		
EXH	EXHAUST		
EXIST	EXISTING		
EXP	EXPANSION BOLT		
EJ	EXPANSION JOINT		
EXT	EXTERIOR		
FB	FACE BRICK		
FBW	FACE OF BRICK		
FT	FEET, FOOT		
FN	FENCE		
FIN	FINISH		
FIN FL	FINISH FLOOR		
FIN FL	FIRE EXTINGUISHER CABINET		
FHC	FIRE HOSE CABINET		
FIRE	FIREPLACE		
FLR	FLOORING		
FD	FLOOR DRAIN		
FLUOR	FLUORESCENT		
FTG	FOOTING		
FDN	FOUNDATION		
FRA	FRESH AIR		
FRO	FURNISHED BY OTHERS		
GA	GAGE, GAUGE		
GALV	GALVANIZED		
GC	GENERAL CONTRACTOR		
GL	GLASS		
GLB	GLASS BLOCK		
GD	GRADE, GRADING		
GWB	GYPSUM WALL BOARD		
HC	HANDICAP		
HWR	HARDWARE		
HWD	HARDWOOD		
HWR	HEADER		
HG	HEATING		
HVAC	HEATING/VENTING/AIR CONDITIONING		
HD	HEAVY DUTY		
HGT	HEIGHT		
HIC	HEATING/VENTING/AIR CONDITIONING		
HMC	HOLLOW CORE		
HM	HOLLOW METAL		
HORIZ	HORIZONTAL		
HB	HOSE BIBB		
HW	HOT WATER HEATER		
ID	INSIDE DIAMETER		
INCL	INCLUDE(D)(ING)		
INSL	INSULATE		
INT	INTERIOR		
JAN	JANITOR'S CLOSET		
KITCHEN	KITCHEN		
KD	KNOCK DOWN		
KNCK	KNOCKOUT		
LBL	LABEL		
LAM	LAMINATE(D)		
LAV	LAVATORY		
LH	LEFT HAND		
LG	LENGTH, LONG		
LW	LOADWEIGHT		
LTL	LINTEL		
LVR	LIVE LOAD LOWER		

SYMBOLS & MATERIALS

100A DOOR NUMBER TAG

100 ROOM NUMBER TAG

6 WINDOW NUMBER TAG

2 WALL TAG

1 NOTE TAG

1 REVISION TAG

LETTER/NUMBER COMBINATION INDICATES ELEVATION OR DETAIL

SHEET NUMBER WHERE ELEVATION, SECTION OR DETAIL IS DRAWN

DRAWING DESIGNATION

SHEET DESIGNATION

BUILDING SECTION

WALL SECTION

REVISION CLOUD

ELEVATION

COLUMN LINE USE LETTERS VERTICALLY, TOP TO BOTTOM

EXISTING WALLS & DOORS

NEW WALLS & DOORS

DEMOLITION WALLS & DOORS

WALL-MOUNTED EMERGENCY EGRESS LIGHT W/ BACKUP BATTERY

ILLUMINATED EXIT LIGHT W/ BATTERY BACKUP

COMBINATION ILLUMINATED EXIT LIGHT W/ EMERGENCY EGRESS LIGHT W/ BACKUP BATTERY

ALUMINUM

BRICK (SECTION)

CONCRETE

C.M.U.

EARTH OR COMPACTED FILL

INSULATION BATTS

INSULATION RIGID

PLYWOOD LARGE SCALE

POROUS FILL

STEEL

WOOD BLOCKING

WOOD SHIMS

WOOD FINISH

BUILDING CODE INFORMATION

THIS SET OF CONSTRUCTION DOCUMENTS ADDRESSES A ROOF REPLACEMENT AT AN EXISTING BUILDING @ THE ABOVE REFERENCED ADDRESS. THERE WILL BE NO ADDITIONAL FLOOR AREA ADDED TO THIS BUILDING. THERE WILL BE NO STRUCTURAL MODIFICATIONS TO THIS BUILDING.

THIS RENOVATION / REPLACEMENT WORK IS BEING DESIGNED UNDER THE 2018 VIRGINIA EXISTING BUILDING CODE (VEBC), CHAPTER 6, SECTION 602 "ALTERATION- LEVEL 1", WHICH INCLUDES THE REMOVAL AND REPLACEMENT OF EXISTING MATERIALS, EQUIPMENT, ETC. WITH NEW MATERIALS, EQUIPMENT, ETC. THAT SERVE THE SAME PURPOSE.

CODE ANALYSIS
CODE EDITION: 2018 VEBC (2018 IEBC AND IBC w/ Virginia Amendments)
EXISTING BUILDING USE GROUP: B (FIRE STATION-NO CHANGE)
EXIST. BLDG. CONSTRUCTION TYPE: 3B (COMBUSTIBLE/NON-PROTECTED) W/ SOLID MASONRY WALLS
(NOTE: EXISTING BUILDING SQUARE FOOTAGE: 12,528 SF±
EXISTING ROOF AREA (RENOVATION AREA): 12,528 SF±

VEBC 601.4: ENERGY CONSERVATION - NO UPGRADE REQUIRED TO EXISTING BUILDING ENVELOPE ELEMENTS OTHER THAN ROOF INSULATION; ROOF INSULATION TO MEET 2018 VECC.

VEBC 602.2: ALL NEW WORK AND SHALL MAINTAIN EXISTING LEVEL OF FIRE PROTECTION AND EXISTING LEVEL OF PROTECTION OF MEANS OF EGRESS.

VEBC 602.3 ALL NEW ROOFING MATERIALS AND PROCESSES SHALL COMPLY WITH VEBC SECTION 602.3.2.1 AND VCC CHAPTER 15 "ROOFS", EXCEPTIONS AS NOTED FOR ROOFS WITH POSITIVE ROOF DRAINAGE:

602.3.2.1, EXCEPTION 1: ROOF REPLACEMENT IS NOT REQUIRED TO MEET 2% MIN. SLOPE FOR ROOFS THAT PROVIDE POSITIVE DRAINAGE. (PLEASE SEE ROOF RENOVATION NOTES ON SHEET A1.1 FOR FURTHER NOTES REGARDING OWNER'S DESIRED ROOF SLOPES.)

602.3.2.1, EXCEPTION 2: ROOF REPLACEMENT IS NOT REQUIRED TO MEET VCC CHAPTER 15 REQUIREMENTS FOR SECONDARY DRAINAGE FOR ROOFS THAT PROVIDE POSITIVE DRAINAGE. EXISTING SECONDARY DRAINAGE SHALL NOT BE REMOVED.

GENERAL CONSTRUCTION NOTES

- SEE PROJECT MANUAL FOR THIS PROJECT FOR ALL SPECIFICATIONS, PROJECT REQUIREMENTS AND OTHER NOTES NOT COVERED IN THE DRAWINGS.
- ALL DESIGNS, CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL COMPLY WITH THE 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC), 2018 VIRGINIA EXISTING BUILDING CODE (VEBC) AND 2018 VIRGINIA CONSTRUCTION CODE (VCC) AS A MINIMUM LEVEL OF CONSTRUCTION DETAIL AND QUALITY. ALL WORK INCLUDED IN THE CONSTRUCTION OF THIS PROJECT SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE CODE. BY COMMENCING CONSTRUCTION, CONTRACTOR ACKNOWLEDGES UNDERSTANDING OF THE VUSBC AND AGREES TO INCORPORATE ALL REQUIRED ELEMENTS, WHETHER INDICATED WITHIN THE DOCUMENTS OR NOT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY RELATE TO THE WORK OF THIS PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, ENGINEERING, PERMITTING AND ERECTION OF ALL TEMPORARY SCAFFOLDING, HOISTS, BRACING, FORM WORK, SHEETING, SHORING AND UNDERPINNING NECESSARY TO PERFORM THE WORK. TEMPORARY BRACING, SHEETING, SHORING, ETC., REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY/STABILITY OF THE EXISTING BUILDING, SIDEWALKS, UTILITIES, ETC. DURING CONSTRUCTION SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA.
- ALL PUBLIC AREAS SHALL REMAIN ACCESSIBLE TO THE HANDICAPPED, IN ACCORDANCE WITH VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC) AND AMENDMENTS AND APPLICABLE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES. PLEASE NOTE: ROOF REPLACEMENT DOES NOT REQUIRE ANY MODIFICATIONS FOR ACCESSIBILITY UPGRADES.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DRAWING DIMENSIONS PRIOR TO COMMENCING ANY WORK. ANY INCONSISTENCIES WITH THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT IN WRITING PRIOR TO COMMENCING WORK. FAILURE TO REPORT INCONSISTENCIES WILL RELIEVE ARCHITECT AND OWNER FROM ANY CLAIM FOR ADDITIONAL WORK REQUIRED RELATED TO THE INCONSISTENCY.
- UNDER NO CIRCUMSTANCES SHALL THESE DRAWINGS BE USED FOR SHOP DRAWINGS.
- WORK NOTED AS "N.I.C." IS NOT PART OF THIS CONTRACT, AND WILL BE HANDLED BY OWNER UNDER SEPARATE CONTRACT. ALL ITEMS NOT NOTED AS THUS ON DRAWINGS SHALL BE ASSUMED TO BE PART OF CONTRACT WORK.
- WORK NOT INDICATED ON A PART OF THE DRAWINGS, BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PIECES, SHALL BE REPEATED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY TEMPORARY UTILITIES AND SUPPORT FACILITIES NECESSARY TO COMPLETE THE WORK. ALL REQUIRED FEES FOR TEMPORARY SERVICES SHALL BE INCLUDED IN THE CONTRACT. PROVIDE ANY NECESSARY TEMPORARY CONSTRUCTION REQUIRED TO MAINTAIN OWNER/TENANT/PATRON USE OF THE EXISTING PROPERTY OUTSIDE OF THE LIMITS OF CONSTRUCTION.
- SUBSTITUTIONS FOR SPECIFIED MATERIALS AND PRODUCTS SHALL BE MADE ONLY WITH PRIOR APPROVAL FROM THE ARCHITECT.
- ALL ROOF ACCESS SHALL BE FROM EXTERIOR OF BUILDING VIA CONTRACTOR'S LADDER.
- ASBESTOS CONTAINING MATERIALS (ACM'S) ARE PRESENT IN A SMALL PORTION OF THE ROOF REPLACEMENT AREA AND SHALL BE REMOVED AS REQUIRED TO COMPLETE THE WORK. SEE SURVEY FOR ACM'S INCLUDED IN THE PROJECT MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS, METHODS AND SCHEDULING OF WORK AS REQUIRED TO MAINTAIN A COMPLETELY DRY BUILDING BELOW RE-ROOFING PROCESS.

DRAWING INDEX

REVISIONS		SHEET NO.	SHEET TITLE
DATE	DESCRIPTION		
		T1.1	COVER & PROJECT INFORMATION
		D1.1	EXISTING / DEMOLITION ROOF PLAN
		A1.0	ROOF DECKING REPLACEMENT PLAN
		A1.1	RENOVATION ROOF PLAN
		A1.2	RENOVATION ACCESSORIES ROOF PLAN
		A1.3	ROOF DETAILS

PROJECT DIRECTORY

BUILDING OWNER
COUNTY OF ROANOKE
Roanoke County General Services
Contact: Ronald Riquelmy
5235 Hollins Road
Roanoke, Virginia 24019
Phone: 540-777-6345

ARCHITECT
Balzer and Associates, Inc.
Contact: Robert Pilkington
1208 Corporate Circle
Roanoke, Virginia 24018
Phone: 540-772-9580
Fax: 540-772-9350

VICINITY MAP



PROJECT SITE:
CAVE SPRING
FIRE DEPT.
4212 OLD CAVE
SPRING RD.

CAVE SPRING FIRE DEPARTMENT
ROOF REPLACEMENT
COVER & PROJECT DOCUMENTATION
4212 OLD CAVE SPRING ROAD
ROANOKE COUNTY, VIRGINIA

DRAWN BY RWP / CJ
DESIGNED BY RWP
CHECKED BY RWP
DATE 07/26/2022
SCALE AS INDICATED
REVISIONS

T1.1
PROJECT NO 03220043.00

ROOF DEMOLITION GENERAL NOTES:

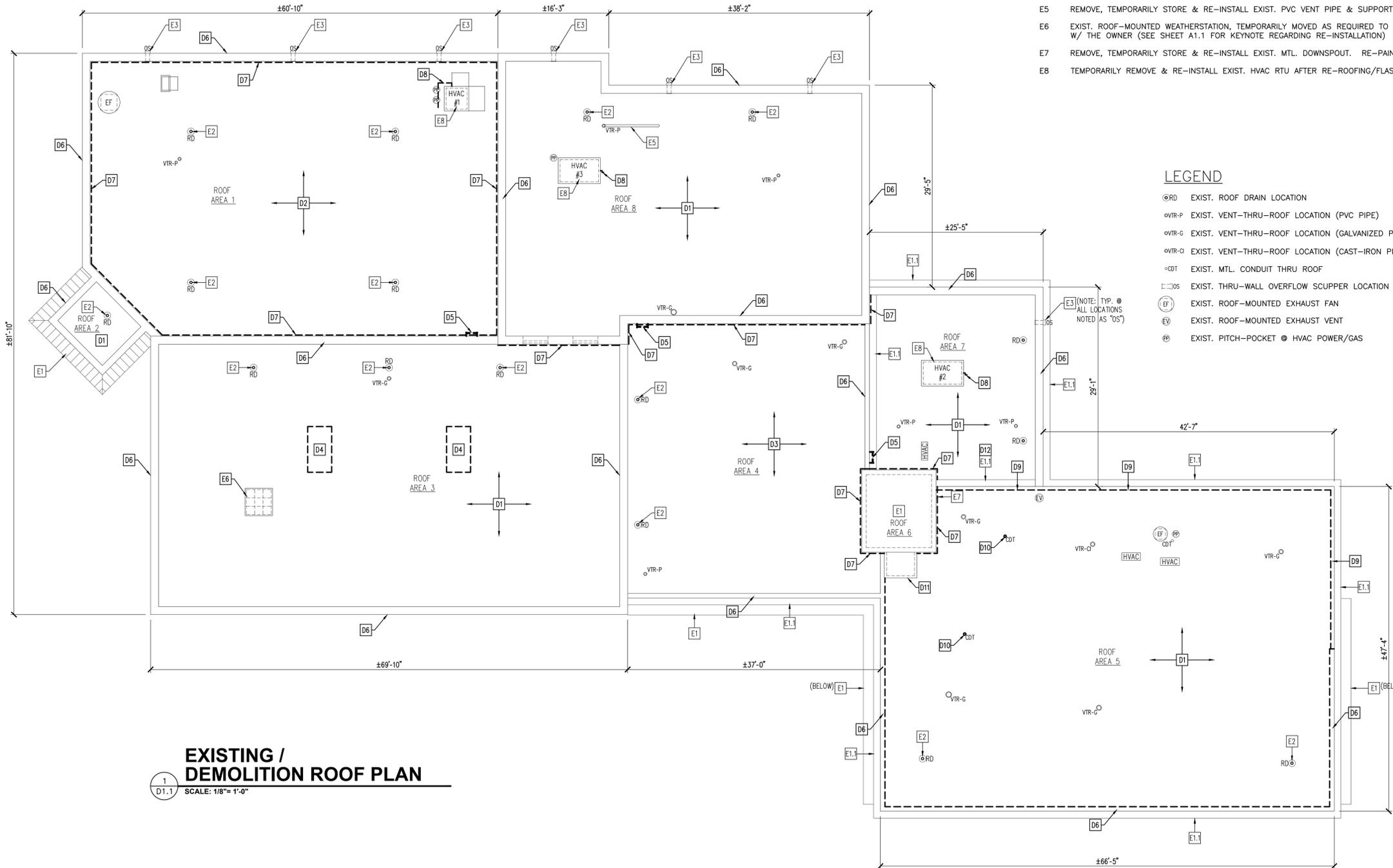
- PLEASE SEE "ASBESTOS & LEAD INSPECTION REPORT" DATED 06/13/2022 AND PREPARED BY HDH TECHNICAL, INC., INCLUDED IN THE PROJECT MANUAL.
- ASBESTOS CONTAINING MATERIAL (ACM'S) ARE PRESENT IN A SMALL PORTION OF EXISTING MATERIALS BEING REMOVED/DISTURBED IN AFFECTED ROOF REPLACEMENT AREAS (ROOF AREA 4). SEE SURVEY FOR ACM'S INCLUDED IN PROJECT MANUAL FOR LOCATIONS / TYPES OF ACM'S. CONTRACTOR SHALL REVIEW REPORT CAREFULLY AND DETERMINE IF ANY AND EXTENT OF ACM'S WILL BE DISTURBED AS PART OF THEIR REQUIRED WORK NECESSARY TO PERFORM THE WORK SHOWN IN THESE DRAWINGS. ALL ACM'S IN AFFECTED / DISTURBED ROOF AREAS SHALL BE REMOVED AND HANDLED PER ALL FEDERAL, STATE AND LOCAL CODES.
- LEAD IS PRESENT IN EXTERIOR PAINTED FINISHES AROUND AREAS AFFECTED BY ROOF-REPLACEMENT PROCESSES (IN ROOF AREA 4), BUT THE LEAD SURFACE TESTED DID NOT INCLUDE ENOUGH LEAD TO BE CONSIDERED A "LEAD-BASED PAINT SURFACE" PER THE LEAD INSPECTION REPORT NOTED. SEE SURVEY FOR LEAD-BASED PAINT INCLUDED IN PROJECT MANUAL FOR FURTHER DETAILS NECESSARY TO PERFORM THE WORK SHOWN IN THESE DRAWINGS. ALL LEAD-BASED PAINT IN AFFECTED / DISTURBED AREAS SHALL BE REMOVED AND HANDLED PER ALL FEDERAL, STATE AND LOCAL CODES.
- RESTORE EXPOSED FINISHES OF PATCHED AREAS AND WHERE NECESSARY EXTEND FINISH RESTORATION INTO RETAINED ADJOINING WORK IN A MANNER WHICH WILL ELIMINATE EVIDENCE OF PATCHING AND REFINISHING.
- ALL ITEMS SHOWN AS  ARE TO BE REMOVED (EXCEPT AS NOTED.)
- THE CONTRACTOR IS REQUIRED TO MAKE FIELD INSPECTIONS TO VERIFY EXISTING CONDITIONS.
- ALL EXISTING DIMENSION NOTES ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO NEW WORK. IF THE CONTRACTOR FINDS ANY DISCREPANCY BETWEEN EXISTING CONDITION AND DRAWING, CONTRACTOR MUST NOTIFY THE ARCHITECT IMMEDIATELY AND REQUEST CLARIFICATION.
- CONTRACTOR MUST REMOVE EXISTING FINISHES AS NECESSARY PRIOR TO INSTALLATION OF NEW FINISHES.
- DO NOT CUT AND PATCH WORK IN A MANNER THAT WOULD RESULT IN SUBSTANTIAL VISUAL EVIDENCE OF CUT AND PATCH WORK.
- USE MATERIALS FOR CUTTING AND PATCHING THAT ARE IDENTICAL TO EXISTING MATERIALS.
- ALL DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE U.N.O.
- QUANTITIES:** CONTRACTOR RESPONSIBLE FOR VERIFYING QUANTITIES OF ALL MATERIALS TO BE DEMOLISHED AND REMOVED FROM SITE, INCLUDING, BUT NOT LIMITED TO, STONE BALLASTS, ROOFING MEMBRANE, INSULATION AND ANY/ALL ACCESSORIES. MATERIAL QUANTITIES SHALL BE FACTORED INTO CONTRACTOR'S BASE BID.
- REMOVE ALL MEMBRANE ROOFING FROM BACKSIDE OF PARAPET WALLS WHERE REPLACING ROOFING. PREP PARAPET WALLS FOR NEW ROOFING AS REQ.
- REMOVE, STORE & RE-INSTALL ALL EXIST. ROOF-MOUNTED EQUIPMENT (RTU, ROOF FANS, ETC.) IF REQ. TO INSTALL NEW ROOF MEMBRANE UP & OVER EXIST. EQUIPMENT CURBS, OR PROVIDE ALTERNATE MEANS OF COUNTERFLASHING EXIST. CURBS. ONLY REPLACE ANY RTU/EQUIPMENT CURBS/SUPPORTS AS SPECIFICALLY NOTED.

DEMOLITION KEY NOTES:

- D1 REMOVE EXISTING EPDM MEMBRANE ROOFING & INSUL. DOWN TO EXIST. MTL. DECK.
- D2 REMOVE EXISTING TPO MEMBRANE ROOFING & INSUL. DOWN TO EXIST. MTL. DECK.
- D3 REMOVE EXISTING MODIFIED BITUMEN ROOFING & INSUL. DOWN TO EXIST. MTL. DECK.
- D4 REMOVE EXIST. SKYLIGHT, CURB & FLASHING; PREP OPNG. FOR NEW DECKING OVER.
- D5 REMOVE EXIST. TEMPORARY ACCESS LADDER
- D6 REMOVE EXIST. MTL. COPING/CAP FLASHING @ EXIST. PARAPET WALL.
- D7 REMOVE EXIST. CONT. COUNTERFLASHING OR ROOF TERMINATION BAR @ VERT. WALL; PREP WALL FOR NEW TERMINATION DETAIL OR FOR ROOF UP & OVER PARAPET (GC COORDINATE IN FIELD AS REQ. FOR NEW WORK NOTES)
- D8 REMOVE EXIST. RTU CONDENSATE DRAIN LINE AS REQ. TO INSTALL NEW ROOFING.
- D9 REMOVE EXIST. GRAVEL STOP FLASHING.
- D10 REMOVE EXIST. LIGHT FIXTURE & CONDUIT THRU ROOF. REMOVE ELEC. FEED BACK TO SOURCE.
- D11 REMOVE PORTION OF EXIST. MTL. SIDING @ BASE OF HOSE TOWER LADDER ENCLOSURE, SEE DETAIL 11/SHEET A1.3.
- D12 REMOVE & REPLACE PORTION OF SOFFIT UNDER EXIST. MANSARD (SPECIFIC LOCATION NOTED), SEE DETAIL 10/SHEET A1.3.

