



ROANOKE COUNTY

FINANCE & MANAGEMENT SERVICES DEPARTMENT PURCHASING DIVISION

INVITATION FOR BID

IFB # 2021-062

Bent Mountain Center “Change-of-Use” & Interior Renovations

OPENING DATE: January 19, 2021

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 10:00 AM on December 29, 2020 at the project site, 10148 Tinsley Lane, Bent Mountain VA 24059.

A site visit prior to bid submission is considered necessary and mandatory for this solicitation. See Section 7.A. for details.

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

DATE of IFB: December 16, 2020

INVITATION FOR BID (IFB)

IFB No. 2021-062

Issue Date: December 16, 2020

Title: Bent Mountain Center "Change-of-Use" & Interior Renovations

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., January 19, 2021** 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 before 5:00 p.m., **January 12, 2021**. 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: _____

TABLE OF CONTENTS
INVITATION FOR BID NO. 2021-062
Bent Mountain Center “Change-of-Use” & Interior Renovations

Contents

SECTION 1. PURPOSE.....	6
SECTION 2. BACKGROUND	6
SECTION 3. SERVICES AND/OR ITEMS REQUIRED	6
SECTION 4. REQUIRED QUALIFICATIONS FOR BIDDERS	6
SECTION 5. TERM OF CONTRACT OR TIME OF PERFORMANCE	6
SECTION 6. PAYMENT FOR SERVICES	7
SECTION 7. GENERAL INSTRUCTIONS TO BIDDERS	7
SECTION 8. MISCELLANEOUS	12
SECTION 9. EVALUATION FOR LOWEST RESPONSIVE AND RESPONSIBLE BIDDER	13
SECTION 10. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE.....	14
SECTION 11. NEGOTIATIONS WITH LOWEST RESPONSIVE AND RESPONSIBLE BIDDER	14
SECTION 12. BID AWARD	14
SECTION 13. FAITH BASED ORGANIZATIONS	15
SECTION 14. HOLD HARMLESS AND INDEMNITY	15
SECTION 15. PROTESTS	15
SECTION 16. COOPERATIVE PROCUREMENT	15
SECTION 17. INFORMATION ON CONTRACT/PURCHASE ORDER TO BE AWARDED	15

ATTACHMENT A: Bid Form.....	17
ATTACHMENT B: Virginia State Corporation Commission (SCC) Registration Information	19
ATTACHMENT C: Notice of Proprietary Information Form.....	20
ATTACHMENT D: Sample Contract and Terms or Conditions	21
EXHIBIT 1: SAMPLE CONTRACTOR'S INSURANCE AND BOND REQUIREMENTS.....	55
EXHIBIT 2: SCOPE OF WORK/FEE SCHEDULE	62
Attachment E to IFB 2021-062: Project Manual	63
Attachment F to IFB 2021-062: Project Drawings.....	64

COUNTY OF ROANOKE, VIRGINIA
INVITATION FOR BID NO. 2021-062
Bent Mountain Center “Change-of-Use” & Interior Renovations

SECTION 1. PURPOSE

The purpose of this Invitation for Bid (IFB) is the procurement of a contract to complete interior renovations associated with the code-required “change-of-use,” partial replacement of mechanical/HVAC equipment and HVAC ductwork/register modifications, and electrical system upgrades.

The Work to be covered under the resulting construction contract is as detailed in the Project Manual and drawings included as Attachments E and F to this Invitation for Bid.

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.

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 in **Attachment E: Project Manual**, and **Attachment F: Drawings**.

In the event of a conflict between the terms of this IFB and the terms within the Project Manual, the former shall rule unless otherwise clarified by the County in writing.

SECTION 4. REQUIRED QUALIFICATIONS FOR BIDDERS

Not Used.

SECTION 5. TERM OF CONTRACT OR TIME OF PERFORMANCE

- 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 within seven (7) months after such date, all in accordance with the Contract provisions.

- B. All terms and conditions shall remain in force for the term of the Contract and for any renewal 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. Liquidated damages will not be applied to the resulting contract.