EXISTING-TO-REMAIN KEY NOTES:

- E1 EXIST. MTL. ROOF TO REMAIN (NO CHANGES)
- E1.1 EXIST. MTL. MANSARD ROOFING (STEEP PITCH) TO REMAIN.
- E2 EXIST. ROOF DRAIN TO REMAIN, REPLACE STRAINER, SEE DETAIL 3/SHEET A1.3.
- E3 EXIST. OVERFLOW THRU-WALL ROOF SCUPPER TO REMAIN IN SAME LOCATION (OR GC TEMPORARILY REMOVE & RE-INSTALL IF REQ.), RE-FLASH TO ROOF PER DETAIL 5/SHEET A1.3.
- E4 EXIST. MTL. GRAVEL STOP TO REMAIN (REMOVE EXIST. MEMBRANE ROOF AS REQ. & PREP. FOR NEW MEMBRANE ROOF)
- E5 REMOVE, TEMPORARILY STORE & RE-INSTALL EXIST. PVC VENT PIPE & SUPPORTS.
- E6 EXIST. ROOF-MOUNTED WEATHERSTATION, TEMPORARILY MOVED AS REQUIRED TO RE-ROOF UNDER, COORDINATE TIMING FOR MOVING W/ THE OWNER (SEE SHEET A1.1 FOR KEYNOTE REGARDING RE-INSTALLATION)
- E7 REMOVE, TEMPORARILY STORE & RE-INSTALL EXIST. MTL. DOWNSPOUT. RE-PAINT AFTER ALL ROOFING WORK.
- E8 TEMPORARILY REMOVE & RE-INSTALL EXIST. HVAC RTU AFTER RE-ROOFING/FLASHING PROCESSES.



LEGEND

- ⊙RD EXIST. ROOF DRAIN LOCATION
- VTR-P EXIST. VENT-THRU-ROOF LOCATION (PVC PIPE)
- VTR-G EXIST. VENT-THRU-ROOF LOCATION (GALVANIZED PIPE)
- VTR-C EXIST. VENT-THRU-ROOF LOCATION (CAST-IRON PIPE)
- ⊙CDT EXIST. MTL. CONDUIT THRU ROOF
- ⊔OS EXIST. THRU-WALL OVERFLOW SCUPPER LOCATION
- ⊙EF EXIST. ROOF-MOUNTED EXHAUST FAN
- ⊙EV EXIST. ROOF-MOUNTED EXHAUST VENT
- ⊙⊕ EXIST. PITCH-POCKET @ HVAC POWER/GAS

EXISTING / DEMOLITION ROOF PLAN
 1
 D1.1 SCALE: 1/8"= 1'-0"



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 Roanoke, VA 24018
 540.772.9580



CAVE SPRING FIRE DEPARTMENT
 ROOF REPLACEMENT
 EXISTING / DEMOLITION ROOF PLAN
 4212 OLD CAVE SPRING ROAD
 ROANOKE COUNTY, VIRGINIA

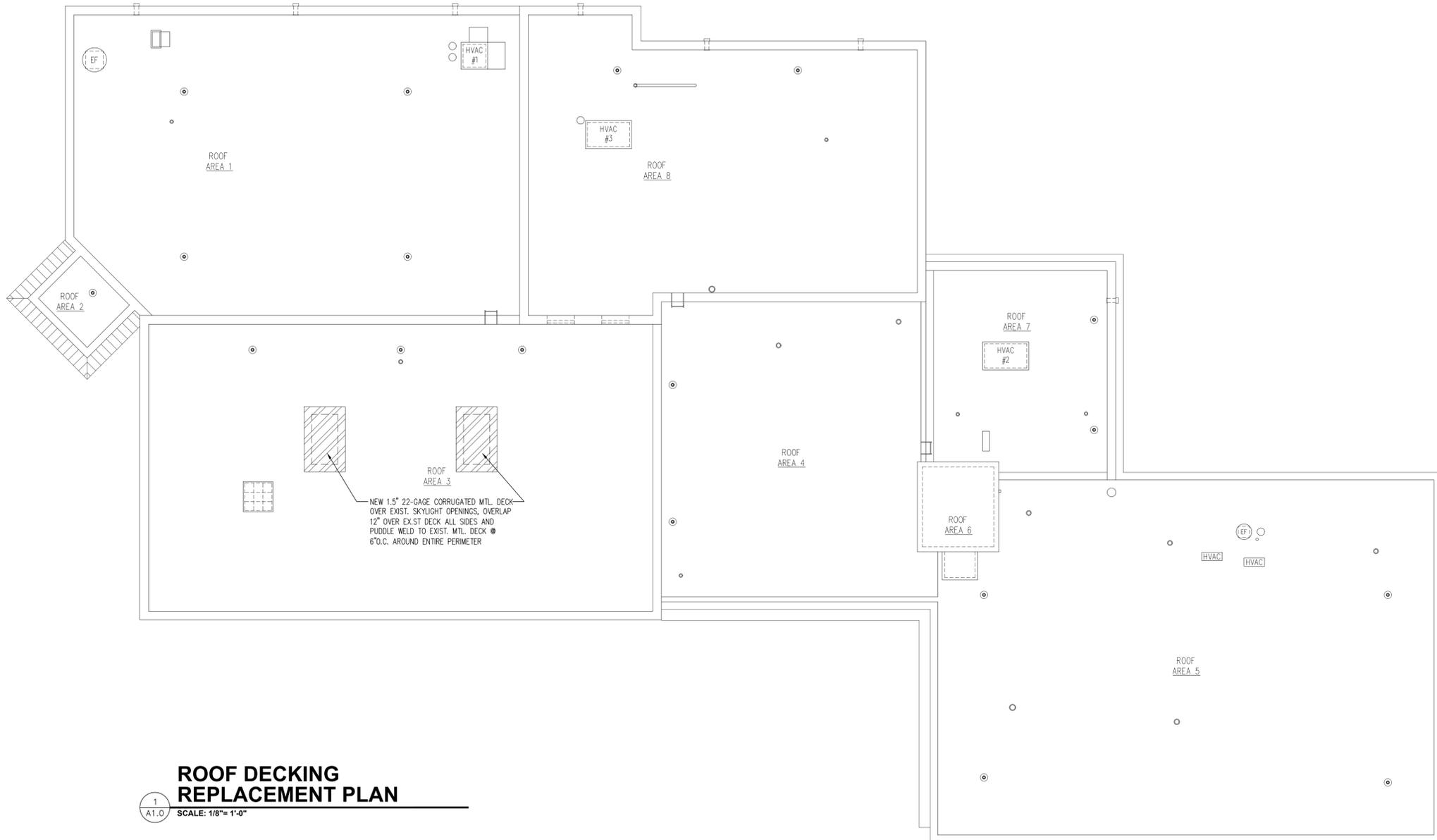
DRAWN BY RWP / CJ
 DESIGNED BY RWP
 CHECKED BY RWP
 DATE 07/26/2022
 SCALE AS INDICATED
 REVISIONS



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**ROOF DECKING
REPLACEMENT PLAN**

1
A1.0 SCALE: 1/8" = 1'-0"

CAVE SPRING FIRE DEPARTMENT
ROOF REPLACEMENT
ROOF DECKING REPLACEMENT PLAN

4212 OLD CAVE SPRING ROAD
ROANOKE COUNTY, VIRGINIA

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REVISIONS

A1.0
PROJECT NO 03220043.00

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ROOF RENOVATION GENERAL NOTES:

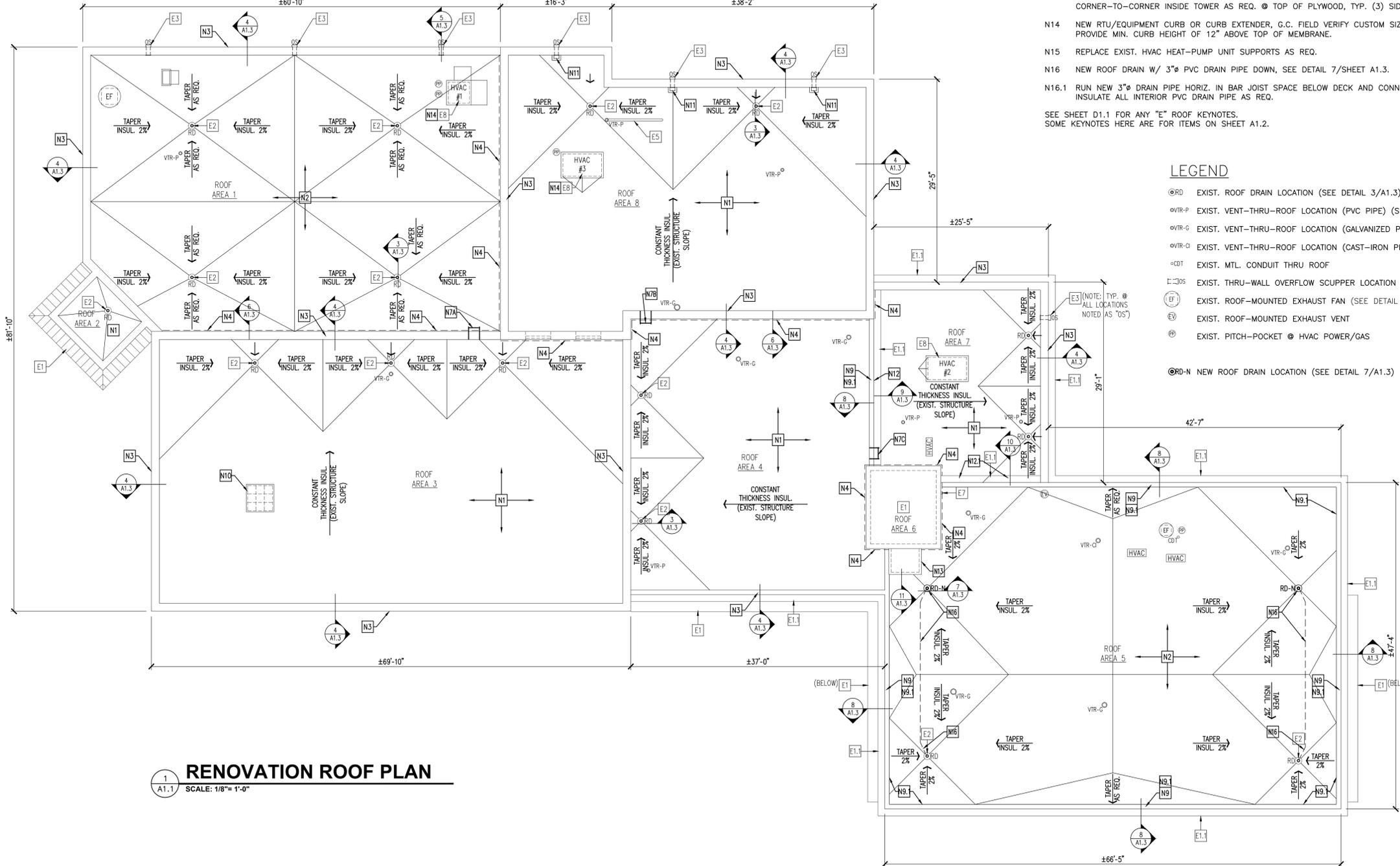
1. ROOFING MEMBRANE SYSTEM TO BE EXTENDED UP PARAPET WALLS AND TERMINATED UNDER METAL COPING (UNLESS SPECIFICALLY KEYNOTED TO RECEIVE TERMINATION BAR/COUNTERFLASHING). ALL ROOFING PROCESSES, INCLUDING REQUIRED MATERIALS FOR INSTALLATION, PRODUCT SPECIFICATIONS AND INSTALLATION OF ROOFING ASSEMBLY TO BE PER ROOFING MEMBRANE MANUFACTURER'S STRICT GUIDELINES.
2. ALL METAL WORK SHALL CONFORM TO LATEST EDITION OF "SMACNA" STANDARD DETAILS.
3. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ROOF PENETRATIONS WITH MECHANICAL & PLUMBING DRAWINGS, INCLUDING ROOF-MOUNTED MECH. UNITS, EXHAUST FANS, VENT PIPES, ETC. PRIOR TO CONSTRUCTION. REPORT ANY INCONSISTENCIES IMMEDIATELY TO ARCHITECT.
4. PROVIDE ALL REQUIRED INSULATED ROOF BOOTS (NEW BOOTS AT ALL EXISTING PIPE PENETRATIONS SHOWN), CURBS AND NEW WALKWAY PADS TO & AROUND ALL ROOF-MOUNTED EQUIPMENT.
5. RIGID INSULATION TO MEET R-30 (AVERAGE ACROSS ROOF), THICKNESS TO BE AS REQUIRED ($\pm 5.5"$ POLYISO PER SPECS.). ROOF SLOPE IS PREFERRED BY OWNER TO BE 1/4" PER 12" (2%) MINIMUM FOR ALL MAIN ROOF SLOPES AND CRICKETS TO MEET TYPICAL NEW CONSTRUCTION STANDARDS OF 2018 VCC 1507.13.1. THE RE-ROOFING IS ALLOWED BY CODE TO BE LESS THAN 2% PER 2018 VECB 602.3.2.1, EXCEPTION 1 (RE-ROOFING), BUT THIS EXCEPTION SHALL ONLY BE USED IN LOCATIONS WHERE IT IS NOT FEASIBLE TO PROVIDE THE 2% MINIMUM DUE TO FIELD CONDITIONS. CONTRACTOR SHALL NOTIFY ARCHITECT AND OWNER PRIOR TO ANY NEW ROOFING PROCESSES IF THERE WILL BE AREAS LESS THAN 2% SLOPE.
6. ANY NEW "CRICKETS" FORMED IN RIGID INSULATION ARE PREFERRED TO BE 1/4" PER 12" MIN. (2%), SEE NOTE 5 ABOVE. PROVIDE TOP LAYER PROTECTION MATERIAL PER MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE "CRICKETS" AROUND ALL MECHANICAL UNITS, VENTS, ETC. AS REQ.
8. ANY NEW OR MODIFIED PLUMBING VENTS SHALL BE HELD A MINIMUM OF 10'-0" FROM ANY RTU AIR INTAKE.
9. ANY DIMENSIONS SHOWN TO ROOF-TOP MECHANICAL EQUIPMENT ARE APPROXIMATE, MEASURED TO OUTSIDE EDGE OF PARAPET. CONTRACTOR SHALL COORDINATE EXACT DIMENSIONS REQUIRED WITH MECHANICAL AND FRAMING CONTRACTORS.
10. ALL ROOF ACCESS DURING CONSTRUCTION SHALL BE FROM EXTERIOR OF BUILDING VIA CONTRACTOR'S LADDER.
11. ALL WORK REQUIRED FOR INSTALLING NEW ROOFING AND ROOF ACCESSORIES SHOWN IS INTENDED TO BE CARRIED OUT FROM ABOVE ROOF. NO INTERIOR BUILDING DEMOLITION WILL BE ALLOWED. AS SUCH, CONTRACTOR SHALL INCLUDE WITH BID ANY NECESSARY DECKING REMOVAL AND REPLACEMENT AS REQUIRED TO INSTALL DRAINS OR OTHERWISE PERFORM ALL WORK SHOWN HEREIN.
12. SEE SHEET A1.2 FOR ROOF ACCESSORY CALLOUTS SUCH AS WALK-PADS, ACCESS LADDERS, PAINTING OF GAS PIPING, CONDENSATE DRAINS, ETC.
13. REMOVE, STORE & RE-INSTALL ALL EXIST. ROOF-MOUNTED EQUIPMENT (RTU, ROOF FANS, ETC.) IF REQUIRED TO INSTALL NEW ROOF MEMBRANE UP & OVER EXIST. EQUIPMENT CURBS, OR PROVIDE ALTERNATE MEANS OF COUNTERFLASHING EXIST. CURBS. ONLY REPLACE ANY RTU/EQUIPMENT CURBS/SUPPORTS AS SPECIFICALLY NOTED.

RENOVATION KEY NOTES:

- N1 NEW 5.5" POLYISO RIGID INSUL. W/ NEW TPO MEMBRANE ROOFING, SEE SPECS. (NOTE: RIGID INSUL. CONSTANT THICKNESS & SLOPED W/ ROOF STRUCTURE, EXCEPT WHERE 2% MIN. CRICKET REQ.)
 - N2 NEW 5.5" MIN. POLYISO RIGID INSUL. W/ NEW TPO MEMBRANE ROOFING, SEE SPECS. (NOTE: RIGID INSUL. SLOPED TO DRAINS 2% MIN. AS REQ.)
 - N3 NEW MTL. COPING/CAP FLASHING W/ SLOPED TOP, SEE DETAIL 4/SHEET A1.3
 - N4 NEW ROOF TERMINATION BAR/COUNTERFLASHING @ VERT. WALL, SEE DETAIL 6/SHEET A1.3.
 - N5 INSTALL NEW PVC CONDENSATE DRAIN LINE FROM EXIST. RTU TO ROOF DRAIN LOCATION. MATCH EXIST. PIPE DIAMETER. PROVIDE NEW PIPE SUPPORT(S) AS REQ., SEE SPECS.
 - N6 PAINT EXIST. EXPOSED GAS PIPING "YELLOW", REMOVE ANY EXIST. RUST, APPLY NEW PRIMER & (2) COATS FINISH.
 - N6.1 REPLACE EXIST. SUPPORT(S) FOR EXIST. GAS PIPING.
 - N7 NEW MTL. ROOF ACCESS LADDER, SEE DETAIL 15/SHEET A1.3. (NOTE: LETTER IN KEYNOTE CORRESPONDS TO HEIGHT IN DETAIL.)
 - N8 NEW 30"x30" ROOF MEMBRANE WALKWAY PADS (ROOF MFR.'S STANDARD, SEE SPECS.)
 - N9 NEW MTL. EDGE/CAP FLASHING DOWN OVER EXIST. MTL. MANSARD ROOF, LAP NEW MEMBRANE ROOFING/MEMBRANE FLASHING OVER MTL. EDGE & CONT. SEALANT, SEE DETAIL 8/SHEET A1.3
 - N9.1 TAPER NEW INSUL. @ ROOF EDGE DOWN TO NEW MTL. EDGE FLASHING, SEE DETAIL 8/SHEET A1.3.
 - N10 EXIST. WEATHERSTATION TO BE RE-INSTALLED IN PREVIOUS LOCATION, INSTALL MEMBRANE WALK-PADS UNDER THE WEATHERSTATION PALLET BASE AND WEIGHT THE PALLET BASE W/ CMU BLOCKS SIMILAR TO PREVIOUS.
 - N11 TAPER NEW INSUL. & TRANSITION MEMBRANE ROOFING DOWN TO EXIST. OVERFLOW SCUPPER AS REQ.
 - N12 EXTEND NEW MEMBRANE ROOFING UP PARAPET WALL TO UNDERSIDE OF EXIST. MANSARD ROOF, APPLY NEW CONT. TERMINATION BAR, SEE DETAIL 9/A1.3
 - N12.1 EXTEND NEW MEMBRANE ROOFING UP PARAPET WALL TO UNDERSIDE OF MANSARD ROOF (REPLACE MANSARD SOFFIT), APPLY NEW MEMBRANE FLASHING BY MEMBRANE MFR. ON UNDERSIDE OF MANSARD SOFFIT; SEE DETAIL 10/ SHEET A1.3.
 - N13 NEW FLASHING AROUND HOSE TOWER LADDER MTL. ENCLOSURE, REMOVE PORTION OF EXIST. MTL SIDING @ BASE ($\pm 1-6"$), APPLY NEW PARAPET SUBSTRATE FROM TOP OF ROOF DECK TO UNDERSIDE EXIST. MTL. SIDING, INSTALL NEW 3"x3" STL. ANGLE CORNER-TO-CORNER INSIDE TOWER AS REQ. @ TOP OF PLYWOOD, TYP. (3) SIDES OF TOWER, SEE DETAIL 11/A1.3.
 - N14 NEW RTU/EQUIPMENT CURB OR CURB EXTENDER, G.C. FIELD VERIFY CUSTOM SIZE OF CURB REQUIRED PER HVAC UNITS, TO PROVIDE MIN. CURB HEIGHT OF 12" ABOVE TOP OF MEMBRANE.
 - N15 REPLACE EXIST. HVAC HEAT-PUMP UNIT SUPPORTS AS REQ.
 - N16 NEW ROOF DRAIN W/ 3" PVC DRAIN PIPE DOWN, SEE DETAIL 7/SHEET A1.3.
 - N16.1 RUN NEW 3" DRAIN PIPE HORIZ. IN BAR JOIST SPACE BELOW DECK AND CONNECT TO EXIST. ROOF DRAIN PIPE WHERE SHOWN; INSULATE ALL INTERIOR PVC DRAIN PIPE AS REQ.
- SEE SHEET D1.1 FOR ANY "E" ROOF KEYNOTES.
SOME KEYNOTES HERE ARE FOR ITEMS ON SHEET A1.2.

LEGEND

- ⊙RD EXIST. ROOF DRAIN LOCATION (SEE DETAIL 3/A1.3)
- ⊙VTR-P EXIST. VENT-THRU-ROOF LOCATION (PVC PIPE) (SEE DETAIL 1/A1.3)
- ⊙VTR-G EXIST. VENT-THRU-ROOF LOCATION (GALVANIZED PIPE) (SEE DETAIL 1/A1.3)
- ⊙VTR-C EXIST. VENT-THRU-ROOF LOCATION (CAST-IRON PIPE) (SEE DETAIL 1/A1.3)
- ⊙CDT EXIST. MTL. CONDUIT THRU ROOF
- ⊙OS EXIST. THRU-WALL OVERFLOW SCUPPER LOCATION (SEE DETAIL 5/A1.3, OR SIM)
- ⊙EF EXIST. ROOF-MOUNTED EXHAUST FAN (SEE DETAIL 2/A1.3)
- ⊙EV EXIST. ROOF-MOUNTED EXHAUST VENT
- ⊙ EXIST. PITCH-POCKET @ HVAC POWER/GAS
- ⊙RD-N NEW ROOF DRAIN LOCATION (SEE DETAIL 7/A1.3)



1 RENOVATION ROOF PLAN
A1.1 SCALE: 1/8" = 1'-0"



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CAVE SPRING FIRE DEPARTMENT
ROOF REPLACEMENT
RENOVATION ROOF PLAN

4212 OLD CAVE SPRING ROAD
ROANOKE COUNTY, VIRGINIA

DRAWN BY RWP / CJ
DESIGNED BY RWP
CHECKED BY RWP
DATE 07/26/2022
SCALE AS INDICATED
REVISIONS

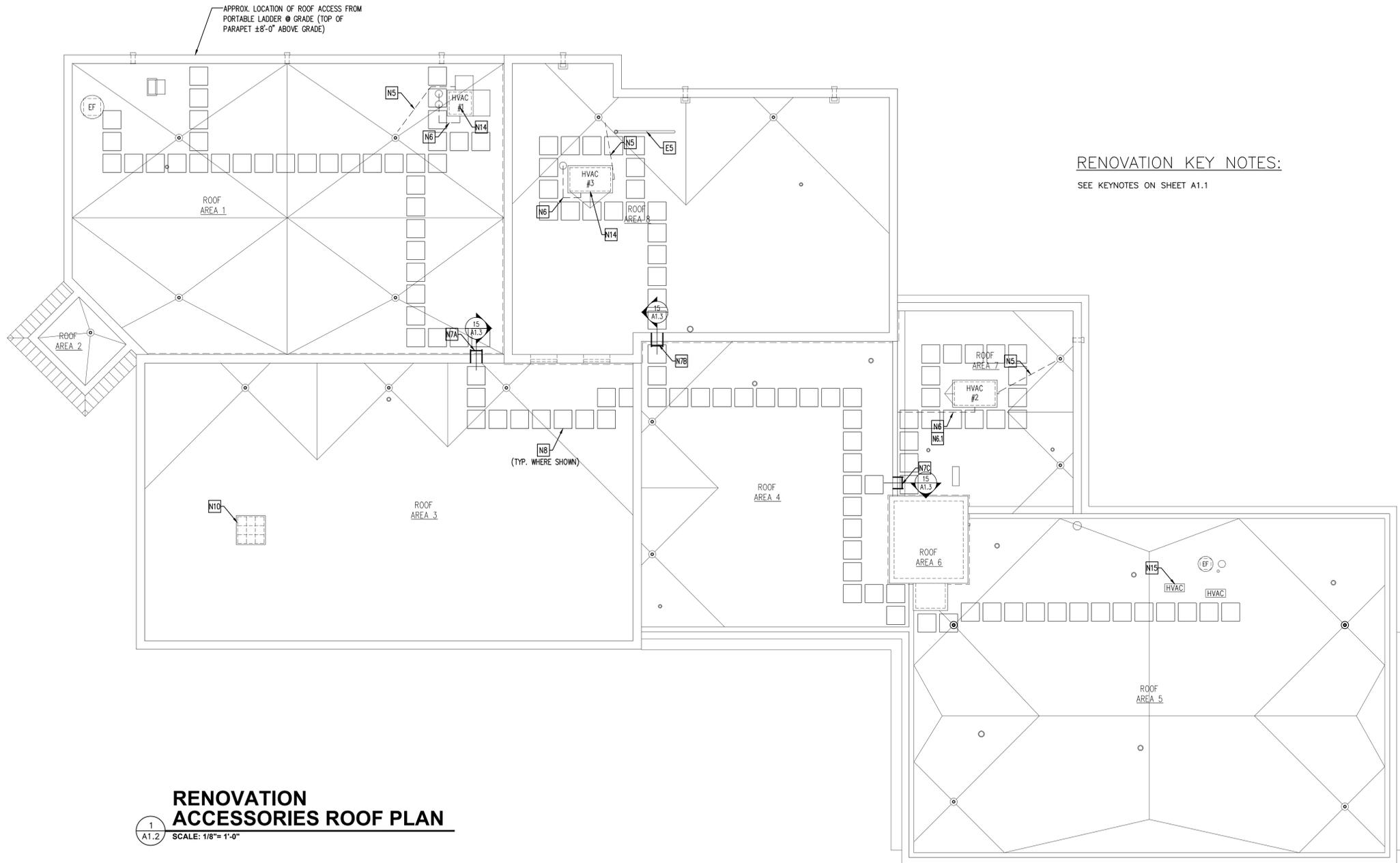


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1
A1.2
RENOVATION ACCESSORIES ROOF PLAN
 SCALE: 1/8" = 1'-0"

CAVE SPRING FIRE DEPARTMENT
 ROOF REPLACEMENT
 RENOVATION ACCESSORIES ROOF PLAN

4212 OLD CAVE SPRING ROAD
 ROANOKE COUNTY, VIRGINIA

DRAWN BY: RWP / CJ
 DESIGNED BY: RWP
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 DATE: 07/26/2022
 SCALE: AS INDICATED
 REVISIONS:

IFB # 2023-023

ATTACHMENT F: Project Manual

Cave Spring Fire Department Roof Replacement
4212 Old Cave Spring Road

Balzer and Associates, Inc.

Dated July 26, 2022

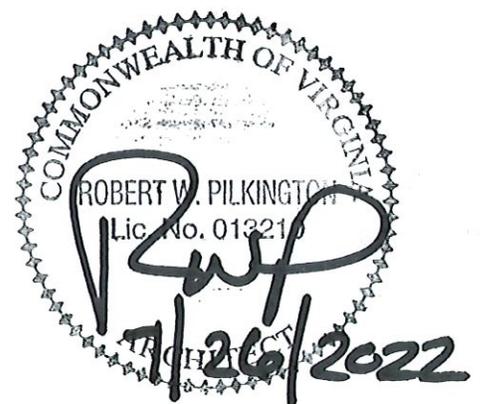
PROJECT MANUAL FOR:

CAVE SPRING FIRE DEPARTMENT ROOF REPLACEMENT

4212 OLD CAVE SPRING ROAD
ROANOKE, VIRGINIA
(ROANOKE COUNTY)

BALZER AND ASSOCIATES, INC
PROJECT NUMBER 03220043.00

JULY 26, 2022



BALZER AND ASSOCIATES, INC.
PLANNERS•ARCHITECTS•ENGINEERS•SURVEYORS
1208 Corporate Circle•Roanoke, Virginia 24018•TEL (540) 772-9580•FAX (540) 772-8050

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

SPECIFICATION INDEX

PROJECT DIRECTORY

DRAWING & DOCUMENT INDEX

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DIVISION 2 – EXISTING CONDITIONS

024119 Selective Structure Demolition

DIVISION 4 – MASONRY

040120 Maintenance of Unit Masonry

DIVISION 5 – METALS

055000 Metal Fabrications

DIVISION 6 – WOOD, PLASTICS AND COMPOSITES

061053 Miscellaneous Rough Carpentry

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

070150.19 Preparation for Re-Roofing

075423 TPO Membrane Roofing

076200 Sheet Metal Flashing and Trim

077100 Roof Specialties

077200 Roof Accessories

079200 Joint Sealants

DIVISION 9 - FINISHES

099100 Painting

DIVISION 22 - PLUMBING

221426 Roof Drains

“Asbestos & Lead Inspection Report” by HDH Technical, Inc.

“Existing Roof Condition Assessment” by Thompson & Litton

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

PROJECT DIRECTORY

OWNER:

Roanoke County
General Services
1216 Kessler Mill Road
Salem, Virginia 24153
Phone: (540) 777-6345
Fax: (540) 387-6112

Contact:

Ronald Riquelmy
Facility & Capital Project Support Specialist
Email: rriquelmy@roanokecountyva.gov

TENANT:

Cave Spring Fire Department
4212 Old Cave Spring Road
Roanoke County, Virginia 24018
Phone: (540) 777-8705

Contact:

Dustin Campbell, Deputy Chief
Email: dccampbell@roanokecountyva.gov
Cell Phone: (540) 815-6444

ARCHITECT:

Balzer and Associates, Inc.
1208 Corporate Circle
Roanoke, Virginia 24018
Phone: (540) 772-9580
Fax: (540) 772-8050

Contact:

Robert Pilkington, Architect
Email: rpilkington@balzer.cc
Cell Phone: (540) 641-0896

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

DRAWING & DOCUMENT INDEX

1. **DRAWINGS:**
 - T1.1 Cover & Project Information
 - D1.1 Existing / Demolition Roof Plan
 - A1.0 Roof Decking Replacement Plan
 - A1.1 Renovation Roof Plan
 - A1.2 Renovation Accessories Roof Plan
 - A1.3 Roof Details

2. **SPECIFICATIONS:** Project Manual for:
Cave Spring Fire Department – Roof Replacement
Divisions 1-9
Balzer and Associates, Inc.
June 24, 2022

3. **ASBESTOS SURVEY:** “Asbestos & Lead Inspection”
Prepared by HDH Technical, Inc.
Issue Date: 06/13/2022
(note: Included at end of Project Manual)

4. **ROOF CONDITION:** “Existing Roof Condition Assessment”
Prepared by Thompson & Litton
Issue Date: 06/18/2021
(note: Partial report included at end of Project Manual)

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 011000 - SUMMARY

A. Work Covered by the Contract Documents:

1. Project Identification: Project consists of a roof replacement of approximately 12,528 s.f. of membrane roof on an existing building, along with minor parapet wall cap flashing repairs or replacement.
 - a. Project Location: 4212 Old Cave Spring Road, Roanoke County, Virginia.
 - b. Owner: Roanoke County
 - c. Owner's Representative: Ronald Riquelmy
Facility & Capital Project Support Specialist
County of Roanoke
1216 Kessler Mill Road
Salem, Virginia 24153
Phone: 540-777-6345
2. Architect Identification: Balzer and Associates, Inc., 1208 Corporate Circle, Roanoke, Virginia, 24018.
3. The Work consists of the removal and replacement of the existing roofing over an area of approximately 12,528 s.f. of the existing building. There are multiple roofing types across the entire roof including membrane roofing and built-up roofing. The Work includes the removal of any/all existing roof ballasts, built-up roofing or roofing membrane and insulation (including removal of asbestos-containing materials one area of the roof); removing existing roof accessories, cap flashing, etc.; if required, the removal and storage of existing roof-mounted fans and HVAC units; installation of new TPO fully-adhered membrane roofing and insulation; re-installation of any existing roof-mounted fans and HVAC units if removed during demolition; and re-installation of any existing accessories, etc. The Work also includes the installation of new roof-access ladder(s) as indicated in Drawings. The Work includes all labor and materials necessary to perform the building construction indicated in the Drawings and Specifications. Contractor shall base his bid on the supplied information, and shall also include any additional details, equipment, systems or materials not necessarily shown, but implied, in order to deliver a complete and finished product to the Owner.
4. Contract Summary: The General Construction Contract shall include all work required to complete the Project, including all required permits and inspections by the local Building Official; all work as detailed in the Construction Documents; all required design and installation of any mechanical, electrical and plumbing components as indicated in Drawings and as required to obtain necessary permits and complete the project; temporary facilities and controls as required by the Contractor; and any additional requirements the Contractor may need in order to deliver a complete building to the Owner at the Project conclusion. Omissions from the Contract shall include the

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

following: costs for coordination and payment for required independent special inspections; or work outlined herein under other contracts.

- B. Contract: Single general construction contract; the County of Roanoke utilizes a specific Construction Contract and General Conditions developed specifically by and for projects constructed by independent contractors within and for the County, referenced in the County's Invitation to Bid (IFB) for this project. A draft copy of the standard contract and conditions will be provided with the IFB.
- C. Use of Premises & Work Sequence: Contractor shall have full use of limits of building exterior site construction for construction operations, allowing Owner to continue full use of the existing building interior. Contractor shall be required to contain ongoing work in such ways as to keep the Owner's continuing use of existing facilities. The onsite parking lot shall not be used by the Contractor or their sub-contractors for parking, building access or staging of materials. Contractor shall coordinate and schedule, during construction, times with the Owner to perform any interior work.
- D. Work Under Other Contracts: Owner may award a separate contract for performance of certain work outside the scope of this project; any work outside the scope of this project is indicated as "N.I.C." (not in contract) in Construction Documents.
- E. See Drawings for additional project notes not necessarily included in Project Manual.
- F. All roof access shall be from exterior of building, see general construction notes in Drawings.
- G. Contractor shall be responsible for all means, methods, processes and scheduling for maintaining a dry building interior throughout re-roofing processes.

SECTION 012200 - UNIT PRICES

Contractor shall include with the Contract a list of unit prices for materials or services to be added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased. Unit prices shall be included for the following:

- Hauling (\$/ton/mile)
- Curb Replacement for exhaust fans, etc. (\$/per typical replacement)
- Cap Flashing Replacement (\$/per linear foot) (Note: for any additional beyond that shown to be replaced in the Drawings)
- Parapet Blocking (\$/per 12'-0" section, including bolting)
- Roof Drain Replacement (\$/per roof drain) (Note: for any additional beyond that shown to be replaced in the Drawings)
- Roof Drain Supports (\$/per roof drain location) (Note: for any additional beyond that shown to be replaced in the Drawings)

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- Thru-Wall Scupper Replacement (\$/per typical replacement)

SECTION 12300 - ALTERNATES

- A. Any proposed Substitution or Alternate to materials specifically specified in the Drawings or Specifications, either as specific materials, “Basis-of-Design” or specified as a grade of material, shall be submitted to the Owner for review prior to submission of Bid. Such Substitution(s) or Alternate(s) shall be of similar quality or grade as that specified or indicated in the Drawings and Specifications and shall be submitted with a written explanation for the substitution. Any Substitution or Alternate submitted shall include cut-sheets for the proposed alternate, for review by the Owner and/or Architect.
- B. ADD/ALTERANTE #1: See Specification Section 075423, “THERMOPLASTIC POLYOLEFIN (TPO) ROOFING” for requirements for ADD/ALTERNATE to provided with Bid for increased warranty for the roofing system.

SECTION 012600 - CONTRACT MODIFICATIONS

Contractor-initiated proposals which involve modifications to the Contract Sum or Contract Time shall be submitted on AIA Document G709. Modifications to the Contract Sum or Contract Time shall be submitted on AIA Document G701 (standard change order form). General Contractor, Owner’s designated representative and Architect shall all sign form before any change order shall be billed for.

SECTION 012900 - PAYMENT PROCEDURES

Payment

Applications for Payment shall be submitted to the Owner (and/or Architect if chosen by Owner) on AIA Document G702 “Application and Certification for Payment”. Payment application times for each progress payment shall be included in the Agreement between Owner and Contractor. Each Application for Payment shall include a Schedule of Values for all Work completed to date, including a line item for each Specification Section, and shall be submitted on AIA Document G703 “Continuation Sheet to Application for Payment”. The Schedule of Values shall be updated with each pay request to reflect approved Change Orders. After the project has reached Substantial Completion, Contractor shall submit an Application for Payment showing 100 percent completion (minus retainage) for portion of the Work claimed as substantially complete. After all work required by the Agreement between Owner and Contractor has been completed, Contractor shall submit a final Application for Payment for full payment of the Contract Sum.

Retainage

Five (5)% of completed work, with full release on completion of punch list repairs.

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Change Orders

The combined overhead and profit included in the total cost to the Owner of a change in the Work shall be based on the following schedule:

1. For the Contractor, for Work performed by the Contractor's own forces, **10%**.
2. For the Contractor, for Work performed by the Contractor's Subcontractors, **10%**.
3. For each Subcontractor involved, for Work performed by that Subcontractor's own forces, **10%**.
4. For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractors, **no markup**.
5. In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization.
6. Change orders with any markup for services performed by either the General Contractor or their sub-contractors shall only be for work or items which were not expressed or intended by the Construction Drawings, specifically requested by the Owner, or due to unforeseen circumstances. Change orders for work due to omissions or negligence by the General Contractor or any sub-contractor shall have no markup for cost of services.

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

- A. All Project Management and Coordination required for the Work to be completed within the Contract Time and Contract Sum shall be the responsibility of the General Contractor. Coordination shall include all operations necessary for the efficient and orderly installation of each part of the Work. General Contractor shall provide a full-time on-site Job Superintendent to ensure coordination between all trades and disciplines, as well as any other supervision as the Contractor requires.
- B. Contractor shall be responsible for all means, methods, processes and scheduling of Work for maintaining a completely dry building interior throughout re-roofing processes.
- C. Contractor shall submit to the Owner, prior to submission of Bid, any scheduling concerns regarding how to schedule the Work to maintain the dry building interior.

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

The General Contractor shall prepare a written Schedule of Construction (bar chart), showing the order of construction for each part of the Work indicating critical path items, and shall arrange necessary meetings with the Owner for on-site review of construction progress. The schedule shall be updated as required by Change Orders, down time due to weather, or other occurrences which would have an affect on the overall Contract Time or Construction Phasing.

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Project Meetings

Contractor shall establish and schedule regular job-site meetings, frequency of meetings to be established between Owner and Contractor prior to construction. Job site meetings are to be attended by General Contractor's onsite Job Superintendent and/or Project Manager, Owner's representative, and Architect (if chosen to by Owner). General Contractor shall notify all parties of changes in scheduled meetings at least one day in advance.

Request For Interpretation (RFI'S)

Immediately upon discovery of the need for interpretation of the Contract Documents, Contractor shall prepare written RFI's to be submitted to Owner and/or Architect for review. All RFI's shall originate from the General Contractor. All RFI's shall include a full written description of item needing interpretation, including references to drawing sheet names and details titles as appropriate. Owner and/or Architect shall be allowed 7 working days for initial response.

SECTION 013300 - SUBMITTALS

Contractor shall submit to the Architect for approval submittals for all proposed construction as noted in the Specifications, and for materials which vary from those specified or indicated in the Specifications or Drawings. Include samples which show the full range of color and texture for any Interior or Exterior proposed finish. Materials listed as "Basis-of-Design" products shall establish the desired minimum requirements for grade and quality.

Contractor shall allow at least 14 calendar days for initial review of each submittal, and shall provide at least 3 copies of submittals for approval (or provided in digital form). All submittals shall be previously reviewed and approved by General Contractor prior to submittal to the Architect and/or Owner.

Substitutions for any item proposed to be substituted for items specifically specified in either the Drawings or Specifications shall be submitted with a written explanation for the substitution, and shall include cut-sheets for the proposed alternate, for review by the Owner and/or Architect. Please see Section 12300, "Alternates", for procedures for submitting any substitutions. Contractor shall allow at least 7 days for review of substitutions for appropriateness for the particular application. If the substitution requires changes to other Work indicated in the Drawings or Specifications, or requires additional changes to the Scope of Work, this work will be performed at the Contractor's expense, including any design fees required of the Architect.

SECTION 014000 - QUALITY ASSURANCE

General

All work shall be performed by reputable firms with at least (3) years experience in the type of work they will be performing. Contractor shall submit, at Owner's request, a list of projects that proposed sub-contractors have completed in the past, with references for previous clients, showing work completed of

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similar nature to the proposed Work. All work installed that is not judged to be of acceptable quality or workmanship by Owner or Architect shall be removed and replaced at Contractor's expense.

Inspections

All Work shall be inspected by local building officials as required under the Building Permit.

Building Code Requirements

All construction shall meet the minimum requirements set forth in the 2018 Virginia Construction Code (VCC), the 2018 Virginia Existing Building Code and the various other Virginia Codes by reference.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

The General Contractor shall provide all temporary utilities and support facilities necessary to complete the Work, including, but not limited to, the following: temporary electrical; temporary toilets and sewer service; temporary lighting; temporary telephone service; temporary roads and paving; temporary stairs, lifts or hoists; security and protection facilities such as enclosure fences, barricades, temporary partitions, or plant and tree protection; temporary structural shoring elements; temporary scaffolding; or other temporary facilities as needed by General Contractor and sub-contractors to complete the Work. All required fees for temporary services shall be included in the Contract. All temporary services shall be removed from site at Contractor's expense at the completion of the Work. General Contractor shall provide temporary toilet services for all construction personnel; use of Owners existing restroom facilities is strictly prohibited. Provide any necessary temporary construction required to maintain owner/patron exits from existing building and site during construction. Provide any necessary temporary construction required to maintain separation between occupied building areas and work areas.

SECTION 017300 - EXECUTION REQUIREMENTS

Procedural requirements for execution of the Work shall include, but are not limited to, the following:

- A. Examination: Contractor shall be responsible for completely examining all existing conditions. The existence and location of all material and construction elements shown as "existing" in Drawings is not guaranteed. During demolition procedures Contractor shall verify existing conditions with new work plans and notify Architect immediately of any discrepancies. No structural elements shall be removed, cut or modified until all existing structural conditions have been verified. Failure to report inconsistencies will relieve Architect and Owner from any claim for additional work related to the inconsistency. Contractor shall also examine all substrates, areas and conditions with installers or applicators to insure compliance of construction tolerances, adherence, installation requirements and other conditions affecting performance.
- B. Preparation: Contractor shall be responsible for the following: coordination with local utilities regarding connection, relocation and/or disruption of services; field measurements as required to fit the Work properly; verify space requirements and dimensions of items shown diagrammatically on Drawings.

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- C. Construction Layout & Installation: Contractor shall be responsible for all construction means, methods, techniques, sequences and procedures and for safety precautions and programs as they relate to the Work, to include permitting and erection of all temporary scaffolding, hoists, bracing, form work, sheeting, shoring and underpinning as necessary to perform the Work.
- D. Progress Cleaning: Clean Project site and work areas daily, including common areas. Maintain Project site free of waste materials and debris. Dispose of construction waste regularly (compliant with Construction Waste Management section above). Only one construction waste container will be allowed outside of the building, Contractor to coordinate with Owner on location, to be located completely clear of any existing road and parking areas.
- E. Protection of Installed Work: Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion. Maintain manufacturer’s requirements for temperature and humidity for all installed Work.
- F. Hazardous Materials: Any hazardous materials, including asbestos-containing materials (ACM’s) and lead-based paint, that are disturbed or removed during construction processes shall be properly handled and disposed of as required by all Federal, State and local codes. See surveys for ACM’s and lead-based paint include at the end of the Project Manual as follows:
 - 1. ASBESTOS SURVEY (for work above the roof):
“Asbestos & Lead Inspection Report”
Prepared by HDH Technical, Inc.
Issue Date: 06/13/2022
This report covers all ACM’s that may be disturbed or require removal during re-roofing processes above the metal roof deck. ACM’s are indicated to be in one area of the roof underneath existing flashing(s). Disturbance of any ACM’s on the building interior is not anticipated as part of the Work, as all re-roofing work is anticipated to be above the roof deck.
 - 2. Asbestos survey for work below roof deck will be provided as an Addendum at a later date.

SECTION 017700 - CLOSEOUT PROCEDURES

At completion of the Work, General Contractor shall submit the following documentation prior to submitting a final Application for Payment:

- 1. Prepare a written list of items to be completed and corrected (punch list), the value of the items on the list, and reasons why the work is not complete.
- 2. Submit documentation of releases permitting the Owner unrestricted use of the Work and access to services and utilities, if required.
- 3. Documentation that all touch-up and repair work has been completed.
- 4. Make final changeover and deliver any keys (if necessary) to Owner.
- 5. Complete all final cleaning. Clean all areas of site disturbed by construction practices; touch-up and clean all exterior and interior finishes disturbed by or included in the Work; remove all

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excess construction debris from site; clean plumbing fixtures to a sanitary condition; and any additional cleaning required to make all installed Work clean and ready for occupancy.

6. Submit all warranties and maintenance data to Owner. Arrange final meeting with Owner's representative(s) for instruction/training and review regarding all warranties and maintenance requirements.
7. Provide at least one record set of drawings with markups documenting changes in Work during construction practices.

After required documentation is submitted, the Owner and/or Architect will make a final inspection to determine that all requirements of the Contract have been met. After inspection, Architect and/or Owner will approve the final Certificate for Payment, or will notify the Contractor of any construction that must be completed or corrected before the certificate will be issued.