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 January 19, 2021, 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 **two (2) copies, 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 "**Bent Mountain Center Renovation**", **IFB No. 2021-062**, 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 January 12, 2021. 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 10:00 AM on December 29, 2020, at 10148 Tinsley Lane, Bent Mountain VA 24059.

A site visit prior to bid submission is considered necessary and mandatory for this solicitation. Attendance at the non-mandatory pre-bid conference meets this requirement. Alternatively, bidders may conduct an independent site visit on January 6, 7, or 8, 2021. Please contact KHoyt@roanokecountyva.gov prior to your visit, to advise of your intent and schedule. A County employee will be present in order to provide access to the site. No questions may be posed during these site visits; any questions must be submitted to KHoyt@roanokecountyva.gov in writing in order to be considered.

Execution of the Contract by the selected Bidder is a representation that the Bidder has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. (See Section 41 of Attachment D: Sample Contract.)

- 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. **Page 1, Invitation for Bid**
2. **Attachment A: Bid Form** (p. 16; Prices shall include all labor, material, delivery costs, overhead and profit.)
3. **Any Required Attachments**
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 to Kate Hoyt, Buyer, by phone at 540-283-8149, or 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. Total extended Bid price, alternate prices, 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/Purchase Order 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/Purchase Order. 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. 2021-062 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 # 2021-062
ATTACHMENT A: Bid Form

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 renovation of the Bent Mountain Center, in accordance with the enclosed general terms, conditions and specifications contained in IFB No. 2021-062. 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.

Lump Sum Project Cost: _____

Unit Prices:

ACT ceiling replacement (\$/per sq. ft. of ceiling area, including grid and tiles)	
Plaster/GWB ceiling replacement (\$/per sq. ft. of ceiling area)	

Add/Alternates:

(Per project drawings, Balzer Project No. 03160018.00)

Add/Alternate #1	
Add/Alternate #2	
Add/Alternate #3	

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.

_____ (Initial) **I/We can furnish and deliver all items within seven (7) months after the date of the written notice to proceed with the contract from the County.**

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 _____.

Addendum No. _____ Dated _____.

Addendum No. _____ Dated _____.

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/offeree'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.

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 BENT MOUNTAIN CENTER RENOVATIONS

This Contract # 2021-062 is dated , 2021, 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 Bent Mountain Center "Change-of-Use" and Interior Renovations 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. 2021-062, 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.

Not used.

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
1206 Kessler Mill Road
Salem, VA 24153

Email: [name@roanokecountyva.gov](mailto:_____@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. (See also Section 41.C of these General Conditions.)

- 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

If liquidated damages are provided by the Contract, the following provisions shall apply:

- i. Subject to the provisions of the General Conditions granted for extension of time allowed for completion of the Work, if the Work is not substantially completed by the date required in the Contract, the Contractor shall owe to the County, not as a

penalty but as step one liquidated damages, the sum stated in the Contract for step one liquidated damages for each and every calendar day of delay in substantial completion.

- ii. Once the Work is substantially complete, the accrual of step one liquidated damages shall stop and the Contractor shall have thirty (30) calendar days in which to achieve Final Acceptance of the Work.
- iii. If Final Acceptance of the Work is not achieved by the thirtieth (30th) calendar day after substantial completion, and if any extension of time is not granted by the County, the Contractor shall owe to the County, not as a penalty but as step two liquidated damages, the sum stated in the Contract as step two liquidated damages for each and every calendar day of delay in Final Acceptance. All such liquidated damages set forth in this Section are in addition to any other damages the County may be entitled to recover from the Contractor.

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.

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 2021-062
BETWEEN COUNTY OF ROANOKE AND [VENDOR NAME]
FOR BENT MOUNTAIN CENTER RENOVATION**

EXHIBIT 1: SAMPLE CONTRACTOR'S INSURANCE AND BOND REQUIREMENTS

REFERENCE: IFB # 2021-062

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 LiabilityCoverage 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 2021-062
BETWEEN COUNTY OF ROANOKE AND VENDOR NAME
FOR BENT MOUNTAIN CENTER RENOVATIONS**

EXHIBIT 2: SCOPE OF WORK/FEE SCHEDULE

REFERENCE: IFB# 2021-062

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.

Please reference Attachment E: Project Manual, and Attachment F: Project Drawings.

[Attachment E to IFB 2021-062: Project Manual](#)

Bent Mountain Center “Change-of-Use” & Interior Renovations

Provided by Balzer and Associates, Inc.

PROJECT MANUAL FOR:

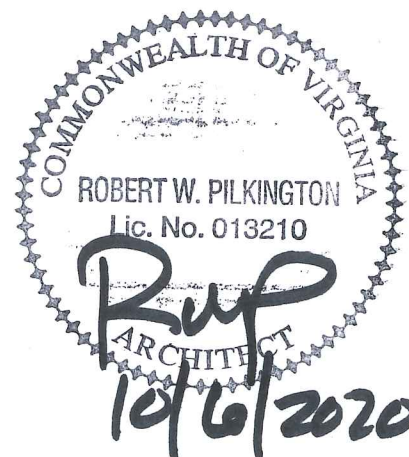
BENT MOUNTAIN CENTER

“CHANGE-OF-USE” & INTERIOR RENOVATIONS

10148 TINSLEY LANE
BENT MOUNTAIN, VIRGINIA
(ROANOKE COUNTY)

BALZER AND ASSOCIATES, INC
PROJECT NUMBER 03160018.00

OCTOBER 6, 2020



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

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SPECIFICATION INDEX

PROJECT DIRECTORY

DRAWING & DOCUMENT INDEX

DIVISION 1 – GENERAL REQUIREMENTS

DIVISION 2 – EXISTING CONDITIONS

024119 Selective Structure Demolition

DIVISION 3 – CONCRETE

033000 Cast-In-Place

DIVISION 6 – WOOD, PLASTICS AND COMPOSITES

061053 Miscellaneous Rough Carpentry

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

079200 Joint Sealants

DIVISION 8 – OPENINGS

081113 Hollow Metal Door Frames

081400 Wood Doors

087100 Door Hardware

DIVISION 9 - FINISHES

092100 Gypsum Board Assemblies

092216 Non-Structural Metal Framing

095113 Acoustical Ceilings

099100 Painting

DIVISION 10 - SPECIALTIES

101400 Signage

DIVISION 32 – SITE WORK / EXTERIOR IMPROVEMENTS

320000 General Site Specifications

“LIMITED ASBESTOS SURVEY AND LEAD-BASED PAINT INSPECTION REPORT”

Please Note, Specifications for the following Divisions are include directly on the Drawings:

DIVISION 22 - PLUMBING

DIVISION 23 – HVAC / MECHANICAL

DIVISION 26 - ELECTRICAL

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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:

Bent Mountain Center
10148 Tinsley Lane
Bent Mountain, Virginia (Zip)

Contact:

Bruce Coffey
President, Board of Directors
Email: chefbruce2002@yahoo.com

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

MECHANICAL ENGINEER:

Stottsberg Engineering
P.O. Box 876
Fincastle, Virginia 24090
Phone: (540) 216-0331

Contact:

John Berg, P.E.
Email: john@stottsbergeng.com
Cell Phone: (540) 467-1016

ELECTRICAL ENGINEER:

Gibson Engineering
2100 Lubna Drive
Christiansburg, Virginia 24073
Phone: (540) 328-9041

Contact:

Daniel Gibson, P.E.
Email: gibsonengineeringllc@gmail.com
Cell Phone: (540) 998-6069