END OF DIVISION 1

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SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.
3. Demolition and removal of selected asbestos containing materials (ACM's)

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Coordination of Owner's continuing occupancy of the existing building interior.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

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1.4 FIELD CONDITIONS

- A. Owner will occupy existing building interior immediately adjacent to (under) selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- E. **Quantities: Contractor shall be responsible for verifying quantities of all materials to be demolished and removed from site, including stone ballasts, built-up roofing and/or roofing membrane, insulation and any/all accessories. Material quantities shall be factored into Contractor's base bid.**
- F. **Hazardous Materials: Contractor shall be responsible for all required field preparations, safeguards, temporary enclosures, etc. for removal of any asbestos containing materials (ACM's) or disturbance/removal of any lead-based paint necessitated by roof replacement processes. See ACM and lead-based paint survey reports noted for Project.**

1.5 WARRANTY

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

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings and/or preconstruction photographs.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
- B. Removed and Salvaged Items:

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1. Clean salvaged items.
2. Store items in a secure area until delivery to Owner.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Protect items from damage during transport and storage.
3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

E. Hazardous Materials: Properly remove any asbestos containing materials (ACM's) or lead-based paint as required by all Federal, state and local codes.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Division 07 for new roofing requirements.
1. Remove and store any existing roof accessories as noted in Drawings for future re-installation.
 2. Remove existing roof coping/cap flashings and gravel stops.
 3. Remove existing roof membrane and flashings.
 4. Remove existing roofing system down to metal roof deck.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site.
- B. Hazardous materials: Properly dispose of any asbestos containing materials (ACM's) or lead-based paint materials as required by all Federal, state and local codes.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

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SECTION 040120 - MAINTENANCE OF UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes maintenance of unit masonry consisting of brick clay masonry restoration and cleaning as follows:
 - 1. Repairing unit masonry (after building re-roofing and other construction processes)
 - 2. Cleaning exposed unit masonry surfaces.

- B. Masonry repair/maintenance work shall apply only to areas where masonry must be patch/repared or cleaned due to damage or soiling caused during re-roofing processes or other construction processes due to work noted in Drawings.

1.2 QUALITY ASSURANCE

- A. Restoration 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.

PART 2 - PRODUCTS

2.1 MANUFACTURED REPAIR MATERIALS

- A. Masonry Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching masonry.
 - 1. 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.
 - 2. Formulate patching compound used for patching brick in colors and textures to match each masonry unit being patched.

2.2 CLEANING MATERIALS

- A. Water: Potable.

- B. Hot Water: Water heated to a temperature of 140 to 160 deg F (60 to 71 deg C).

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- C. Job-Mixed Detergent Solution: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium polyphosphate, 1/2 cup (125 mL) of laundry detergent, and 20 quarts (20 L) of hot water for every 5 gal. (20 L) of solution required.
- D. 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.

PART 3 - EXECUTION

3.1 GENERAL

- A. All masonry affected, soiled or damaged by re-roofing or other construction processes shall be thoroughly repaired and cleaned after construction processes.

3.2 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.
- 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.

3.3 MASONRY UNIT PATCHING

A. 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 (6 mm) 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. Rinse surface to be patched and leave damp, but without standing water.
4. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
5. Place patching compound in layers as recommended by patching compound manufacturer, but not less than 1/4 inch (6 mm) or more than 2 inches (50 mm) thick. Roughen surface of each layer to provide a key for next layer.
6. 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.
7. Keep each layer damp for 72 hours or until patching compound has set.

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3.4 CLEANING MASONRY

- A. Proceed with cleaning in an orderly manner. 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. Retain first subparagraph below unless spray application of chemical cleaners is not acceptable. Wind drift of chemical cleaners is often a problem with spray application.
 - 3. For water-spray application, use fan-shaped spray tip that disperses water at an angle of 25 to 50 degrees.
 - 4. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F (60 and 71 deg C) at flow rates indicated.
- 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-Spray Application Method: Unless otherwise indicated, hold spray nozzle at least 6 inches (150 mm) from surface of masonry and apply water in horizontal back and forth sweeping motion, overlapping previous strokes to produce uniform coverage.
- E. Detergent Cleaning:
 - 1. Wet masonry with hot 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 [water applied by medium-pressure spray to remove detergent solution and soil.
- F. Nonacidic Liquid Chemical Cleaning:
 - 1. Wet masonry with hot water applied by low-pressure spray.
 - 2. Apply cleaner to masonry by brush or low-pressure spray.
 - 3. Rinse with water applied by medium pressure spray to remove chemicals and soil.
- G. After any replacement 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.

END OF SECTION 040120

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SECTION 05 50 00 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Steel ladders.
 - 2. Miscellaneous metal trim.
 - 3. Miscellaneous metal framing.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Welding certificates.

1.3 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1, “Structural Welding Code—Steel”, and AWS D1.3, “Structural Welding Code—Sheet Steel”.

PART 2 - PRODUCTS

2.1 MATERIALS-GENERAL

- A. General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- D. Rolled Steel Floor Plate: ASTM A 786/A 786M.
- E. Steel Tubing: ASTM A 500.

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- F. Steel Pipe: ASTM A 53, standard weight (Schedule 40), black finish.
- G. Slotted Channel Framing: Cold-formed metal channels with flange edges returned toward web and with 9/16-inch- (14.3-mm-) wide slotted holes in webs at 2 inches (51 mm) o.c
- H. Cast Iron: ASTM A 48/A 48M or ASTM A 47/A 47M.
- I. Aluminum Extrusions: ASTM B 221, Alloy 6063-T6.
- J. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.
- K. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.
- L. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- M. Fasteners:
 - 1. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.
 - 2. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 325-N.
 - 3. Anchor Bolts: ASTM F1554 with S1 supplement, Grade 50.
 - 4. Machine Screws: ASME B18.6.3.
 - 5. Lag Bolts: ASME B18.2.1.
 - 6. Wood Screws: Flat head, carbon steel.
 - 7. Plain Washers: Round, carbon steel, ASME B18.22.1.
 - 8. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1.
 - 9. Expansion Anchors: Zinc-plated carbon steel anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 - 10. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.

2.3 FABRICATION

- A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.
- B. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. 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.
- C. Fabricate metal fabrications to allow for movement resulting from the following changes: 120° F (67° C), ambient; 180° F (100° C), material surfaces.

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- D. Welding: Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. At exposed connections, finish welds and surfaces smooth with contour of welded surface matching those adjacent; remove excess flux immediately.
- E. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- F. Provide galvanized steel for all loose steel lintels, loose bearing and leveling plates, shelf angles, and all exterior steel members subject to the elements.
- G. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
- H. On units indicated to be cast into concrete or built into masonry, provide welded steel strap anchors, 1/8 by 1-1/2 inches (3.2 by 38 mm), with a minimum 6-inch (150-mm) embedment and 2-inch (50-mm) hook, not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c.
- I. Apply shop primer to prepared surfaces of metal fabrications, unless indicated otherwise. Comply with NAAMM for applying finishes. See Division 9, Section "Painting" for primer requirements for metal surfaces to be field-painted as indicated in drawings.
- J. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3, "Power Tool Cleaning," and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

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- E. Field welding shall comply with same requirements for shop welding previously stated in this section.
- F. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.
- G. 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. Field paint metal fabrications exposed to view, as indicated in drawings; comply with all requirements under Division 9, Section “Painting.

END OF SECTION 05 50 00

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SECTION 061053 – MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Wood blocking, cants and nailers.

1.2 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

PART 2 - PRODUCTS

2.1 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.
- B. Maximum Moisture Content of Lumber: 15 percent unless otherwise indicated.
- C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
- D. Fire-Test-Response Characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.
- E. Nominal Sizes: As indicated in Drawings.

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2.2 PRESERVATIVE TREATED MATERIALS

- A. Preservative-Treated Materials: AWPAC2, except that lumber not in ground contact and not exposed to the weather may be treated according to AWPAC31 with inorganic boron (SBX).
 - 1. Use treatment containing no arsenic or chromium.
 - 2. Kiln-dry lumber after treatment to a maximum moisture content of 15 percent.
 - 3. Mark lumber with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

- B. Provide preservative-treated wood materials for items indicated on Drawings, and the following:
 - 1. Solid wood framing members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Concealed members in contact with masonry or concrete.
 - 3. Wood framing members that are less than 6 inches (460 mm) above the ground.
 - 4. Wood floor plates that are installed over concrete slabs-on-grade.
 - 5. Plywood sheathing on rear of parapets and other vertical surfaces as specifically indicated in Drawings.

- C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPAC20. Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics as determined by testing identical products per test method indicated by a qualified testing agency. Provide products with a flame spread index of 25 or less when tested according to ASTM E 84.
 - 1. Provide fire-retardant-treated wood materials for items indicated on Drawings.
 - 2. Use treatment that does not promote corrosion of metal fasteners.

2.3 LUMBER

- A. Concealed Boards: Mixed southern pine or Spruce-pine-fir with 15 percent maximum moisture content.

- B. Miscellaneous Lumber: Construction, or No. 2 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

- C. Rough Framing Replacement: Southern Yellow Pine No. 2 with 15 percent maximum moisture content.

- D. Plywood: Exterior grade sheathing, Exposure 1, 24/16 span rating, thickness as indicated in Drawings.

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2.4 MISCELLANEOUS PRODUCTS

- A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
1. Power-Driven Fasteners: CABO NER-272.
 2. Nails, Brads, and Staples: ASTM F 1667.
 3. Wood Screws: ASME B18.6.1.
 4. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
 5. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
 6. Expansion Anchors: Stainless steel anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
- B. Metal Framing Anchors: Structural capacity, type, and size indicated.
1. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
 2. Use anchors made from hot-dip galvanized steel complying with ASTM A 653/A 653M, G60 (Z180) coating designation for interior locations where stainless steel is not indicated.
 3. Use anchors made from stainless steel complying with ASTM A 666, Type 304 for exterior locations and where indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- 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 nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- D. Securely attach rough carpentry and sheathing to substrates, complying with the following:

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1. CABO NER-272 for power-driven fasteners.
 2. Published requirements of metal framing anchor manufacturer.
 3. Table 2304.9.1, "Fastening Schedule," in the 2015 VCC.
- E. Use steel common nails or screws 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. Fasteners used in preservative treated wood shall be galvanized as noted in 2.4A above. Make tight connections between members. Install fasteners without splitting wood. Drive nails or screws snug but do not countersink nail or screws heads unless otherwise indicated.

END OF SECTION 061053

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SECTION 070150.19 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Membrane roofing roof tear-off.
 - 2. Temporary roofing membrane.
 - 3. Roof re-cover preparation.
 - 4. Removal of base flashings.
 - 5. Removal of asbestos-containing materials (ACM's)

1.2 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Membrane Roofing System: EPDM roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.
- C. Roof Re-Cover Preparation: Existing roofing membrane that is to remain and be prepared for reuse.
- D. Roof Tear-Off: Removal of existing membrane roofing system from deck.
- E. Partial Roof Tear-Off: Removal of a portion of existing membrane roofing system from deck or removal of selected components and accessories from existing membrane roofing system.
- F. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- G. Existing to Remain: Existing items of construction that are not indicated to be removed.
- H. ACM's: Materials containing asbestos.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Temporary Roofing: Include Product Data and description of temporary roofing system if proposed as part of re-roofing project.
- C. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

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1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Reroofing Conference: Conduct conference at Project site to review with Owner and Architect all methods and procedures for removing existing roofing, protection of building interior/envelope during construction processes, and installation of new roofing.

1.5 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
- E. Limit construction loads on roof to 20 psf for uniformly distributed loads and equivalent rooftop equipment wheel loads.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
- G. Hazardous Materials: **Contractor shall be responsible for all required field preparations, safeguards, temporary enclosures, etc. for removal of any asbestos containing materials (ACM's) or lead based paint necessitated by roof replacement processes. See ACM and lead-based paint survey reports noted for Project.**

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during reroofing, by methods and with materials so as not to void existing roofing system warranty.

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PART 2 - PRODUCTS

2.1 TEMPORARY ROOFING MATERIALS

- A. Design and selection of materials for temporary roofing are responsibilities of Contractor, utilizing materials that meet all national, state and local codes.

2.2 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new membrane roofing system.
- B. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Approval's "Approval Guide."
- C. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect existing roofing areas that are indicated not to be reroofed (including existing metal roof areas).
- B. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- C. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- D. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding.
- E. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

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3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Remove aggregate ballast from roofing membrane.
- C. Remove pavers and accessories from roofing membrane.
- D. Remove protection mat and extruded-polystyrene insulation from protected roofing membrane.
- E. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck. Remove fasteners from deck or cut fasteners off slightly above deck.
- F. ACM's: Properly remove any asbestos containing materials (ACM's) as required by all Federal, state and local codes.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of membrane roofing system.
- B. Verify that substrate is visibly dry and free of moisture. Do not proceed with roofing work until any moisture is removed.
- C. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- D. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.4 TEMPORARY ROOFING MEMBRANE

- A. Install approved temporary roofing membrane over area to be reroofed.
- B. Remove temporary roofing membrane before installing new roofing membrane.

3.5 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
- B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish, or as specified in Division 07 Section "Sheet Metal Flashing and Trim."
- C. Inspect back of parapet CMU. If parapet CMU has deteriorated, immediately notify Architect.

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3.6 DISPOSAL

- A. Promptly dispose of demolished materials, unless noted otherwise in Drawings to be salvaged or re-used. Do not allow demolished materials to accumulate on-site.
- B. Hazardous Materials: Properly dispose of any asbestos containing materials (ACM's) or lead-based paint materials as required by all Federal, state and local codes.

END OF SECTION 070150.19

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SECTION 075423 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes adhered TPO membrane roofing system and accessories.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Verification: For the following products:
 - 1. Sheet roofing, of color specified, including T-shaped side and end lap seam.
 - 2. Roof insulation.
 - 3. Metal termination bars.
- D. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- F. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.
- G. Warranties: Sample of special warranties.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is FM Approvals approved for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- C. Source Limitations: Obtain components including roof insulation and fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

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- D. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
- C. Energy Performance: Provide roofing system with initial Solar Reflectance Index not less than 50 percent when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within **20 years** from date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, signed by Installer, covering the Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, within two years of Substantial Completion.
- C. **ADD/ALTERNATE Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within 30 years from date of Substantial Completion. (Note: Contractor shall be responsible for providing all required additional materials and/or processes (double flashing, additional membrane thickness, etc.) as required by manufacturer to provide the increased warranty noted.**

PART 2 - PRODUCTS

2.1 ROOFING MATERIALS

- A. Fabric-Reinforced Thermoplastic Polyolefin Sheet: ASTM D 6878, internally fabric or scrim reinforced, uniform, flexible, fabric backed TPO sheet.
 - 1. Subject to compliance with Project requirements, use one of the following products:

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- a. Carlisle Syn Tec, Inc. “Sure-Weld TPO Fleeceback”, 115 mils.
 - b. Firestone Building Products Company “UltraPly TPO XR 115”, 115 mils.
2. Thickness: 60 mils (1.5 mm) for base membrane thickness; 115 mils (2.9 mm) total thickness with fleece backing. (Note: Provide additional thickness if required by manufacturer for ADD/ALTERNATE bid for increased warranty.)
3. Exposed Color: White.
 4. Solar Reflectance Index: 50 percent minimum.
 5. Attachment: **Fully adhered.**
- B. Auxiliary Materials: Recommended by roofing system manufacturer for intended use and as follows:
1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content:
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Multipurpose Construction Adhesives: 70 g/L.
 - c. Fiberglass Adhesives: 80 g/L.
 - d. Contact Adhesive: 80 g/L.
 - e. Single-Ply Roof Membrane Sealants: 450 g/L.
 - f. Sealant Primers for Nonporous Substrates: 250 g/L.
 - g. Sealant Primers for Porous Substrates: 775 g/L.
 3. Sheet Flashing: 60-mil (1.5-mm) thick TPO, same color as sheet membrane.
 4. Bonding Adhesive: Manufacturer's standard.
 5. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
 6. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.
- C. Substrate Board: Provide only if required to fasten new roofing membrane and/or insulation to existing metal roof decking. ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch (13 mm) thick. Use factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.
- D. Vapor Retarder: Polyethylene film, ASTM D 4397, 6 mils (0.15 mm) thick, minimum, with maximum permeance rating of 0.13 perm (7.5 ng/Pa x s x sq. m).

2.2 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by TPO membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Approvals-approved roof insulation.

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- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces, providing a minimum of R-5.5 per 1” thickness.
- C. Fabricate tapered insulation with slopes as indicated in Drawings.
- D. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- E. Modified Asphaltic Insulation Adhesive: Insulation manufacturer's recommended modified asphalt, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install substrate board with long joints continuous and perpendicular to roof slopes with end joints staggered. Tightly butt substrate boards together and fasten to steel deck.
- B. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches (50 mm) and 6 inches (150 mm), respectively.
- C. Insulation Installation:
 - 1. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
 - 2. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
 - 3. Install tapered insulation under area of roofing to conform to slopes indicated.
 - 4. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches (68 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.
 - 5. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
 - 6. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- D. Adhered Membrane Roofing Installation:
 - 1. Adhere membrane roofing over area to receive roofing and install according to membrane roofing system manufacturer's written instructions.

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2. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
3. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.
4. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
5. Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

E. Base Flashing Installation:

1. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
2. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
3. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
4. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

- F. ADD/ALTERNATE for increased warranty: Additional installation processes and procedures shall be provided in required by the membrane manufacturer to provide the increased warranty requested.

3.2 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

END OF SECTION 075423

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SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes formed sheet metal flashings and trim.

1.2 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.
- C. Samples for Verification: For each type of exposed finish required.
- D. Qualification Data: For qualified fabricator.

1.3 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. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.

1.4 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.

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PART 2 - PRODUCTS

2.1 SHEET METAL

- A. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, not less than 0.032 inch (0.8 mm) thick; and finished as follows:
 - 1. Exposed Finish: Manufacturer's standard two-coat fluoropolymer system with color coat containing not less than 70 percent PVDF resin by weight. Color to be selected from manufacturer's full range.
 - 2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish.
- B. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, with No. 2D finish; not less than 0.016 inch (0.4 mm) thick.
- C. Zinc-Tin Alloy-Coated Stainless Steel: ASTM A 240/A 240M, Type 304, fully annealed stainless-steel sheet, not less than 0.015 inch (0.38 mm) thick, with 0.787-mil (0.020-mm) thickness zinc-tin alloy coating applied to each side.
- D. Metallic-Coated Steel Sheet: Galvanized structural-steel sheet, ASTM A 653/A 653M, G90 (Z275), or aluminum-zinc alloy-coated structural-steel sheet, ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40 (Class AZM150 coating designation, Grade 275); 0.022-inch (0.56-mm).
 - 1. Finish: Manufacturer's standard two-coat fluoropolymer system with color coat containing not less than 70 percent PVDF resin by weight.
 - 2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish.

2.2 ACCESSORIES

- A. Polyethylene Sheet: 6-mil- (0.15-mm-) thick polyethylene sheet complying with ASTM D 4397.
- B. Felt Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felts.
- C. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied; 40 mils thick minimum. Stable after testing at 240 deg F (116 deg C) and passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.
- D. Slip Sheet: Building paper, 3-lb/100 sq. ft. (0.16-kq/sq. m) minimum, rosin sized.
- E. 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.

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1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 2. Exposed Fasteners: Heads matching color of sheet metal roofing using plastic caps or factory-applied coating.
 3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
 5. Fasteners for Zinc-Tin Alloy-Coated Stainless-Steel Sheet: Series 300 stainless steel.
 6. Fasteners for Metallic-Coated Steel Sheet: Hot-dip galvanized steel or Series 300 stainless steel.
- F. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
- G. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.
- H. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.
- I. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.3 FABRICATION

- A. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles, or to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing" if more restrictive.
- C. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
- D. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal. Fabricate of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- G. Counterflashing & Flashing Receivers: Fabricate from the following materials, to be determined based on surrounding materials:
1. Aluminum: 0.032 inch (0.81 mm).

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2. Stainless Steel: 0.019 inch (0.48 mm).

PART 3 - EXECUTION

3.1 INSTALLATION

- 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.
- B. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.
- C. Comply with SMACNA's "Architectural Sheet Metal Manual." Allow for thermal expansion; set true to line and level. Install Work with laps, joints, and seams permanently watertight and weatherproof; conceal fasteners where possible.
- D. 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.
- E. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) 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 (25 mm) deep, filled with sealant concealed within joints.
- F. Install exposed sheet metal flashings and trim true to line, level and uniform, without excessive oil canning, buckling or tool marks, and to result in weathertight performance. Seal joints with elastomeric or epoxy sealant as required.
- G. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- H. Fabricate nonmoving seams in sheet metal with flat-lock seams.
- I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pre-tinned surface would show in finished Work.
 1. Do not solder metallic-coated steel and aluminum sheet.
 2. Do not pre-tin zinc-tin alloy-coated stainless steel.
 3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

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- J. Aluminum Flashing and Trim: Coat back side of aluminum flashing and trim with bituminous coating where it will contact wood, ferrous metal, or cementitious construction.
- K. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

END OF SECTION 076200

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SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes new roof accessory materials.
- B. Section includes the following:
 - 1. Parapet copings.
 - 2. Reglets and counterflashings.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties. Include plans, elevations, expansion-joint locations, keyed details, and details of attachment to other work. Distinguish between plant- and field-assembled work.
- C. Samples for Verification: For roof-edge drainage systems made from 12-inch (300-mm) lengths of full-size components including fasteners, cover joints, accessories, and attachments.

1.3 QUALITY ASSURANCE

- A. Comply with SMACNA's "Architectural Sheet Metal Manual."
- B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

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PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required. Smooth, flat surface with two-coat fluoropolymer finish.
- B. Felt Underlayment: ASTM D 226, Type I, asphalt-saturated organic felts.
- C. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements.
 - 1. Exposed Penetrating Fasteners: Gasketed screws with heads matching color of metal.

2.2 ROOF SPECIALTIES

- A. Copings & Cap Flashings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage; corner units, end cap units, and concealed splice plates with same finish as coping caps. Include internal gutter/drain chair and continuous hold-down cleats. Coping shall be 22-gauge galvanized steel with manufacturer's standard Kynar 500 pre-finished coating, with 20-gauge galvanized steel cleats. Coping system shall be fabricated with integral slope to require no additional sloped blocking. Coping width shall be designed to match existing parapet widths. Fasteners used for coping system shall be compatible with the coping system and listed for use in the existing parapet materials. Pre-finished color to match existing coping.
 - 1. Basis-of-Design Product: "PermaSnap" Coping System by W.P. Hickman
 - 2. Manufacturers: Subject to compliance with requirements, other manufacturers providing products that may be used include the following:
 - a. Architectural Products Company.
 - b. ATAS International, Inc.
 - c. Johns Manville.
 - d. Metal-Era, Inc.
 - e. Metal-Fab Manufacturing, LLC.
 - f. National Sheet Metal Systems, Inc.
 - g. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
 - 3. Any coping product used shall meet the minimum requirements noted or be similar in materials and performance to the specified Basis-of-Design product.
- B. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, manufactured from formed aluminum or zinc-coated steel.
- C. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches (100 mm) and in lengths not exceeding 12 feet (3.6 m) designed to snap into reglets or

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overlapped with top termination bar, designed to compress against base flashings with joints lapped, manufactured from formed aluminum, zinc-coated steel or stainless steel.