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

DRAWING & DOCUMENT INDEX

1. **DRAWINGS:**
 - T1.01 Cover & Project Information
 - T1.02 Schematic Site Plan
 - D1.01 Existing / Demolition Floor Plan
 - D1.02 Existing / Demolition Ceiling Plan
 - A1.01 Renovation Floor Plan
 - A1.02 Renovation Reflected Ceiling Plan
 - A1.03 Schedules & Details
 - M1.01 Mechanical General Notes & Details
 - M1.02 Mechanical Schedules
 - M1.03 Mechanical Specifications
 - M1.04 Mechanical Specifications
 - M2.01 Mechanical Demolition Plan – First Floor
 - M2.02 Mechanical Demolition Plan – Roof
 - M3.01 Mechanical New Work Plan – First Floor
 - M3.02 Mechanical New Work Plan – Roof
 - M4.01 Mechanical Controls
 - P1.01 Plumbing General Notes and Legend
 - P1.02 Plumbing Partial Plans
 - E1.1 Electrical Legend, General Notes & Schedules
 - E2.1 Electrical Demolition
 - E3.1 Electrical New Work
 - E4.1 Electrical Panel Schedules
 - E5.1 Electrical Specifications
 - E5.2 Electrical Specifications

2. **SPECIFICATIONS:** Project Manual for:
“Bent Mountain Center- “Change of Use” & Interior Renovations”
Divisions 1-32
Balzer and Associates, Inc.
October 6, 2020

3. **ASBESTOS & LEAD PAINT SURVEY:** “Limited Asbestos Survey and Lead-Based Paint Inspection Report”
Prepared by Froehling & Robertson
F&R Project # 62X-0328
Issue Date: 08/26/2019
(note: Included at end of Project Manual)

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 011000 - SUMMARY

A. Work Covered by the Contract Documents:

1. Project Identification: Project consists of miscellaneous minor interior renovations associated with the code-required “change-of-use”, partial replacement of mechanical/HVAC equipment and HVAC ductwork/register modifications, and electrical system upgrades.
 - a. Project Location: 10148 Tinsley Lane, Bent Mountain, 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 certain minor interior renovations, partial replacement of specific HVAC equipment, and certain specific upgrades to existing electrical systems. The Work includes removal and replacement of specific interior doors, installation of new interior doors, construction of specific new walls, ceiling repairs and replacement in specific locations, demolition of selective building elements as require for new work, and miscellaneous minor interior finish repairs (all as noted in Architecture drawings). The Work also includes replacement of specific HVAC equipment (as shown on Mechanical/HVAC drawings). The Work also includes the replacement of existing lighting in specific locations, installation of new emergency lighting in specific locations, miscellaneous minor repairs and upgrades to existing electrical panels, and other miscellaneous electrical work (as shown on Electrical drawings). The Work also includes miscellaneous minor site modifications to sidewalks and parking as required for handicap accessibility (as indicated on Site Plan drawing). 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 installation of mechanical, electrical and plumbing components as indicated in Drawings and as required to 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

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

complete building to the Owner at the Project conclusion. Omissions from the Contract shall include the following: costs for coordination and payment for required independent special inspections; costs for any testing for asbestos or lead-based paint; 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 Request for Proposal (RFP) for this project. A draft copy of the standard contract and conditions will be provided as an Addendum prior to the Bid Due Date.
- C. Use of Premises & Work Sequence: Contractor shall have full use of limits of building exterior site construction for construction operations and partial use of building interior, allowing Owner to continue partial use of the existing building interior (specifically continuous use of the existing Public Library, existing Gymnasium 130, existing Lobby 100, existing restrooms 131 and 132, existing Classroom/Meeting Room 111 and existing Classroom/Meeting Room 112). Contractor shall be required to contain ongoing work in such ways as to keep the Owner’s continuing use of existing facilities, including providing required egress pathways. The onsite parking lot shall not be used by the Contractor or their sub-contractors for parking, building access or staging of materials.
- 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 the construction 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:

- ACT ceiling replacement (\$/per square foot of ceiling area, including grid and tiles)
- Plaster/GWB ceiling replacement (\$/per square foot of ceiling area)

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 12300 - ALTERNATES

Contractor shall supply to the Owner, with the contract, a written list of materials that were included in the Bid as an alternate to any materials specified by product name and/or manufacturer. Such alternates shall be of similar quality or grade as that specified or indicated in the Drawings and Specifications or shall be submitted with a written explanation for the substitution. Any substitution submitted with Bid shall include cut-sheets for the proposed alternate, for review by the Owner and/or Architect.