2.3 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Remove existing roof coping and store for possible re-use. Provide new coping sections to match existing coping only where existing coping is damaged beyond repair.
- B. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement.
- C. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.
- D. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- E. Allow for thermal expansion of roof specialties. Space expansion joints at a maximum of 50 feet (15.2 m) with no joints within 18 inches (450 mm) of corners or intersections unless indicated. Install expansion joint caps.
- F. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pre-tinned surface would show in finished Work.
- H. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering. Clean off excess solder and sealants.

END OF SECTION 077100

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SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes replacement materials to match existing materials. **Replacement of certain items to be required only if required because existing materials are damaged beyond repair and cannot be re-used.** Replacement as indicated in Drawings.
- B. Section Includes:
 - 1. Roof curbs.
 - 2. Equipment supports.
 - 3. Pipe supports.
 - 4. Preformed flashing sleeves.

1.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

1.3 SUBMITTALS

- A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof accessories. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.
- C. Samples: For each exposed product and for each color and texture specified, prepared on Samples of size to adequately show color.

1.4 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

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1.5 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within **Twenty (20) years** of Substantial Completion.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation and mill phosphatized for field painting if indicated in Drawings.
- B. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, AZ50 (AZM150) coated.
- C. Aluminum Sheet: ASTM B 209 (ASTM B 209M), manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
- D. Aluminum Extrusions and Tubes: ASTM B 221 (ASTM B 221M), manufacturer's standard alloy and temper for type of use, finished to match assembly where used, otherwise mill finished.
- E. Stainless-Steel Sheet and Shapes: ASTM A 240/A 240M or ASTM A 666, Type 304.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, thickness as indicated.
- C. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, and complying with AWPA C2; not less than 1-1/2 inches (38 mm) thick.
 - 1. capability to provide a sound foundation for field-applied topcoats under prolonged exposure.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners.
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.

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- G. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- H. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.3 ROOF CURBS

- A. Roof Curbs: **Provide as required only if required to replace existing coping damaged beyond repair.** Internally reinforced roof-curb units (with integral spring-type vibration isolators where indicated in Drawings), capable of supporting superimposed live and dead loads to match existing, including equipment loads and other existing construction; with welded or mechanically fastened and sealed corner joints, and integrally formed deck-mounting flange at perimeter bottom.
- B. Size: Coordinate dimensions with existing equipment rough-ins to match existing curbs.
- C. Construction:
 - 1. Insulation: Factory insulated with 1-1/2-inch- (38-mm-)thick glass-fiber board insulation.
 - 2. Liner: Same material as curb, of manufacturer's standard thickness and finish.
 - 3. Factory-installed wood nailer at top of curb, continuous around curb perimeter.
 - 4. On ribbed or fluted metal roofs, form deck-mounting flange at perimeter bottom to conform to roof profile.
 - 5. Fabricate curbs to minimum height of 18 inches (450 mm) above metal decking unless otherwise indicated.
 - 6. Top Surface: Level around perimeter if required with roof slope accommodated by sloping the deck-mounting flange.

2.4 EQUIPMENT SUPPORTS

- A. Equipment Supports: To be provided on element indicated in Drawings to be replaced and **provided elsewhere as required only if required to replace existing that are damaged beyond repair.** Internally reinforced metal equipment supports capable of supporting superimposed live and dead loads to match existing, including equipment loads and other existing construction; with welded or mechanically fastened and sealed corner joints, and integrally formed deck-mounting flange at perimeter bottom.
- B. Size: Coordinate dimensions with existing equipment rough-ins
- C. Construction: Match existing. Include metal counterflashing.

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2.5 PIPE SUPPORTS

- A. Pipe Supports: To be provided on element indicated in Drawings to be replaced and **provided elsewhere as required only if required to replace existing that are damaged beyond repair, or as indicated in Drawings.** Adjustable-height, extruded-aluminum tube, filled with urethane insulation; 2 inches (50 mm) in diameter; with aluminum baseplate, membrane roofing base seal, manufacturer's recommended hardware for mounting to structure or structural roof deck as indicated, and extruded-aluminum carrier assemblies; suitable for quantity of pipe runs and sizes.

2.6 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 12 inches (300 mm) high, with removable metal hood and slotted metal collar.
 - 1. Metal: Aluminum sheet, 0.063 inch (1.60 mm) thick.
 - 2. Finish: Manufacturer's standard.
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.
 - 1. Metal: Aluminum sheet, 0.063 inch (1.60 mm) thick.
 - 2. Height: 13 inches (330 mm).
 - 3. Finish: Manufacturer's standard.

2.7 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

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3.2 INSTALLATION

- A. **Remove existing roof accessories that are damaged beyond repair, unless noted otherwise to replace in Drawings. Otherwise prepare existing accessories to remain for new roofing installation, unless specifically noted in Drawings to be replaced.**
- B. General: Install roof accessories according to manufacturer's written instructions.
 - 1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
 - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- C. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
- D. Roof Curb and Equipment Support Installation: Install so top surface is level.
- E. Pipe Support Installation: Install pipe supports so top surfaces are in contact with and provide equally distributed support along length of supported item.
- F. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.
- G. Seal joints with sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions. Clean off excess sealants.
- B. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

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SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Silicone joint sealants.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

C. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

D. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

D. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates.

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- E. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.
- F. Manufacturer's Warranty: 10 year.

1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (4.4 deg C); when substrates are wet; or where contaminants capable of interfering with adhesion have not yet been removed from substrates.

PART 2 - PRODUCTS

2.1 SEALANT 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.
- 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. Colors of Exposed Joint Sealants: As selected from manufacturer's full range.
- E. Provide sealants which are listed by the manufacturer as paintable in all locations requiring field painting.

2.2 JOINT SEALANTS

- A. Sealant for General Exterior Use Where Another Type Is Not Specified, provide one of the Following:
 - 1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 50; for Use NT.
 - 2. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.

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2.3 MISCELLANEOUS MATERIALS

- A. 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. 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 3 - EXECUTION

3.1 INSTALLATION

- A. Sealant Installation Standard: Comply with ASTM C 1193.
- B. Comply with all written instructions as outlined by sealant manufacturer for products and applications indicated, unless more stringent requirements apply.
- C. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- D. Joint Priming: Prime joint substrates as required per sealant manufacturer's written instructions, and based on pre-construction field adhesion testing.
- E. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.
- F. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- G. 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.
- H. Tool all non-sag sealants after application to remove excess material from adjacent surfaces.
- I. Field test all joints for proper adhesion after joints have set per manufacturer's requirements. Remove sealants failing to adhere to joint substrates during testing and replace as required.

END OF SECTION 079200

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and the application of paint and stain systems on the following exterior and interior substrates:
 - 1. Masonry.
 - 2. Galvanized metal.
 - 3. Ferrous metals (iron piping).
 - 4. Aluminum (not anodized or otherwise coated).

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.

1.3 QUALITY ASSURANCE

- A. MPI Standards:
 - 1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List" to the greatest extent possible.
 - 2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
- B. Applicator Qualifications: A reputable firm or individual experienced in applying paints and coatings similar in material and design to this project, whose previous work has been successful in service, performance, and appearance.
- C. Mockups: Full-coat finish Sample of each type of coating, color, and substrate, applied where directed.

1.4 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

1.5 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the installed work. Include 2 gallons (7.6 L) of each color and type of coating applied.

PART 2 - PRODUCTS

2.1 PAINT- GENERAL

- A. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List" to the greatest extent possible.
- B. Utilize paints which are comparable/equal to the "Basis-of-Design" products specified. Documentation regarding paint properties, quality and recommended applications shall be provided showing equal values to "Basis-of-Design" products specified.
- C. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- D. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- E. Colors: As selected from manufacturer's full range of colors.

2.2 PAINT PRODUCTS

- A. Basis of Design (Manufacturer): Paint products manufactured by PPG Architectural Finishes, Inc. (Pittsburgh Paints), products as specifically noted in paint schedules below.
- B. 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:
 - 1. Benjamin Moore & Co.
 - 2. Duron, Inc.
 - 3. ICI Paints.
 - 4. Porter Paints.
 - 5. Sherwin-Williams Company (The).

2.3 EXTERIOR PAINT MATERIALS (BASIS-OF-DESIGN PRODUCTS)

- A. Masonry: (1) coat PPG 6-12 Speedhide Exterior Quick Dry Latex Sealer (dry film thickness = 8.5 mils.); (2) finish coats PPG 72-Line Sun-Proof Exterior Flat-Latex or PPG 78-Line Sun-Proof Exterior Semi-Gloss (dry film thickness = 1.2 mils.).

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

- B. Zinc-Coated Metal: Full gloss alkyd enamel finish: (1) coat PPG 90-708 Pitt Tech Exterior Primer (dry film thickness = 20 mils.); (2) finish coats PPG 54-Line Quick Dry Enamel (dry film thickness – 1.7 mils).
- C. Ferrous Metal: Full gloss alkyd enamel finish: (1) coat PPG 6-208 Speedhide Exterior Primer (dry film thickness = 1.7 mils); (2) finish coats PPG 54-Line Quick Dry Gloss Enamel (dry film thickness = 1.7 mils).
- D. Aluminum: (1) coat PPG 17-921 PPG Aluminum Primer; (2) finish coats PPG 6-230 Speedhide Aluminum Paint (dry film thickness – 1.5 mils).

PART 3 - EXECUTION

3.1 PREPARATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, plates, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.
- C. Clean and prepare all substrates to be painted according to manufacturer's written instructions.
 - 1. General: Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 2. Concrete Masonry: 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. Provide block filler as required by paint manufacturer.
 - 3. Galvanized-Metal: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints. Clean with non-petroleum based solvents.
 - 4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces with methods that comply with SSPC's recommendations. Remove all existing rust from exposed iron piping.
 - 5. Aluminum: Remove surface oxidation.
- D. Schedule painting so cleaning operations will not damage newly painted surfaces.
- E. Hazardous Materials: Any exterior elements requiring touch-up painting shall be verified with lead-based paint survey prior to any scraping or removal of paint. Properly dispose of any lead-based paint materials as required by all applicable federal, state and local codes.

3.2 APPLICATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

- B. Paint exposed surfaces (unless otherwise indicated), including any existing exposed gas piping.
- C. Apply paints according to manufacturer's written instructions.
 - 1. Do not paint over dirt, rust, or other conditions detrimental to paint film formation.
 - 2. Provide finish coats which are compatible with primers used.
 - 3. Apply paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C).
 - 4. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or to damp or wet surfaces.
 - 5. Allow sufficient time between successive coats to allow proper drying.
 - 6. Apply paints by brush, roller, or spray per manufacturer's recommendations.
 - 7. Minimum Coat Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve manufacturer's recommended dry film thickness.
 - 8. 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.
 - 9. Apply paint evenly over all surfaces. **Poor paint performance or appearance, as judged by Architect or Owner, due to poor paint application or workmanship, shall be removed and repainted at contractor's expense.**
 - 10. Protect surfaces not to be painted as required against damage from painting; surfaces which are painted accidentally shall be fully cleaned of paint or re-painted to match.
 - 11. Protect all painted surfaces after paint application until project conclusion as necessary to maintain new painted finish.
- D. Wood Surfaces: Only paint existing wood surfaces disturbed or otherwise damaged during re-roofing processes or roof repair processes. No other existing exterior wood to be painted.

3.3 CLEANING AND PROTECTION

- A. Remove excess rubbish, empty cans, rags, and other discarded materials from Project site daily.
- 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.

END OF SECTION 099100

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

SECTION 221426 – ROOF DRAINS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Roof drains.

1.2 SUBMITTALS

A. Product Data: Catalog sheets, specifications and installation instructions for each type of product indicated.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Qualified installer with at least three (3) years of experience installing type of specified products.
- B. Product Testing: Product type to be periodically tested using a qualified testing agency.
- C. Manufacturer's Warranty: 5 years.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with installation of roof drains and joints between roof drains and piping when ambient and substrate temperature conditions are outside limits permitted by drain manufacturer; or when substrates are wet.

PART 2 - PRODUCTS

2.1 ROOF DRAINS

- A. Drain Body: Standard ASME A112.6.4. for general purpose roof drains. Coated cast iron, 12 inches diameter, with integral bosses or lugs drilled and tapped for fastening flashing clamp and underdeck clamp, corrosion resistant bolts, bottom outlet and connection to match existing piping sizes.
- B. Flashing Clamp: Coated cast iron, non-puncturing type compression ring with integral, notched gravel stop and dome locking strainer.

CAVE SPRING FIRE DEPARTMENT – ROOF REPLACEMENT
4212 Old Cave Spring Road
Roanoke County, Virginia
July 26, 2022

- C. Dome Strainer: Coated cast iron, standard profile type, with narrow vertical slotted opening, bayonet locking flange, secured with stainless steel fasteners.
- D. Basis-of-Design Product: Zurn Z121, 12 inch diameter roof drain, low silhouette dome.
- E. Additional Manufacturers: Subject to compliance with requirements, other manufacturers providing products that may be used include the following:
 - 1. Josam Company.
 - 2. Jay R. Smith Manufacturing Company.
 - 3. Tyler Pipe; Wade Division.

2.2 FASTENERS

- A. Corrosion Resistant Fasteners: Type 302 or 304 stainless steel bolts.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Field verify all existing drain locations. Field-verify size(s) and type(s) of existing drain piping to remain.
- B. Remove existing roof drains as required and as indicated in Drawings.
- C. Inspect existing metal roof decking. Repair/patch any roof decking as indicated in Drawings.

3.2 INSTALLATION

- A. Comply with all written instructions as outlined by roof drain manufacturer for products and applications indicated, unless more stringent requirements apply.
- B. Coordinate drain installation with deck and roofing work.
- C. Locate drains as indicated in Drawings.
- D. Drains in Metal Decking: Set sump receiver surface level with the deck surface. Secure drain body with underdeck clamp. Connect roof drain to drainage piping with watertight seal.
- E. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
- F. Fasteners: Coat bolt threads with anti-seize lubricant before final installation. Secure external components in place with noted fastener types.
- G. Field test roof drain and inspect to ensure watertight seal.

END OF SECTION 221426



Solutions for all your Environmental and OSHA Concerns

June 13, 2022

Asbestos & Lead Inspection Report

Project Location:

4212 Old Cave Spring Road
Roanoke, Virginia

Prepared For:

Roanoke County General Services
Roanoke, VA

Prepared By:


Fred Danner
Interim Lead Inspector

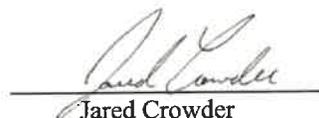

Jared Crowder
Asbestos Inspector

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SCOPE OF WORK

ASBESTOS INSPECTION

- SAMPLE SUMMARY
- LABORATORY REPORT

LEAD INSPECTION

- LEAD BASED PAINT TESTING RESULTS

APPLICABLE LICENSES

Scope of Work

HDH Technical, Inc. was contracted by Roanoke County to provide an asbestos inspection and lead-based paint screening of the roof sections of the structure known as Roanoke County Fire and Rescue Station #3 located at 4212 Old Cave Spring Road, Roanoke, Virginia. The inspection was conducted by personnel trained and licensed in accordance with the regulations of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. This inspection was performed using current EPA AHERA standards. This protocol was used for the determination, sampling and analysis of suspected Asbestos Containing Materials (ACM). Only those parts of the structure scheduled to undergo renovation, as directed by the client, were included in this inspection.

Also included in this report is a Lead-Based Paint Screening at this location. The term "screening" is used as opposed to "inspection" due to the fact that a complete HUD type paint inspection of each surface in every space was not performed. Generally speaking, each differing type of interior and exterior component and each differing type of paint was tested, although each component was not tested in each room. This "screening" will be referred to as an "inspection" throughout this report and was conducted in accordance with accepted industry standards and applicable regulations established by OSHA and the EPA. This inspection only identifies lead-based paint that is accessible through non-destructive methods. It does not identify lead-based paint materials located within walls, concrete decks, subfloors, or other generally inaccessible areas.

ASBESTOS INSPECTION

An inspection of the roof sections of 4212 Cave Spring Road was performed on June 8, 2022 by representatives of HDHT. The objective of this inspection was to determine the location of asbestos-containing building materials (ACBM) currently located in the various roof sections of this structure that may be disturbed in conjunction with upcoming roof replacement/repair activities at this structure.

The inspection was conducted by personnel trained and licensed in accordance with the regulations of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. This inspection meets the protocol outlined in current EPA AHERA regulations. This protocol was used for the determination, sampling and analysis of suspect asbestos containing materials.

Please see photograph #1 in the "Photos" section of this report for the roof designations used in this report.

As the sample summary indicates, the following suspect materials sampled were reported to be asbestos containing by the laboratory:

- **Roof Flashing – Roof D (Asphalt Roof Section)**

These NON-Friable asbestos containing materials should be removed prior to roofing activities at this location, if they are to be disturbed. Removal should be performed by licensed, contract personnel using approved methods.

Friable Asbestos Material: Material when dry, may be crumbled, pulverized or reduced to powder by hand pressure and includes previously non-friable material after such previously non-friable material becomes damaged to the extent that when dry may be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable Asbestos Material: Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not release fibers during any appropriate use, handling, demolition, storage, transportation, processing or disposal.

This information should be provided to all contract personnel for their use in meeting current OSHA requirements. Every attempt was made to gain access to all areas or to assess representative materials entering or leaving the area. HDH Technical, Inc. accepts no liability nor makes any claims regarding ACBM which was not accessible during the inspection process if such material was located behind or within walls, concrete decks, subfloors, or was generally inaccessible without destructive sampling. If any additional suspect materials are identified during the course of the project, the contractor is to immediately stop work and contact the Owner for further direction.

Asbestos Sample Summary

Laboratory Report



10501 Trade Ct., Suite 100
 N. Chesterfield, VA 23139
 804-897-1177 / 888-895-1175
 Fax 804-897-0070
 www.sanair.com

**Asbestos
 Chain of Custody**

SanAir ID Number
 22028096

Company: HDH Technical, Inc	Project #: Roanoke County	Collected by: Crowder
Address: 1305 Radford Street	Project Name: 4212 Old Cave Spring Rd	Phone #: 540-381-7999
City, St, Zip: Christiansburg, VA 24073	Date Collected: 6/8/2022	Email: rriebal@hdhassociates.com
State of Collection: VA Account #: 1769	P.O. Number:	Email: jcrowder@hdhassociates.com

Bulk			Air			Soil/Vermiculite		
ABB	PLM EPA 600/R-93/116	<input checked="" type="checkbox"/>	ABA	PCM NIOSH 7400	<input type="checkbox"/>	ABSE	PLM EPA 600/R-93/116 (Qual.)	<input type="checkbox"/>
	Positive Stop	<input type="checkbox"/>	ABA-2	OSHA w/ TWA	<input type="checkbox"/>	ABSP	PLM CARB 435 (LOD <1%)	<input type="checkbox"/>
ABEPA	PLM EPA 400 Point Count	<input type="checkbox"/>	ABTEM	TEM AHERA	<input type="checkbox"/>	ABSP1	PLM CARB 435 (LOD 0.25%)	<input type="checkbox"/>
ABB1K	PLM EPA 1000 Point Count	<input type="checkbox"/>	ABATN	TEM NIOSH 7402	<input type="checkbox"/>	ABSP2	PLM CARB 436 (LOD 0.1%)	<input type="checkbox"/>
ABBEH	PLM EPA NOB	<input type="checkbox"/>	ABT2	TEM Level II	<input type="checkbox"/>			
ABBCH	TEM Chatfield	<input type="checkbox"/>						
ABBTM	TEM EPA NOB	<input type="checkbox"/>						

Water			New York ELAP			Dust		
ABHE	EPA 100.2	<input type="checkbox"/>	PLM NY	PLM EPA 600/M4-82-020	<input type="checkbox"/>	ABWA	TEM Wipe ASTM D-6480	<input type="checkbox"/>
			ABEFA2	NY ELAP 198.1	<input type="checkbox"/>	ABDMV	TEM Microvac ASTM D-5755	<input type="checkbox"/>
			ABENY	NY ELAP 198.6 PLM NOB	<input type="checkbox"/>			
			ABBNY	NY ELAP 198.4 TEM NOB	<input type="checkbox"/>	Matrix	Other	<input type="checkbox"/>

Turn Around Times	3 HR (4 HR TEM)	<input type="checkbox"/>	6 HR (8HR TEM)	<input type="checkbox"/>	12 HR	<input type="checkbox"/>	24 HR	<input checked="" type="checkbox"/>
	2 Days	<input type="checkbox"/>	3 Days	<input type="checkbox"/>	4 Days	<input type="checkbox"/>	5 Days	<input type="checkbox"/>

Special Instructions:

SAMPLE ID	SAMPLE DESCRIPTION
RM 1	Roof Material - Roof D
RM 2	Roof Material - Roof D - Repair
RF 3.1	Roof Flashing - Roof D
RF 3.2	Roof Flashing - Roof D
CK 4.1	Caulk - Pipe
CK 4.2	Caulk - Pipe
VB 5.1	Vapor Barrier - Roof F
VB 5.2	Vapor Barrier - Roof F
CK 6.1	Caulk - Roof D
CK 6.2	Caulk - Roof D
CK 7.1	Caulk - Roof C

Special Instructions

Relinquished by	Date	Time	Received by	Date	Time
Crowder	6/8/2022	3:26 PM	UPS	6/8/2022	3:26 PM
			<i>[Signature]</i>	6/9/22	10:50

Unless scheduled, the turn around time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or Holiday work must be scheduled ahead of time and is charged for rush turn around time. Work with standard turn around time sent Priority Overnight and Billed to Recipient will be charged a \$10 shipping fee.