Additionally, please see Drawings for list of Bid Alternates specifically requested, to be included as separate line items with each bid.

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.

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, **15%.**
2. For the Contractor, for Work performed by the Contractor's Subcontractors, **10%.**

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

3. For each Subcontractor involved, for Work performed by that Subcontractor's own forces, **15%.**
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 subcontractors shall only be for work or items which were not expressed or intended by the Construction Drawings, items specifically requested by the Owner, or items required 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 throughout construction processes. Contractor shall include in writing with Bid any scheduling concerns regarding how to schedule the Work to maintain use of building interior spaces as noted above.

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.

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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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. Contractor shall allow at least 7 days for review of substitutions for appropriateness for the particular application in addition to normal review time for submittals.

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 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 2015 Virginia Construction Code (VCC), the 2015 Virginia Existing Building Code and the various other Virginia codes by reference.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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 ensure 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.
- 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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- 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 included at the end of the Project Manual as follows:

1. LEAD-BASED PAINT SURVEY:

“Limited Asbestos Survey and Lead-Based Paint Inspection Report”

Prepared by Froehling & Robertson

F&R Project # 62X-0328

Issue Date: 08/26/2019

This report is a combination ACM and lead-based paint survey for the building. The ACM survey in this report covers ACM’s on the building interior and is anticipated to potentially be part of the Work under this contract. This report does include lead-based paint, including lead-based paint that may be encountered/disturbed during construction processes under this contract.

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 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

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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. 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.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- 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:
 - 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.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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 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.

3.6 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

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Cast-in-place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes for the following:
 - 1. Exterior sidewalks & curbs.
 - 2. Equipment bases (if required).

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
 - 1. Cementitious materials and aggregates.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Admixtures.
 - 4. Curing materials.
 - 5. Joint-fillers.
- D. Other submittals required by ACI 301.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- D. Comply with ACI 301, "Specification for Structural Concrete"; ACI 117, "Specifications for Tolerances for Concrete Construction and Materials"; and CRSI's "Manual of Standard Practice."

PART 2 - PRODUCTS

2.1 MATERIALS

A. Formwork:

1. Forms shall be fabricated from any approved material that will provide continuous, true and smooth concrete surfaces, without abrupt irregularities.
2. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
3. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of the exposed concrete surface. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

B. Plain Steel Wire: ASTM A 82, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, as drawn, flat sheet.

D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

E. Portland Cement: ASTM C 150, Type I.

F. Aggregates: ASTM C 33, uniformly graded.

G. Air-Entraining Admixture: ASTM C 260.

H. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

2.2 MIXES

A. General: Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
2. Proportion lightweight structural concrete according to ACI 211.2 and ACI 301.

B. Exterior Concrete: Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 Days): 4,000 psi (24.1 MPa).

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

2. Maximum Slump: 5 inches (125 mm).
- C. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.
- D. Maximum Water-Cementitious Materials Ratio:
 1. 0.50 for concrete exposed to deicers or subject to freezing and thawing while moist.
 2. 0.40 for corrosion protection of steel reinforcement in concrete exposed to chlorides from deicing chemicals, salt, saltwater, brackish water, seawater, or spray from these sources.
- E. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated: 5.5 percent for 1-1/2-inch- (38-mm-) nominal maximum aggregate size. Do not air entrain concrete to trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 3 percent for floors and slabs.
- F. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- G. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONCRETING

- A. Formwork: Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch (3.2 mm) for concrete exposed to view and Class C, 1/4 inch (6 mm) for other concrete surfaces.
 1. Chamfer exterior corners and edges of permanently exposed concrete 3/4 inch, unless indicated otherwise.
 2. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
 3. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- B. Shoring: Comply with ACI 318, ACI 301, and recommendations in ACI 347R for design, installation, and removal of shoring and reshoring.
- C. Steel Reinforcement: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing and supporting reinforcement. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

minimum concrete cover. Do not tack weld crossing reinforcing bars. All steel reinforcing shall be lapped 36x bar diameter. Concrete protection for reinforcing steel and other general requirements for placing of reinforcing steel shall be in accordance with the latest edition of the “American Concrete Institute Building Code” (ACI 318-08).