SanAir ID Number
22028096
 FINAL REPORT
 6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
 Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
RM 1 / 22028096-001 Roof Material - Roof D, Roofing	Black Non-Fibrous Heterogeneous	15% Glass	85% Other	None Detected
RM 1 / 22028096-001 Roof Material - Roof D, Roofing	Black Non-Fibrous Heterogeneous	10% Synthetic	90% Other	None Detected
RM 1 / 22028096-001 Roof Material - Roof D, Tar Paper	Black Fibrous Homogeneous	50% Glass	50% Other	None Detected
RM 1 / 22028096-001 Roof Material - Roof D, Insulation	Brown Fibrous Homogeneous	90% Cellulose	10% Other	None Detected
RM 2 / 22028096-002 Roof Material - Roof D - Repair, Shingle	Black Non-Fibrous Heterogeneous	15% Glass	85% Other	None Detected
RM 2 / 22028096-002 Roof Material - Roof D - Repair, Tar	Black Non-Fibrous Homogeneous		100% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Flashing	Black Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Tar Paper	Black Fibrous Homogeneous	65% Synthetic	35% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Tar Paper	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Insulation	Brown Fibrous Homogeneous	90% Cellulose	10% Other	None Detected

Analyst:

Approved Signatory:

Analysis Date: 6/10/2022

Date: 6/10/2022



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Project Number: Roanoke County
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Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic Appearance	Components		Asbestos Fibers
		% Fibrous	% Non-fibrous	
RF 3.2 / 22028096-004 Roof Flashing - Roof D, Flashing	Black Non-Fibrous Homogeneous		92% Other	8% Chrysotile
RF 3.2 / 22028096-004 Roof Flashing - Roof D, Insulation	Brown Fibrous Homogeneous	90% Cellulose	10% Other	None Detected
CK 4.1 / 22028096-005 Caulk - Pipe	Black Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected
CK 4.2 / 22028096-006 Caulk - Pipe	Black Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected
VB 5.1 / 22028096-007 Vapor Barrier - Roof F	Black Non-Fibrous Homogeneous	10% Cellulose	90% Other	None Detected
VB 5.2 / 22028096-008 Vapor Barrier - Roof F	Black Non-Fibrous Homogeneous	10% Cellulose	90% Other	None Detected
CK 6.1 / 22028096-009 Caulk - Roof D	Black Non-Fibrous Heterogeneous	10% Synthetic	90% Other	None Detected
CK 6.2 / 22028096-010 Caulk - Roof D	Black Non-Fibrous Heterogeneous	10% Synthetic	90% Other	None Detected
CK 7.1 / 22028096-011 Caulk - Roof C	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
CK 7.2 / 22028096-012 Caulk - Roof C	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected

Analyst:

Approved Signatory:

Analysis Date: 6/10/2022

Date: 6/10/2022



SanAir ID Number

22028096

FINAL REPORT

6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
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Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

Table with 5 columns: SanAir ID / Description, Stereoscopic Appearance, % Fibrous, % Non-fibrous, Asbestos Fibers. Contains 3 rows of data for different caulk samples.

Analyst:

[Signature]

Approved Signatory:

[Signature]

Analysis Date:

6/10/2022

Date:

6/10/2022

Disclaimer

This report is the sole property of the client named on the SanAir Technologies Laboratory chain-of-custody (COC). Results in the report are confidential information intended only for the use by the customer listed on the COC. Neither results nor reports will be discussed with or released to any third party without our client's written permission. The final report shall not be reproduced except in full without written approval of the laboratory to assure that parts of the report are not taken out of context. The information provided in this report applies only to the samples submitted and is relevant only for the date, time, and location of sampling. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample(s) in the condition in which they arrived at the laboratory and information provided by the client on the COC, such as: project number, project name, collection dates, po number, special instructions, samples collected by, sample numbers, sample identifications, sample type, selected analysis type, flow rate, total volume or area, and start stop times that may affect the validity of the results in this report. Samples were received in good condition unless otherwise noted on the report. SanAir assumes no responsibility or liability for the manner in which the results are used or interpreted. This report does not constitute and shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any other U.S. governmental agencies and may not be certified by every local, state, and federal regulatory agencies.

Samples are held for a period of 60 days. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations.

For NY state samples, method EPA 600/M4-82-020 is performed.

NYELAP Disclaimer:

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications

NVLAP lab code 200870-0

City of Philadelphia: ALL-460

PA Department of Environmental Protection Number: 68-05397

California License Number: 2915

Colorado License Number: AL-23143

Connecticut License Number: PH-0105

Massachusetts License Number: AA000222

Maine License Number: LB-0075, LA-0084

New York ELAP lab ID: 11983

Rhode Island License Number: PCM00126, PLM00126, TEM00126

Texas Department of State Health Services License Number: 300440

Commonwealth of Virginia 3333000323

Washington State License Number: C989

West Virginia License Number: LT000616

Vermont License: AL166318

Louisiana Department of Environmental Quality: 212253, Cert 05088

Revision Date: 8/14/2020



SanAir ID Number
22028096
FINAL REPORT
6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Dear Crowder,

We at SanAir would like to thank you for the work you recently submitted. The 14 sample(s) were received on Thursday, June 09, 2022 via UPS. The final report(s) is enclosed for the following sample(s): RM 1, RM 2, RF 3.1, RF 3.2, CK 4.1, CK 4.2, VB 5.1, VB 5.2, CK 6.1, CK 6.2, CK 7.1, CK 7.2, CK 8.1, CK 8.2.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

A handwritten signature in black ink that reads "Sandra Sobrino". The signature is written in a cursive, flowing style.

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:

- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:

- 14 samples in Good condition.

LEAD INSPECTION

On June 8, 2022 a Lead-Based Paint inspection was also conducted on the roof sections at 4212 Old Cave Spring Road. The inspection was conducted to identify potential lead-based paint concerns involved in this roofing project. The areas were inspected by Fred Danner.

Please see photograph #1 in the “Photos” section of this report for the roof designations used in this report.

The inspection determined that NONE of the surfaces tested contain lead greater than or equal to 1.0 mg/cm, and are NOT considered to be lead-based paint surfaces as defined by the Virginia Department of Professional and Occupational Regulation (DPOR) and the Environmental Protection Agency (EPA).

For informational purposes, the following material was sampled and identified to be a lead component. Although not included in the Virginia Lead-based Paint Activities Regulations, the contractor should be provided this information in the event it is removed for disposal purposes:

- **Lead Sheets in drain sumps on Roof D (Asphalt Roof Section)**

If lead is present, regardless of quantity, OSHA regulations are applicable. All persons involved in the disturbance of lead based or lead containing painted surfaces should be adequately trained to do so. All contractors should be provided with the results for their use in meeting current OSHA requirements for the protection of their workers and the environment.

This inspection was in compliance with the Virginia Lead-based Paint Activities Regulations, October 1, 1995. The Inspector is properly trained, licensed, and met the competency requirements spelled out in those regulations.

FIELD VERIFICATION

Fred Danner, Interim Lead Inspector, under the direction of Robin H. Liebal, inspected the structure on March 1, 2022.

A total of Twenty-Two (22) X-Ray Florescence (XRF) readings, including calibrations, were taken in substantial conformance with industry standards and other applicable federal and state regulations.

Robin H. Liebal’s Virginia Lead Risk Assessor license number is 3356000422.
Fred Danner’s Interim Lead Inspector license number is 3342001012.

A complete copy of all tested surfaces and results are included in this report. All positive samples are listed in BOLD.

HDH Technical, Inc. (HDHT) used the Heuresis Corporation model Pb200i (Serial#1609) X-Ray Fluorescence (XRF) instrument for the screening. This unit was resourced in February 2020. The instrument is not substrate dependent according to that performance characteristic sheet, so no substrate corrections were required during this screening.

The XRF was calibrated prior to use and at the end of the testing, or every four hours, whichever came first. All calibrations were conducted on a 1.10 ± 0.1 mg/cm² NIST SRM paint film. All calibrations are noted on the x-ray fluorescence data sheets.

For the purposes of this inspection lead-based paint is defined as greater than or equal to 1.0 mg/cm². The Heuresis Corporation instrument (model Pb200i) used in this survey have published threshold values of 1.0 mg/cm² on all substrates and do not require substrate correction. Paint chip confirmation of inconclusive samples was not necessary since no inconclusive surfaces were identified during sampling with this X-ray Fluorescence Analyzer. Lastly, this report detailing the findings of the inspection report was written to document the inspection and provide a permanent record of the evaluation.

Qualifications

The inspection was conducted by Fred Danner, interim lead inspector, under the direction of Robin H. Liebal, Licensed Lead Risk Assessor #3356000422. The inspection was conducted in accordance with applicable Local, State, and Federal regulations.

Methodologies

This inspection was conducted in accordance with accepted industry standards and applicable regulations established by OSHA and the EPA. This inspection only identifies lead-based paint that is accessible through non-destructive methods. It does not identify lead-based paint materials located within walls, concrete decks, subfloors, or other generally inaccessible areas.

Disclaimer

This inspection report is written for and intended for the use of the Owner and its representatives only. HDHT is not responsible nor will be held liable for any interpretation made, opinions formed, or conclusions drawn by any third party as a result of examining the lab results, inspection results or this report. Any interpretations, opinions, and conclusions will be those made, formed, and drawn solely by that third party.

A lead inspector/risk assessor properly trained by a training institution utilizing an approved HUD curriculum and subsequently licensed to perform inspections by the Commonwealth of Virginia performed the inspection of this structure. HDHT accepts no liability nor makes any claims regarding lead based painted surfaces which were not tested and lead -based painted surfaces which were not accessible during the inspection process if such material was located behind or within walls, concrete decks, sub-floors, chases, or was otherwise generally inaccessible without destructive sampling.

Lead Based Paint Testing Results



1305 Radford Street
 Christiansburg, Virginia 24073
 Telephone: (540) 381-7999

Lead Testing for Construction

County of Roanoke, Virginia
 Roanoke County Administration Center
 Roanoke, Virginia

Roanoke County Fire and Rescue Station #3
 4212 Old Cave Spring Road
 Roanoke, Virginia

READING	CONCENTRATION	UNITS	RESULTS	DATE	TIME	USER	SITE	ROOM CHOICE	STRUCTURE	SUBSTRATE	CONDITION
1	1	mg/cm2	Positive	6/8/2022	10:08:49	HDHT	Fire and Rescue Station #3	Calibration			
2	0.3	mg/cm2	Negative	6/8/2022	10:15:56	HDHT	Fire and Rescue Station #3	Roof A	Coping	Metal	Intact
3	0.2	mg/cm2	Negative	6/8/2022	10:16:36	HDHT	Fire and Rescue Station #3	Roof A	Drain Cover	Metal	Intact
4	0.2	mg/cm2	Negative	6/8/2022	10:18:21	HDHT	Fire and Rescue Station #3	Roof A	Painted Area	Rubber	Intact
5	0	mg/cm2	Negative	6/8/2022	10:19:16	HDHT	Fire and Rescue Station #3	Roof B	Coping	Metal	Intact
6	0.1	mg/cm2	Negative	6/8/2022	10:20:08	HDHT	Fire and Rescue Station #3	Roof B	Drain Cover	Metal	Intact
7	0.3	mg/cm2	Negative	6/8/2022	10:20:49	HDHT	Fire and Rescue Station #3	Roof B	Painted Area	Rubber	Intact
8	0.2	mg/cm2	Negative	6/8/2022	10:21:18	HDHT	Fire and Rescue Station #3	Roof F	Coping	Metal	Intact
9	1.5	mg/cm2	Positive	6/8/2022	10:21:49	HDHT	Fire and Rescue Station #3	Roof F	Drain Cover	Metal	Intact
10	0.2	mg/cm2	Negative	6/8/2022	10:23:03	HDHT	Fire and Rescue Station #3	Roof F	Painted Vent	Metal	Intact
11	0.1	mg/cm2	Negative	6/8/2022	14:12:31	HDHT	Fire and Rescue Station #3	Roof F	Painted Vent	Metal	Intact
12	0.1	mg/cm2	Negative	6/8/2022	14:13:03	HDHT	Fire and Rescue Station #3	Roof F	Painted Vent	Metal	Intact
13	0.2	mg/cm2	Negative	6/8/2022	14:13:28	HDHT	Fire and Rescue Station #3	Roof E	Coping	Metal	Intact
14	0.1	mg/cm2	Negative	6/8/2022	14:13:57	HDHT	Fire and Rescue Station #3	Roof D	Coping	Metal	Intact
15	11.6	mg/cm2	Positive	6/8/2022	14:14:30	HDHT	Fire and Rescue Station #3	Roof D	Drain Cover	Metal	Intact
16	0.3	mg/cm2	Negative	6/8/2022	14:15:41	HDHT	Fire and Rescue Station #3	Roof D	Drain Field	Asphalt	Intact
17	0.2	mg/cm2	Negative	6/8/2022	14:16:29	HDHT	Fire and Rescue Station #3	Roof D	Pipe Jacket	Metal	Intact
18	1.1	mg/cm2	Positive	6/8/2022	14:16:55	HDHT	Fire and Rescue Station #3	Roof D	Unit	Metal	Intact
19	0.2	mg/cm2	Negative	6/8/2022	14:50:26	HDHT	Fire and Rescue Station #3	Roof D	Drain Field	Asphalt	Intact
20	0.3	mg/cm2	Negative	6/8/2022	14:50:56	HDHT	Fire and Rescue Station #3	Roof C	Coping	Metal	Intact
21	0.2	mg/cm2	Negative	6/8/2022	14:51:24	HDHT	Fire and Rescue Station #3	Roof C	Drain Cover	Metal	Intact
22	0.3	mg/cm2	Negative	6/8/2022	14:53:41	HDHT	Fire and Rescue Station #3	Roof C	Unit	Metal	Intact

Photos

4212 Old Cave Spring Road



KEY TO REPORT ROOF DESIGNATIONS



The roof designated as “Roof D” in this report (the only asphalt roof on the structure) had roof flashing that was found to be asbestos containing by the laboratory.

This roof also has lead sheets in drain sumps.

Applicable Licenses

DPOR License Lookup License Number 3303004480

License Details

Name	CROWDER, JARED ALLEN
License Number	3303004480
License Description	Asbestos Inspector License
Rank	Asbestos Inspector
Address	PULASKI, VA 24301
Initial Certification Date	2018-12-05
Expiration Date	2022-12-31

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DPOR License Lookup build 1,452 (built 2021-09-14 01:36:33).

DPOR License Lookup License Number 3342001012

License Details

Name	DANNER, FREDERICK REED
License Number	3342001012
License Description	Interim Lead Inspector License
Rank	Interim Lead Abatement Inspector
Address	CHRISTIANSBURG, VA 24073-0000
Initial Certification Date	2021-12-17
Expiration Date	2022-05-31

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DPOR License Lookup build 1,452 (built 2021-09-14 01:36:33).

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
11-30-2022

NUMBER
3356000422

BOARD FOR ASBESTOS, LEAD, AND HOME INSPECTORS
LEAD RISK ASSESSOR LICENSE



ROBIN H LIEBAL
4659 HEAVENER RD.
RADFORD, VA 24141-0000

D.P.O.R.

Shirley Brax-Vaughan
Shirley Brax-Vaughan, Director

Status can be verified at <http://www.dpor.virginia.gov>

DPOR-LIC (02/2017)

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

Cave Spring Volunteer Fire Department

4212 Old Cave Spring Rd. Roanoke, VA

Existing Roof Condition Assessment

May 21, 2021

Revised June 18, 2021



Table of Contents

A. Introduction

B. Existing Roof Conditions

~~C. Roof Recommendations~~

~~D. Cost Estimating~~

Appendix A. Existing Roof Plan

~~Appendix B. Roof Plan with Recommendations~~



A. Introduction

In April 2021, Thompson & Litton (T&L) entered into an agreement with Roanoke County to assess the condition of the roof membrane at the Cave Springs Fire and Rescue Facility and to provide an option of probable cost for replacement. The Study will also include an analysis of the existing structure to determine if the structure could support a sloped metal roof, and if it is a feasible solution. The pandemic has led to increased production times and costs. Factors listed in the Cost Estimate is a 30% cost increase due to the pandemic that T&L has seen over the past year. It is recommended that a 90 mil Black polyurethane polyethylene (EPDM) with 30 year warranty be used in the roof of the Facility. A 90 mil Thermoplastic Polyolefin (TPO) can be substituted for the 90 mil EPDM with little cost difference, approximately less than \$1000. Cost savings for the EPDM is from the additional 10 mil thickness of the EPDM from 80 mil to 90 mil with a 20 year warranty. This system is shown as Option One Alternate in the Cost Estimate Section of this report.



Figure 1, the fire station from plan east looking at Roof One, Roof Two, and Roof Three, with Roof Eight and Roof Six beyond.



B. Existing Roof Conditions

The Cave Springs Fire and Rescue Facility was originally constructed in 1970 with two bays, a kitchen facility, bunk rooms, and a hose tower. Multiple additions in the late 1970's and early 1980's have been made including additional truck and rescue vehicle bays, kitchen, and a two-story bunkroom. All roofs are low sloping with insulation except for the house tower, which has a steep pitch metal roof. This report has numbered the roofs for clarity. Refer to Appendix A for a plan of existing roof conditions and numbered roofs.

Roof One

Roof One is over the breakroom and radio room. Roof One is currently a white Thermoplastic Polyolefin (TPO) membrane over insulation and internal roof drains (4). The structure is flat and there are parapets on the two exposed sides. Roof overflow is accomplished by through-wall scuppers on the north parapet. There is minimal roof slope to the roof drains and ponding is occurring. Refer to Figures 2. It was also noted that the insulation was very soft indicating wet insulation. A rooftop unit has been placed on this roof with walkway pads surrounding the unit, but no pads leading to the unit. Refer to Figure 4. The facility is partially embedded into a hill which makes Roof One approximately six feet above grade at the back of the building (Plan North). Refer to Figure 3. This roof is accessed by a step ladder. It appears that several cracks have occurred in the masonry parapet and have been caulked and others have not. This is an indication that the masonry parapet was not properly installed. The parapet has a simple metal coping on top of the masonry. The TPO membrane extends approximately 8 inches above the roof and terminates under through-wall counterflashing. Leaves and debris were also visible at the roof drains preventing proper drainage.



Figure 2, minimal roof slope



Figure 3, showing the back of the wall approximately six feet above grade.



Figure 4, showing the rooftop unit with walkway pads surrounding the unit.



Roof Two

Roof Two is over the entrance vestibule of the fire station. It is accessed from Roof One by stepping over the parapet ledge. The roof is a black ethylene propylene diene monomer (EPDM) on insulation, over metal deck over steel joists. Refer to Figure 5. Roof Two appears to be draining properly. The parapet has a simple metal coping on top of the masonry. The EPDM roofing membrane is installed up the parapet wall and under the metal coping. There is a metal roof canopy that hangs over the exterior walls of the entrance. Refer to Figure 6.



Figure 5, the roof showing ethylene propylene diene monomer (EPDM) on insulation and water flowing to roof drain.



Figure 6, metal roof canopy over the entrance.

Roof Three

Roof Three is over one of the equipment bay additions. It is accessed from Roof One by an eight-foot step ladder. The roof is a black ethylene propylene diene monomer (EPDM) on insulation, metal deck over sloping steel joists. The steel joists slope plan south to plan north. Roof Three currently has two 3'-6" x 7'-6" bubble skylights. There were no apparent active leaks at the skylights, but it has been reported to have leaked at one time. The parapet has a simple metal coping on top of the masonry.



There is a weather station that is on Roof Three weighed down by concrete masonry units. Refer to Figures 7-9.

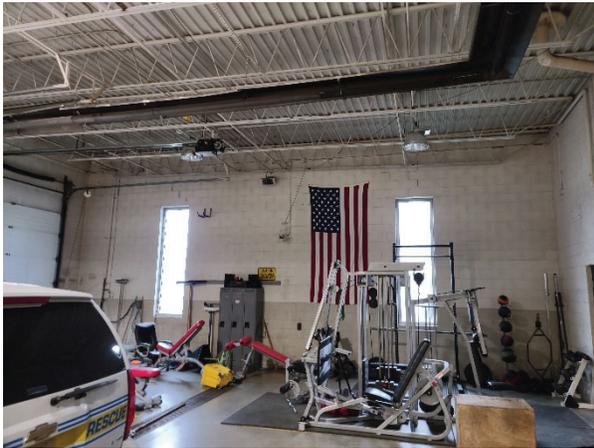


Figure 7, showing the joists sloping from plan south to plan north (Left to right).



Figure 8, the roof showing ethylene propylene diene monomer (EPDM) on insulation, and one of two skylights on roof.



Figure 9, the roof showing ethylene propylene diene monomer (EPDM) on insulation, and one of two skylights on roof, with a weather station on roof weighed down with Concrete Masonry Units (CMU).



Roof Four

Roof Four is over the original two-bay equipment space. Roof Four is a modified bitumen roof over insulation, metal deck over sloping steel joists. The steel joists slope plan east to plan west toward Roof Three. Along the parapet that joins Roof Three there appears to have been roof patch work and that is where most of the leaks have occurred. There are some vents along the plan north side that appear to be flashed properly. It is mainly the area along the wall that joins with Roof Three that has caused some ponding and leaks with patch work on the roof. Refer to Figures 10-12. The parapet has a simple metal coping on top of the masonry.



Figure 10, showing the modified bitumen roof over insulation sloping from plan east to plan west.



Figure 11, showing the roof patch work in the corner of the joining wall of Roofs Three and Four.



Figure 12, modified bitumen roof over insulation.



Roof Five

Roof Five is over one of the equipment bay additions. It is accessed from Roof Four from a narrow passage between the hose tower and edge of roof intersection. The roof is a black ethylene propylene diene monomer (EPDM) on insulation on metal deck over steel joists. There is minimal sloping to the roof drains on the plan south side of the roof. The parapet has a simple metal coping on top of the masonry. It appears that there was once a drain in the center of the roof along the plan south side that has been removed and patched over. The roof still slightly slopes to that spot and it appears there is some ponding occurring due to the minimal slope. There are some fan coil rooftop units located in the middle of the roof on the plan north side. Refer to Figures 13-15.



Figure 13, drainage along the plan south side of Roof Five.



Figure 14, showing where there is a patch over where the drain in the middle of the plan south side used to be.



Figure 15, showing the fan coil rooftop units in the middle along the plan north side of Roof Five. Showing the other drain on the plan south side of the roof.

Roof Six

Roof Six is over the hose tower. The roof is a metal on metal deck over a steel beam. The roof has a steep slope, approximately a 10:12 pitch, that runs from plan south to plan north and down into a rain gutter and onto Roof Five where it flows to the roof drain on Roof Five. Roof Six is in the middle of where Roofs Four, Five and Seven join one another. There is a small bump out on the plan north side that has a sloped roof system that runs from plan north to plan south. The roof appears to be in good condition. Refer to Figures 16-17.



Figure 16, showing the steep slope on Roof Six.



Figure 17, showing the rain gutter and downspout on Roof Six.

Roof Seven

Roof Seven is over the original kitchen and day room. It is accessed from Roof Four by an eight-foot ladder. The roof is a black ethylene propylene diene monomer (EPDM) on insulation, metal deck over sloping steel joists. The steel joists slope plan west to plan east. A roof top unit has been placed on this roof but has no walkway pads getting to or from the unit. Roof Seven has a fan coil rooftop unit with a couple walkway pads plan east of the unit. Roof drains are located plan east of the roof. There are two scuppers along the plan north and plan east parapets that have been removed and patched. The parapet has a simple metal coping on top of the masonry. It appears that the EPDM membrane extends up and over the parapet under the metal coping. Refer to Figures 18-19.





Figure 18, showing everything on Roof Seven from the plan west side.



Figure 19, showing everything on Roof Seven from the plan south side.

Roof Eight

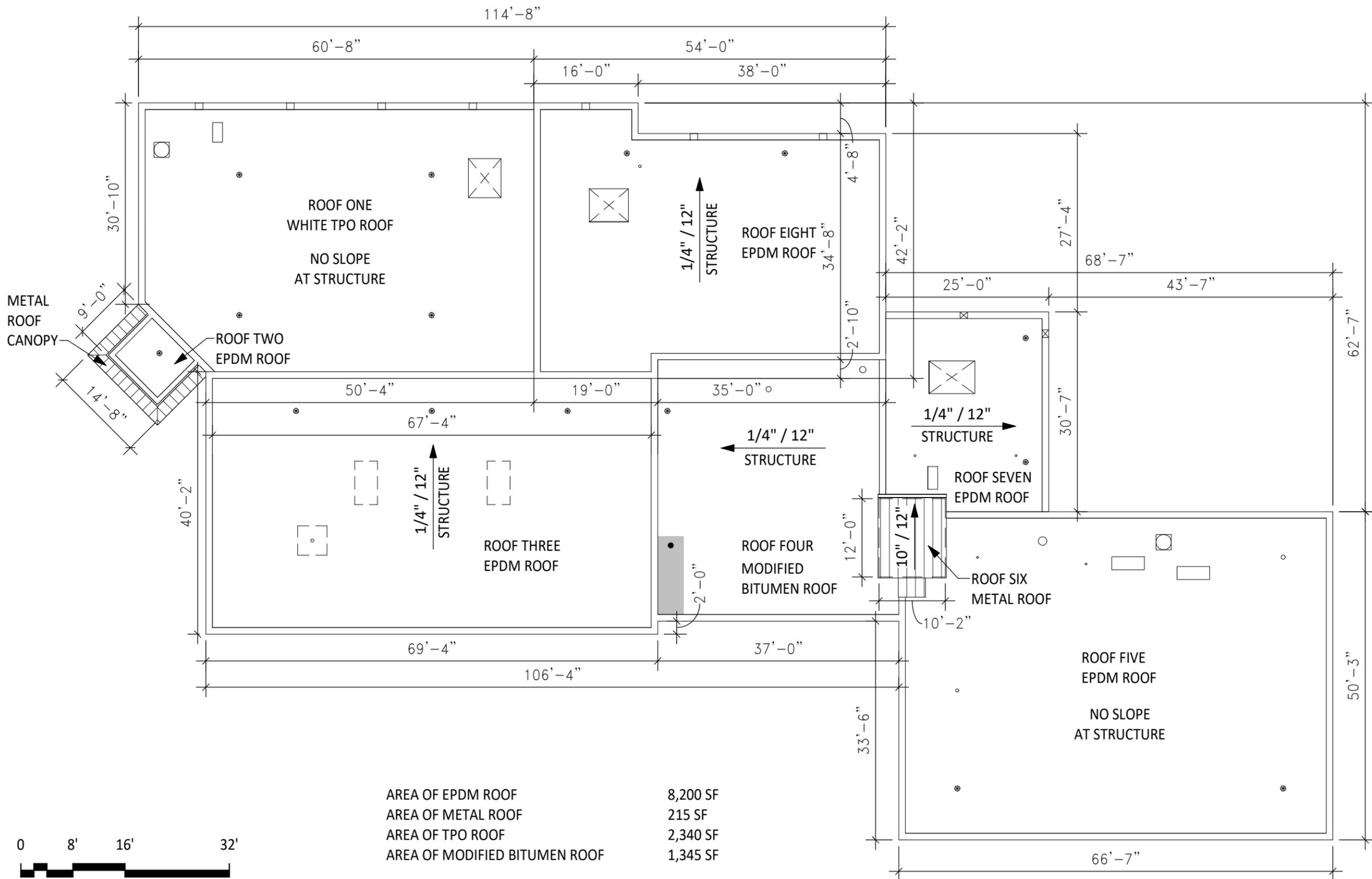
Roof Eight is over the bunk room. It is accessed from Roof Four by a ladder. The roof is a black ethylene propylene diene terpolymer (EPDM) on insulation on metal deck over sloping steel joists. The steel joists slope from plan south to plan north. There are drains that are located along the plan north side of the roof with scuppers to provide roof overflow. A roof top unit has been placed on this roof with no walkway pads to and from the unit. The parapet has a simple metal coping on top of the masonry. It appears that the EPDM membrane extends up and over the parapet under the metal coping. Refer to Figures 20-21.



Figure 20, showing one of the roof drains and scuppers. With the slope of the roof.



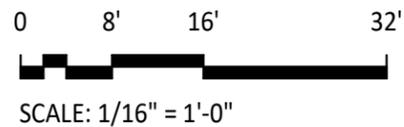
Figure 21, showing the roof top unit having no walkway pads.



ROOF LEGEND

-  ROOFTOP UNIT
-  ROOF VENT
-  ROOF UNIT
-  EXISTING SKYLIGHT TO BE REMOVED
-  EXISTING WEATHER TOWER
-  EXISTING ROOF PATCH WORK
-  ROOF VENT
-  EXISTING SCUPPER
-  REMOVED SCUPPER
-  EXISTING ROOF DRAIN
-  REMOVED ROOF DRAIN
-  ROOF VENT
-  ROOF VENT

AREA OF EPDM ROOF	8,200 SF
AREA OF METAL ROOF	215 SF
AREA OF TPO ROOF	2,340 SF
AREA OF MODIFIED BITUMEN ROOF	1,345 SF
TOTAL ROOF SQUARE FOOTAGE	12,100 SF



ROANOKE FIRE & RESCUE

EXISTING ROOF PLAN

MAY 24, 2021



IFB # 2023-023
ATTACHMENT G: Asbestos & Lead Inspection Report
Dated June 13, 2022



Solutions for all your Environmental and OSHA Concerns

June 13, 2022

Asbestos & Lead Inspection Report

Project Location:

4212 Old Cave Spring Road
Roanoke, Virginia

Prepared For:

Roanoke County General Services
Roanoke, VA

Prepared By:


Fred Danner
Interim Lead Inspector

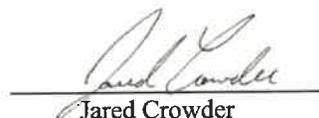

Jared Crowder
Asbestos Inspector

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SCOPE OF WORK

ASBESTOS INSPECTION

- SAMPLE SUMMARY
- LABORATORY REPORT

LEAD INSPECTION

- LEAD BASED PAINT TESTING RESULTS

APPLICABLE LICENSES

Scope of Work

HDH Technical, Inc. was contracted by Roanoke County to provide an asbestos inspection and lead-based paint screening of the roof sections of the structure known as Roanoke County Fire and Rescue Station #3 located at 4212 Old Cave Spring Road, Roanoke, Virginia. The inspection was conducted by personnel trained and licensed in accordance with the regulations of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. This inspection was performed using current EPA AHERA standards. This protocol was used for the determination, sampling and analysis of suspected Asbestos Containing Materials (ACM). Only those parts of the structure scheduled to undergo renovation, as directed by the client, were included in this inspection.

Also included in this report is a Lead-Based Paint Screening at this location. The term “screening” is used as opposed to “inspection” due to the fact that a complete HUD type paint inspection of each surface in every space was not performed. Generally speaking, each differing type of interior and exterior component and each differing type of paint was tested, although each component was not tested in each room. This “screening” will be referred to as an “inspection” throughout this report and was conducted in accordance with accepted industry standards and applicable regulations established by OSHA and the EPA. This inspection only identifies lead-based paint that is accessible through non-destructive methods. It does not identify lead-based paint materials located within walls, concrete decks, subfloors, or other generally inaccessible areas.

ASBESTOS INSPECTION

An inspection of the roof sections of 4212 Cave Spring Road was performed on June 8, 2022 by representatives of HDHT. The objective of this inspection was to determine the location of asbestos-containing building materials (ACBM) currently located in the various roof sections of this structure that may be disturbed in conjunction with upcoming roof replacement/repair activities at this structure.

The inspection was conducted by personnel trained and licensed in accordance with the regulations of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. This inspection meets the protocol outlined in current EPA AHERA regulations. This protocol was used for the determination, sampling and analysis of suspect asbestos containing materials.

Please see photograph #1 in the "Photos" section of this report for the roof designations used in this report.

As the sample summary indicates, the following suspect materials sampled were reported to be asbestos containing by the laboratory:

- **Roof Flashing – Roof D (Asphalt Roof Section)**

These NON-Friable asbestos containing materials should be removed prior to roofing activities at this location, if they are to be disturbed. Removal should be performed by licensed, contract personnel using approved methods.

Friable Asbestos Material: Material when dry, may be crumbled, pulverized or reduced to powder by hand pressure and includes previously non-friable material after such previously non-friable material becomes damaged to the extent that when dry may be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable Asbestos Material: Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not release fibers during any appropriate use, handling, demolition, storage, transportation, processing or disposal.

This information should be provided to all contract personnel for their use in meeting current OSHA requirements. Every attempt was made to gain access to all areas or to assess representative materials entering or leaving the area. HDH Technical, Inc. accepts no liability nor makes any claims regarding ACBM which was not accessible during the inspection process if such material was located behind or within walls, concrete decks, subfloors, or was generally inaccessible without destructive sampling. If any additional suspect materials are identified during the course of the project, the contractor is to immediately stop work and contact the Owner for further direction.

Asbestos Sample Summary

Laboratory Report



10501 Trade Ct., Suite 100
 N. Chesterfield, VA 23139
 804-897-1177 / 888-895-1175
 Fax 804-897-0070
 www.sanair.com

**Asbestos
 Chain of Custody**

SanAir ID Number
 22028096

Company: HDH Technical, Inc	Project #: Roanoke County	Collected by: Crowder
Address: 1305 Radford Street	Project Name: 4212 Old Cave Spring Rd	Phone #: 540-381-7999
City, St, Zip: Christiansburg, VA 24073	Date Collected: 6/8/2022	Email: rriebal@hdhassociates.com
State of Collection: VA Account #: 1769	P.O. Number:	Email: jcrowder@hdhassociates.com

Bulk			Air			Soil/Vermiculite		
ABB	PLM EPA 600/R-93/116	<input checked="" type="checkbox"/>	ABA	PCM NIOSH 7400	<input type="checkbox"/>	ABSE	PLM EPA 600/R-93/116 (Qual.)	<input type="checkbox"/>
	Positive Stop	<input type="checkbox"/>	ABA-2	OSHA w/ TWA	<input type="checkbox"/>	ABSP	PLM CARB 435 (LOD <1%)	<input type="checkbox"/>
ABEPA	PLM EPA 400 Point Count	<input type="checkbox"/>	ABTEM	TEM AHERA	<input type="checkbox"/>	ABSP1	PLM CARB 435 (LOD 0.25%)	<input type="checkbox"/>
ABB1K	PLM EPA 1000 Point Count	<input type="checkbox"/>	ABATN	TEM NIOSH 7402	<input type="checkbox"/>	ABSP2	PLM CARB 436 (LOD 0.1%)	<input type="checkbox"/>
ABBEEN	PLM EPA NOB	<input type="checkbox"/>	ABT2	TEM Level II	<input type="checkbox"/>			
ABBCH	TEM Chatfield	<input type="checkbox"/>						
ABBTM	TEM EPA NOB	<input type="checkbox"/>						

Water			New York ELAP			Dust		
ABHE	EPA 100.2	<input type="checkbox"/>	PLM NY	PLM EPA 600/M4-82-020	<input type="checkbox"/>	ABWA	TEM Wipe ASTM D-6480	<input type="checkbox"/>
			ABEFA2	NY ELAP 198.1	<input type="checkbox"/>	ABDMV	TEM Microvac ASTM D-5755	<input type="checkbox"/>
			ABENY	NY ELAP 198.6 PLM NOB	<input type="checkbox"/>			
			ABBNY	NY ELAP 198.4 TEM NOB	<input type="checkbox"/>	Matrix	Other	<input type="checkbox"/>

Turn Around Times	3 HR (4 HR TEM)	<input type="checkbox"/>	6 HR (8HR TEM)	<input type="checkbox"/>	12 HR	<input type="checkbox"/>	24 HR	<input checked="" type="checkbox"/>
	2 Days	<input type="checkbox"/>	3 Days	<input type="checkbox"/>	4 Days	<input type="checkbox"/>	5 Days	<input type="checkbox"/>

Special Instructions:

SAMPLE ID	SAMPLE DESCRIPTION
RM 1	Roof Material - Roof D
RM 2	Roof Material - Roof D - Repair
RF 3.1	Roof Flashing - Roof D
RF 3.2	Roof Flashing - Roof D
CK 4.1	Caulk - Pipe
CK 4.2	Caulk - Pipe
VB 5.1	Vapor Barrier - Roof F
VB 5.2	Vapor Barrier - Roof F
CK 6.1	Caulk - Roof D
CK 6.2	Caulk - Roof D
CK 7.1	Caulk - Roof C

Special Instructions

Relinquished by	Date	Time	Received by	Date	Time
Crowder	6/8/2022	3:26 PM	UPS	6/8/2022	3:26 PM
			<i>[Signature]</i>	6/9/22	10:50

Unless scheduled, the turn around time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or Holiday work must be scheduled ahead of time and is charged for rush turn around time. Work with standard turn around time sent Priority Overnight and Billed to Recipient will be charged a \$10 shipping fee.



SanAir ID Number
22028096
 FINAL REPORT
 6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
 Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
RM 1 / 22028096-001 Roof Material - Roof D, Roofing	Black Non-Fibrous Heterogeneous	15% Glass	85% Other	None Detected
RM 1 / 22028096-001 Roof Material - Roof D, Roofing	Black Non-Fibrous Heterogeneous	10% Synthetic	90% Other	None Detected
RM 1 / 22028096-001 Roof Material - Roof D, Tar Paper	Black Fibrous Homogeneous	50% Glass	50% Other	None Detected
RM 1 / 22028096-001 Roof Material - Roof D, Insulation	Brown Fibrous Homogeneous	90% Cellulose	10% Other	None Detected
RM 2 / 22028096-002 Roof Material - Roof D - Repair, Shingle	Black Non-Fibrous Heterogeneous	15% Glass	85% Other	None Detected
RM 2 / 22028096-002 Roof Material - Roof D - Repair, Tar	Black Non-Fibrous Homogeneous		100% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Flashing	Black Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Tar Paper	Black Fibrous Homogeneous	65% Synthetic	35% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Tar Paper	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
RF 3.1 / 22028096-003 Roof Flashing - Roof D, Insulation	Brown Fibrous Homogeneous	90% Cellulose	10% Other	None Detected

Analyst:

Approved Signatory:

Analysis Date: 6/10/2022

Date: 6/10/2022



SanAir ID Number
22028096
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 6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
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Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic Appearance	Components		Asbestos Fibers
		% Fibrous	% Non-fibrous	
RF 3.2 / 22028096-004 Roof Flashing - Roof D, Flashing	Black Non-Fibrous Homogeneous		92% Other	8% Chrysotile
RF 3.2 / 22028096-004 Roof Flashing - Roof D, Insulation	Brown Fibrous Homogeneous	90% Cellulose	10% Other	None Detected
CK 4.1 / 22028096-005 Caulk - Pipe	Black Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected
CK 4.2 / 22028096-006 Caulk - Pipe	Black Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected
VB 5.1 / 22028096-007 Vapor Barrier - Roof F	Black Non-Fibrous Homogeneous	10% Cellulose	90% Other	None Detected
VB 5.2 / 22028096-008 Vapor Barrier - Roof F	Black Non-Fibrous Homogeneous	10% Cellulose	90% Other	None Detected
CK 6.1 / 22028096-009 Caulk - Roof D	Black Non-Fibrous Heterogeneous	10% Synthetic	90% Other	None Detected
CK 6.2 / 22028096-010 Caulk - Roof D	Black Non-Fibrous Heterogeneous	10% Synthetic	90% Other	None Detected
CK 7.1 / 22028096-011 Caulk - Roof C	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
CK 7.2 / 22028096-012 Caulk - Roof C	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected

Analyst:

Approved Signatory:

Analysis Date: 6/10/2022

Date: 6/10/2022



SanAir ID Number

22028096

FINAL REPORT

6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

Table with 5 columns: SanAir ID / Description, Stereoscopic Appearance, % Fibrous, % Non-fibrous, Asbestos Fibers. Contains 3 rows of data for different caulk samples.

Analyst:

[Signature]

Approved Signatory:

[Signature]

Analysis Date:

6/10/2022

Date:

6/10/2022

Disclaimer

This report is the sole property of the client named on the SanAir Technologies Laboratory chain-of-custody (COC). Results in the report are confidential information intended only for the use by the customer listed on the COC. Neither results nor reports will be discussed with or released to any third party without our client's written permission. The final report shall not be reproduced except in full without written approval of the laboratory to assure that parts of the report are not taken out of context. The information provided in this report applies only to the samples submitted and is relevant only for the date, time, and location of sampling. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample(s) in the condition in which they arrived at the laboratory and information provided by the client on the COC, such as: project number, project name, collection dates, po number, special instructions, samples collected by, sample numbers, sample identifications, sample type, selected analysis type, flow rate, total volume or area, and start stop times that may affect the validity of the results in this report. Samples were received in good condition unless otherwise noted on the report. SanAir assumes no responsibility or liability for the manner in which the results are used or interpreted. This report does not constitute and shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any other U.S. governmental agencies and may not be certified by every local, state, and federal regulatory agencies.

Samples are held for a period of 60 days. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations.

For NY state samples, method EPA 600/M4-82-020 is performed.

NYELAP Disclaimer:

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications

NVLAP lab code 200870-0

City of Philadelphia: ALL-460

PA Department of Environmental Protection Number: 68-05397

California License Number: 2915

Colorado License Number: AL-23143

Connecticut License Number: PH-0105

Massachusetts License Number: AA000222

Maine License Number: LB-0075, LA-0084

New York ELAP lab ID: 11983

Rhode Island License Number: PCM00126, PLM00126, TEM00126

Texas Department of State Health Services License Number: 300440

Commonwealth of Virginia 3333000323

Washington State License Number: C989

West Virginia License Number: LT000616

Vermont License: AL166318

Louisiana Department of Environmental Quality: 212253, Cert 05088

Revision Date: 8/14/2020



SanAir ID Number
22028096
FINAL REPORT
6/10/2022 11:04:26 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: 4212 Old Cave Spring Rd
Collected Date: 6/8/2022
Received Date: 6/9/2022 10:50:00 AM

Dear Crowder,

We at SanAir would like to thank you for the work you recently submitted. The 14 sample(s) were received on Thursday, June 09, 2022 via UPS. The final report(s) is enclosed for the following sample(s): RM 1, RM 2, RF 3.1, RF 3.2, CK 4.1, CK 4.2, VB 5.1, VB 5.2, CK 6.1, CK 6.2, CK 7.1, CK 7.2, CK 8.1, CK 8.2.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

A handwritten signature in black ink that reads "Sandra Sobrino". The signature is written in a cursive, flowing style.

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:

- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:

- 14 samples in Good condition.

LEAD INSPECTION

On June 8, 2022 a Lead-Based Paint inspection was also conducted on the roof sections at 4212 Old Cave Spring Road. The inspection was conducted to identify potential lead-based paint concerns involved in this roofing project. The areas were inspected by Fred Danner.

Please see photograph #1 in the “Photos” section of this report for the roof designations used in this report.

The inspection determined that NONE of the surfaces tested contain lead greater than or equal to 1.0 mg/cm, and are NOT considered to be lead-based paint surfaces as defined by the Virginia Department of Professional and Occupational Regulation (DPOR) and the Environmental Protection Agency (EPA).

For informational purposes, the following material was sampled and identified to be a lead component. Although not included in the Virginia Lead-based Paint Activities Regulations, the contractor should be provided this information in the event it is removed for disposal purposes:

- **Lead Sheets in drain sumps on Roof D (Asphalt Roof Section)**

If lead is present, regardless of quantity, OSHA regulations are applicable. All persons involved in the disturbance of lead based or lead containing painted surfaces should be adequately trained to do so. All contractors should be provided with the results for their use in meeting current OSHA requirements for the protection of their workers and the environment.

This inspection was in compliance with the Virginia Lead-based Paint Activities Regulations, October 1, 1995. The Inspector is properly trained, licensed, and met the competency requirements spelled out in those regulations.

FIELD VERIFICATION

Fred Danner, Interim Lead Inspector, under the direction of Robin H. Liebal, inspected the structure on March 1, 2022.

A total of Twenty-Two (22) X-Ray Florescence (XRF) readings, including calibrations, were taken in substantial conformance with industry standards and other applicable federal and state regulations.

Robin H. Liebal’s Virginia Lead Risk Assessor license number is 3356000422.
Fred Danner’s Interim Lead Inspector license number is 3342001012.

A complete copy of all tested surfaces and results are included in this report. All positive samples are listed in BOLD.

HDH Technical, Inc. (HDHT) used the Heuresis Corporation model Pb200i (Serial#1609) X-Ray Fluorescence (XRF) instrument for the screening. This unit was resourced in February 2020. The instrument is not substrate dependent according to that performance characteristic sheet, so no substrate corrections were required during this screening.

The XRF was calibrated prior to use and at the end of the testing, or every four hours, whichever came first. All calibrations were conducted on a 1.10 ± 0.1 mg/cm² NIST SRM paint film. All calibrations are noted on the x-ray fluorescence data sheets.

For the purposes of this inspection lead-based paint is defined as greater than or equal to 1.0 mg/cm². The Heuresis Corporation instrument (model Pb200i) used in this survey have published threshold values of 1.0 mg/cm² on all substrates and do not require substrate correction. Paint chip confirmation of inconclusive samples was not necessary since no inconclusive surfaces were identified during sampling with this X-ray Fluorescence Analyzer. Lastly, this report detailing the findings of the inspection report was written to document the inspection and provide a permanent record of the evaluation.

Qualifications

The inspection was conducted by Fred Danner, interim lead inspector, under the direction of Robin H. Liebal, Licensed Lead Risk Assessor #3356000422. The inspection was conducted in accordance with applicable Local, State, and Federal regulations.

Methodologies

This inspection was conducted in accordance with accepted industry standards and applicable regulations established by OSHA and the EPA. This inspection only identifies lead-based paint that is accessible through non-destructive methods. It does not identify lead-based paint materials located within walls, concrete decks, subfloors, or other generally inaccessible areas.

Disclaimer

This inspection report is written for and intended for the use of the Owner and its representatives only. HDHT is not responsible nor will be held liable for any interpretation made, opinions formed, or conclusions drawn by any third party as a result of examining the lab results, inspection results or this report. Any interpretations, opinions, and conclusions will be those made, formed, and drawn solely by that third party.

A lead inspector/risk assessor properly trained by a training institution utilizing an approved HUD curriculum and subsequently licensed to perform inspections by the Commonwealth of Virginia performed the inspection of this structure. HDHT accepts no liability nor makes any claims regarding lead based painted surfaces which were not tested and lead -based painted surfaces which were not accessible during the inspection process if such material was located behind or within walls, concrete decks, sub-floors, chases, or was otherwise generally inaccessible without destructive sampling.

Lead Based Paint Testing Results



1305 Radford Street
 Christiansburg, Virginia 24073
 Telephone: (540) 381-7999

Lead Testing for Construction

County of Roanoke, Virginia
 Roanoke County Administration Center
 Roanoke, Virginia

Roanoke County Fire and Rescue Station #3
 4212 Old Cave Spring Road
 Roanoke, Virginia

READING	CONCENTRATION	UNITS	RESULTS	DATE	TIME	USER	SITE	ROOM CHOICE	STRUCTURE	SUBSTRATE	CONDITION
1	1	mg/cm2	Positive	6/8/2022	10:08:49	HDHT	Fire and Rescue Station #3	Calibration			
2	0.3	mg/cm2	Negative	6/8/2022	10:15:56	HDHT	Fire and Rescue Station #3	Roof A	Coping	Metal	Intact
3	0.2	mg/cm2	Negative	6/8/2022	10:16:36	HDHT	Fire and Rescue Station #3	Roof A	Drain Cover	Metal	Intact
4	0.2	mg/cm2	Negative	6/8/2022	10:18:21	HDHT	Fire and Rescue Station #3	Roof A	Painted Area	Rubber	Intact
5	0	mg/cm2	Negative	6/8/2022	10:19:16	HDHT	Fire and Rescue Station #3	Roof B	Coping	Metal	Intact
6	0.1	mg/cm2	Negative	6/8/2022	10:20:08	HDHT	Fire and Rescue Station #3	Roof B	Drain Cover	Metal	Intact
7	0.3	mg/cm2	Negative	6/8/2022	10:20:49	HDHT	Fire and Rescue Station #3	Roof B	Painted Area	Rubber	Intact
8	0.2	mg/cm2	Negative	6/8/2022	10:21:18	HDHT	Fire and Rescue Station #3	Roof F	Coping	Metal	Intact
9	1.5	mg/cm2	Positive	6/8/2022	10:21:49	HDHT	Fire and Rescue Station #3	Roof F	Drain Cover	Metal	Intact
10	0.2	mg/cm2	Negative	6/8/2022	10:23:03	HDHT	Fire and Rescue Station #3	Roof F	Painted Vent	Metal	Intact
11	0.1	mg/cm2	Negative	6/8/2022	14:12:31	HDHT	Fire and Rescue Station #3	Roof F	Painted Vent	Metal	Intact
12	0.1	mg/cm2	Negative	6/8/2022	14:13:03	HDHT	Fire and Rescue Station #3	Roof E	Coping	Metal	Intact
13	0.2	mg/cm2	Negative	6/8/2022	14:13:28	HDHT	Fire and Rescue Station #3	Roof D	Coping	Metal	Intact
14	0.1	mg/cm2	Negative	6/8/2022	14:13:57	HDHT	Fire and Rescue Station #3	Roof D	Coping	Metal	Intact
15	11.6	mg/cm2	Positive	6/8/2022	14:14:30	HDHT	Fire and Rescue Station #3	Roof D	Drain Field	Asphalt	Intact
16	0.3	mg/cm2	Negative	6/8/2022	14:15:41	HDHT	Fire and Rescue Station #3	Roof D	Pipe Jacket	Metal	Intact
17	0.2	mg/cm2	Negative	6/8/2022	14:16:29	HDHT	Fire and Rescue Station #3	Roof D	Unit	Metal	Intact
18	1.1	mg/cm2	Positive	6/8/2022	14:16:55	HDHT	Fire and Rescue Station #3	Roof D	Drain Field	Asphalt	Intact
19	0.2	mg/cm2	Negative	6/8/2022	14:50:26	HDHT	Fire and Rescue Station #3	Roof C	Coping	Metal	Intact
20	0.3	mg/cm2	Negative	6/8/2022	14:50:56	HDHT	Fire and Rescue Station #3	Roof C	Drain Cover	Metal	Intact
21	0.2	mg/cm2	Negative	6/8/2022	14:51:24	HDHT	Fire and Rescue Station #3	Roof C	Unit	Metal	Intact
22	0.3	mg/cm2	Negative	6/8/2022	14:53:41	HDHT	Fire and Rescue Station #3	Roof C	Unit	Metal	Intact

Photos

4212 Old Cave Spring Road



KEY TO REPORT ROOF DESIGNATIONS



The roof designated as “Roof D” in this report (the only asphalt roof on the structure) had roof flashing that was found to be asbestos containing by the laboratory.

This roof also has lead sheets in drain sumps.

Applicable Licenses

DPOR License Lookup License Number 3303004480

License Details

Name	CROWDER, JARED ALLEN
License Number	3303004480
License Description	Asbestos Inspector License
Rank	Asbestos Inspector
Address	PULASKI, VA 24301
Initial Certification Date	2018-12-05
Expiration Date	2022-12-31

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DPOR License Lookup build 1,452 (built 2021-09-14 01:36:33).

DPOR License Lookup License Number 3342001012

License Details

Name	DANNER, FREDERICK REED
License Number	3342001012
License Description	Interim Lead Inspector License
Rank	Interim Lead Abatement Inspector
Address	CHRISTIANSBURG, VA 24073-0000
Initial Certification Date	2021-12-17
Expiration Date	2022-05-31

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COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
3356000422

EXPIRES ON
11-30-2022

BOARD FOR ASBESTOS, LEAD, AND HOME INSPECTORS
LEAD RISK ASSESSOR LICENSE



ROBIN H LIEBAL
4659 HEAVENER RD.
RADFORD, VA 24141-0000

D.P.O.R.

Shirley Brax-Vaughan
Shirley Brax-Vaughan, Director

Status can be verified at <http://www.dpor.virginia.gov>

DPOR-LIC (02/2017)

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

IFB # 2023-023
ATTACHMENT H: Asbestos & Lead Inspection Report
Dated July 29, 2022



Solutions for all your Environmental and OSHA Concerns

July 29, 2022

Asbestos & Lead Inspection Report

Project Location:

4212 Old Cave Spring Road
Roanoke, Virginia

Prepared For:

Roanoke County General Services
Roanoke, VA

Prepared By:

Robin H. Liebal
Lead Risk Assessor

Fred Danner
Asbestos Inspector

TABLE OF CONTENTS

SCOPE OF WORK

ASBESTOS INSPECTION

- SAMPLE SUMMARY
- LABORATORY REPORT

LEAD INSPECTION

- LEAD BASED PAINT TESTING RESULTS

PHOTOS

APPLICABLE LICENSES

Scope of Work

HDH Technical, Inc. was contracted by Roanoke County, Virginia to provide an asbestos inspection and lead-based paint screening on portions of Roanoke County Fire and Rescue Station #3, located at 4212 Old Cave Spring Road, Roanoke, Virginia, that could potentially be disturbed in conjunction with upcoming roof replacement activity. The inspection was conducted by personnel trained and licensed in accordance with the regulations of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. This inspection was performed using current EPA AHERA standards. This protocol was used for the determination, sampling and analysis of suspected Asbestos Containing Materials (ACM). Only those parts of the structure scheduled to undergo renovation, as directed by the client, were included in this inspection.

Also included in this report is a Lead-Based Paint Screening at this location. The term “screening” is used as opposed to “inspection” due to the fact that a complete HUD type paint inspection of each surface in every space was not performed. Generally speaking, each differing type of interior and exterior component and each differing type of paint was tested, although each component was not tested in each room. This “screening” will be referred to as an “inspection” throughout this report and was conducted in accordance with accepted industry standards and applicable regulations established by OSHA and the EPA. This inspection only identifies lead-based paint that is accessible through non-destructive methods. It does not identify lead-based paint materials located within walls, concrete decks, subfloors, or other generally inaccessible areas.

ASBESTOS INSPECTION

An inspection of the specified locations within 4212 Old Cave Spring Road was performed on July 27, 2022 by representatives of HDHT. The objective of this inspection was to determine the location of asbestos-containing building materials (ACBM) currently located on the interior of this structure that may be disturbed in conjunction with upcoming roof replacement activities at specified locations in this structure.

The inspection was conducted by personnel trained and licensed in accordance with the regulations of the Environmental Protection Agency (EPA) and the Commonwealth of Virginia. This inspection meets the protocol outlined in current EPA AHERA regulations. This protocol was used for the determination, sampling and analysis of suspect asbestos containing materials.

As the sample summary indicates, NONE of the suspect materials sampled were reported to be asbestos containing by the laboratory.

This information should be provided to all contract personnel for their use in meeting current OSHA requirements. Every attempt was made to gain access to all areas or to assess representative materials entering or leaving the area. HDH Technical, Inc. accepts no liability nor makes any claims regarding ACBM which was not accessible during the inspection process if such material was located behind or within walls, concrete decks, subfloors, or was generally inaccessible without destructive sampling. If any additional suspect materials are identified during the course of the project, the contractor is to immediately stop work and contact the Owner for further direction.

Asbestos Sample Summary

Laboratory Report



1551 Oakbridge Drive Suite B
 Powhatan, VA 23139
 804-807-1177 / 888-895-1175
 Fax 804-897-0070
 www.sanair.com

**Asbestos
 Chain of Custody**

SanAir ID Number
 22037267

Company: HDH Technical, Inc	Project #: Roanoke County	Collected by: Danner
Address: 1305 Radford Street	Project Name: Cave Spring Firehouse	Phone #: 540-381-7999
City, St, Zip: Christiansburg, VA 24073	Date Collected: 7/27/2022	Email: rliebal@hdhassociates.com
State of Collection: VA Account #: 1769	P.O. Number:	Email: fdanner@hdhassociates.com

Bulk			Air			Soil/Vermiculite		
ABB	PLM EPA 600/R-93/116	<input checked="" type="checkbox"/>	ABA	PCM NIOSH 7400	<input type="checkbox"/>	ABSE	PLM EPA 600/R-93/116 (Qual.)	<input type="checkbox"/>
	Positive Stop	<input type="checkbox"/>	ABA-2	OSHA w TWA*	<input type="checkbox"/>	ABSP	PLM CARB 435 (LOD <1%)	<input type="checkbox"/>
ABEPA	PLM EPA 400 Point Count	<input type="checkbox"/>	ABTEM	TEM AHERA	<input type="checkbox"/>	ABSP1	PLM CARB 435 (LOD 0.25%)	<input type="checkbox"/>
ABB1K	PLM EPA 1000 Point Count	<input type="checkbox"/>	ABATN	TEM NIOSH 7402	<input type="checkbox"/>	ABSP2	PLM CARB 435 (LOD 0.1%)	<input type="checkbox"/>
ABBEN	PLM EPA NOB	<input type="checkbox"/>	ABT2	TEM Level II	<input type="checkbox"/>			
ABBCH	TEM Chatfield	<input type="checkbox"/>						
ABBTM	TEM EPA NOB	<input type="checkbox"/>						
Water			New York ELAP			Dust		
ABHE	EPA 100.2	<input type="checkbox"/>	PLM NY	PLM EPA 600/M4-82-020	<input type="checkbox"/>	ABWA	TEM Wipe ASTM D-6480	<input type="checkbox"/>
			ABEPA2	NY ELAP 198.1	<input type="checkbox"/>	ABDMV	TEM Microvac ASTM D-5755	<input type="checkbox"/>
			ABENY	NY ELAP 198.6 PLM NOB	<input type="checkbox"/>			
			ABBNY	NY ELAP 198.4 TEM NOB	<input type="checkbox"/>			
						Matrix	Other	

Turn Around Times	3 HR (4 HR TEM)	<input type="checkbox"/>	6 HR (8HR TEM)	<input type="checkbox"/>	12 HR	<input type="checkbox"/>	24 HR	<input checked="" type="checkbox"/>
	2 Days	<input type="checkbox"/>	3 Days	<input type="checkbox"/>	4 Days	<input type="checkbox"/>	5 Days	<input type="checkbox"/>

Special Instructions:

SAMPLE ID	SAMPLE DESCRIPTION
EM 1.1	Elbow Mud - Roof Drains
EM 1.2	Elbow Mud - Roof Drains
ES 2.1	End Sealer - Roof Drains
ES 2.2	End Sealer - Roof Drains
PW 3.1	Pipe Wrap - Roof Drains
PW 3.2	Pipe Wrap - Roof Drains

Special Instructions

Relinquished by	Date	Time	Received by	Date	Time
Danner	7/27/2022	3:28 PM	UPS	7/27/2022	3:28 PM
			EDR	7/28/22	10:45 a.m.

Unless scheduled, the turn around time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or Holiday work must be scheduled ahead of time and is charged for rush turn around time. Work with standard turn around time sent Priority Overnight and Billed to Recipient will be charged a \$10 shipping fee.



SanAir ID Number
22037267
 FINAL REPORT
 7/29/2022 10:16:13 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
 Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: Cave Spring Firehouse
Collected Date: 7/27/2022
Received Date: 7/28/2022 10:45:00 AM

Analyst: Hogrefe, Sarah

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
EM 1.1 / 22037267-001 Elbow Mud - Roof Drains, Insulation	Yellow Fibrous Homogeneous	99% Glass	1% Other	None Detected
EM 1.2 / 22037267-002 Elbow Mud - Roof Drains, Insulation	Yellow Fibrous Homogeneous	99% Glass	1% Other	None Detected
ES 2.1 / 22037267-003 End Sealer - Roof Drains	White Non-Fibrous Homogeneous		100% Other	None Detected
ES 2.2 / 22037267-004 End Sealer - Roof Drains	White Non-Fibrous Homogeneous		100% Other	None Detected
PW 3.1 / 22037267-005 Pipe Wrap - Roof Drains	Green Fibrous Heterogeneous	50% Cellulose	50% Other	None Detected
PW 3.2 / 22037267-006 Pipe Wrap - Roof Drains	Green Fibrous Heterogeneous	50% Cellulose	50% Other	None Detected

Analyst:

Approved Signatory:

Analysis Date: 7/29/2022

Date: 7/29/2022

Disclaimer

This report is the sole property of the client named on the SanAir Technologies Laboratory chain-of-custody (COC). Results in the report are confidential information intended only for the use by the customer listed on the COC. Neither results nor reports will be discussed with or released to any third party without our client's written permission. The final report shall not be reproduced except in full without written approval of the laboratory to assure that parts of the report are not taken out of context. The information provided in this report applies only to the samples submitted and is relevant only for the date, time, and location of sampling. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample(s) in the condition in which they arrived at the laboratory and information provided by the client on the COC, such as: project number, project name, collection dates, po number, special instructions, samples collected by, sample numbers, sample identifications, sample type, selected analysis type, flow rate, total volume or area, and start stop times that may affect the validity of the results in this report. Samples were received in good condition unless otherwise noted on the report. SanAir assumes no responsibility or liability for the manner in which the results are used or interpreted. This report does not constitute and shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any other U.S. governmental agencies and may not be certified by every local, state, and federal regulatory agencies.

Samples are held for a period of 60 days. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations.

For NY state samples, method EPA 600/M4-82-020 is performed.

NYELAP Disclaimer:

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications

NVLAP lab code 200870-0

City of Philadelphia: ALL-460

PA Department of Environmental Protection Number: 68-05397

California License Number: 2915

Colorado License Number: AL-23143

Connecticut License Number: PH-0105

Massachusetts License Number: AA000222

Maine License Number: LB-0075, LA-0084

New York ELAP lab ID: 11983

Rhode Island License Number: PCM00126, PLM00126, TEM00126

Texas Department of State Health Services License Number: 300440

Commonwealth of Virginia 3333000323

Washington State License Number: C989

West Virginia License Number: LT000616

Vermont License: AL166318

Louisiana Department of Environmental Quality: 212253, Cert 05088

Revision Date: 8/14/2020



SanAir ID Number

22037267

FINAL REPORT

7/29/2022 10:16:13 AM

Name: HDH Technical, Inc.
Address: P.O. Box 6158
Christiansburg, VA 24073
Phone: 540-381-7999

Project Number: Roanoke County
P.O. Number:
Project Name: Cave Spring Firehouse
Collected Date: 7/27/2022
Received Date: 7/28/2022 10:45:00 AM

Dear Fred Danner,

We at SanAir would like to thank you for the work you recently submitted. The 6 sample(s) were received on Thursday, July 28, 2022 via UPS. The final report(s) is enclosed for the following sample(s): EM 1.1, EM 1.2, ES 2.1, ES 2.2, PW 3.1, PW 3.2.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

A handwritten signature in black ink that reads "Sandra Sobrino".

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:

- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:

- 2 samples in Discrepancy w/ COC condition. (#1, #2)
- 4 samples in Good condition.

LEAD INSPECTION

On July 27, 2022 a Lead-Based Paint inspection was also conducted on the specified locations of 4212 Old Cave Spring Road. The inspection was conducted to identify potential lead-based paint concerns involved in this roof replacement project. The areas were inspected by Fred Danner.

The inspection determined that NONE of the surfaces tested contain lead greater than or equal to 1.0 mg/cm, and are NOT considered to be lead-based paint surfaces as defined by the Virginia Department of Professional and Occupational Regulation (DPOR) and the Environmental Protection Agency (EPA).

All persons involved in the disturbance of lead based or lead containing painted surfaces should be adequately trained to do so. All contractors should be provided with the results for their use in meeting current OSHA requirements for the protection of their workers and the environment.

This inspection was in compliance with the Virginia Lead-based Paint Activities Regulations, October 1, 1995. The Inspector is properly trained, licensed, and met the competency requirements spelled out in those regulations.

FIELD VERIFICATION

Fred Danner, under the direction of Robin H. Liebal, inspected the structure on July 27, 2022.

A total of Six (6) X-Ray Florescence (XRF) readings, including calibrations, were taken in substantial conformance with industry standards and other applicable federal and state regulations.

Robin H. Liebal's Virginia Lead Risk Assessor license number is 3356000422.

The XRF was calibrated prior to use and at the end of the testing, or every four hours, whichever came first.

For the purposes of this inspection lead-based paint is defined as greater than or equal to 1.0 mg/cm².

Qualifications

The inspection was conducted by Fred Danner, under the direction of Robin H. Liebal, Licensed Lead Risk Assessor #3356000422. The inspection was conducted in accordance with applicable Local, State, and Federal regulations.

Methodologies

This inspection was conducted in accordance with accepted industry standards and applicable regulations established by OSHA and the EPA. This inspection only identifies lead-based paint that is accessible through non-destructive methods. It does not identify lead-based paint materials located within walls, concrete decks, subfloors, or other generally inaccessible areas.

Disclaimer

This inspection report is written for and intended for the use of the Owner and its representatives only. HDHT is not responsible nor will be held liable for any interpretation made, opinions formed, or conclusions drawn by any third party as a result of examining the lab results, inspection results or this report. Any interpretations, opinions, and conclusions will be those made, formed, and drawn solely by that third party.

A lead inspector/risk assessor properly trained by a training institution utilizing an approved HUD curriculum and subsequently licensed to perform inspections by the Commonwealth of Virginia performed the inspection of this structure. HDHT accepts no liability nor makes any claims regarding lead based painted surfaces which were not tested and lead -based painted surfaces which were not accessible during the inspection process if such material was located behind or within walls, concrete decks, sub-floors, chases, or was otherwise generally inaccessible without destructive sampling.

Lead Based Paint Testing Results



1305 Radford Street
 Christiansburg, Virginia 24073
 Telephone: (540) 381-7999

Lead Testing for Construction

Roanoke County, Virginia
 Roanoke County Fire and Rescue Station #3
 4212 Old Cave Spring Rd #3417
 Roanoke, VA 24018

Roof Replacement - Interior

READING	CONCENTRATION	UNITS	RESULTS	DATE	TIME	USER	SITE	ROOM CHOICE	STRUCTURE	MEMBER	SUBSTRATE	CONDITION
1	0.1	mg/cm ²	Negative	7/27/2022	13:16:31	HDHT	4212 Old Cave Spring Rd	Interior	Beam	Main	Metal	Intact
2	0.1	mg/cm ²	Negative	7/27/2022	13:17:07	HDHT	4212 Old Cave Spring Rd	Interior	Beam	Support	Metal	Intact
3	0	mg/cm ²	Negative	7/27/2022	13:17:40	HDHT	4212 Old Cave Spring Rd	Interior	Roof	Deck	Metal	Intact
4	0.3	mg/cm ²	Negative	7/27/2022	13:28:45	HDHT	4212 Old Cave Spring Rd	Interior	Roof	Deck	Metal	Intact
5	0	mg/cm ²	Negative	7/27/2022	13:29:25	HDHT	4212 Old Cave Spring Rd	Interior	Beam	Main	Metal	Intact
6	0.2	mg/cm ²	Negative	7/27/2022	13:29:56	HDHT	4212 Old Cave Spring Rd	Interior	Beam	Support	Metal	Intact

Photos

4212 Old Cave Spring Road



Applicable Licenses

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation

9960 Mayland Drive, Suite 400, Richmond, VA 23233

Telephone: (804) 367-8500

EXPIRES ON

05-31-2023

NUMBER

3303004166

BOARD FOR ASBESTOS, LEAD, AND HOME INSPECTORS
ASBESTOS INSPECTOR LICENSE



FREDERICK REED DANNER
755 B WEST MAIN ST
CHRISTIANSBURG, VA 24073-0000



Dorothea J. Meiss
Dorothea J. Meiss, Director

Status can be verified at <http://www.dpor.virginia.gov>

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
3356000422

EXPIRES ON
11-30-2022

BOARD FOR ASBESTOS, LEAD, AND HOME INSPECTORS
LEAD RISK ASSESSOR LICENSE



ROBIN H LIEBAL
4659 HEAVENER RD.
RADFORD, VA 24141-0000

Sharon Vaughan
Sharon Vaughan, Director

Status can be verified at <http://www.dpor.virginia.gov>

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)