- D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.
- E. Saw Joints: Form weakened-plane saw joints, sectioning concrete into areas as indicated, and at all inside corners of pours. Joints shall be cut to a depth equal to at least one-fourth of concrete thickness. Form saw joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks. Sufficient time should be allowed before cutting saw joints in fiber reinforced concrete slabs to ensure that the saw blade cuts the fiber reinforcement without pulling the fibers out of the concrete.
- F. Concrete Placement:
 - 1. Do not add water to concrete during delivery, at Project site, or during placement, unless approved by Architect.
 - 2. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.
 - 3. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 4. Cold-Weather Placement: Comply with ACI 306.1.
 - a. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
 - b. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - c. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs
 - 5. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:
 - a. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - b. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - c. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.
 - 6. No concrete shall be placed until all embedded items have been installed, tested, and inspected.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- G. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.
- H. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.
- I. Slab Finishes: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide nonslip-broom finish to exterior concrete sidewalks, platforms, steps, and ramps.
- J. Cure formed surfaces by moist curing for at least seven days.
- K. Field Quality Control:
 - 1. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.
 - 2. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed for compressive-strength per ASTM C 39; test two laboratory-cured specimens at 7 days, two at 28 days and one at 56 days
 - 3. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
 - 4. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing.
- L. Protect concrete from damage. Repair surface defects in formed concrete and slabs.

END OF SECTION 033000

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 061053 – MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Rough framing.
 - 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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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.
- 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 Southern Yellow Pine or Spruce-Pine-Fir. Provide for studs, nailers, blocking, and similar members.
- C. Roof Framing: Southern Yellow Pine No. 2 with 15 percent maximum moisture content.
- D. Roof Decking: Exterior grade sheathing, Exposure 1, 24/16 span rating, thickness to match existing roof decking.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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:

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Acoustical 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.
- C. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
- D. 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 Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates.
- D. Manufacturer's Warranty: 10 year.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

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. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that contain 0% (zero percent) VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24).
- C. 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.
- D. Stain-Test-Response Characteristics: Where sealants are specified to adhere to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- E. Colors of Exposed Joint Sealants: As selected from manufacturer's full range.
- F. Provide joint sealants of types and characteristics noted in UL Firestop Assemblies in Fire-Rated Assemblies noted in Drawings. See Division 07 Specification Section “Penetration Firestopping” for further details.
- G. Provide sealants which are listed by the manufacturer as paintable in all locations requiring field painting.

2.2 JOINT SEALANTS

- A. Sealant for Use in Building Expansion Joints: Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 100/50; for Use NT.
- B. 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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- 2. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.
- C. Sealant for Use Around Plumbing Fixtures: Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.
- D. Sealant for Interior Use at Perimeters of Door and Window Frames: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
- E. Acoustical Sealant: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.

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. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance; Type B, or Types C or O if approved in writing by joint manufacturer for joint application indicated.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.
- D. 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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- 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. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.
- J. 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

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 081113 - HOLLOW METAL DOOR FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes standard hollow metal door frames.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door design.
 - 2. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 3. Locations of reinforcement and preparations for hardware.
 - 4. Details of each different wall opening condition.
 - 5. Details of anchorages, joints, field splices, and connections.
 - 6. Details of accessories.
 - 7. Details of moldings, removable stops, and glazing.
 - 8. Details of conduit and preparations for power, signal, and control systems.
- C. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.
- D. Samples for Verification: For each type of exposed finish required.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.3 QUALITY ASSURANCE

- A. Steel Door and Frame Standard: ANSI A250.8 for level and model, and ANSI 250.4 for physical endurance level.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing according to NFPA 252.
 - 1. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B, stretcher-leveled standard of flatness; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B, stretcher-leveled standard of flatness; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) zinc-iron-alloy (galvannealed) coating, stretcher-leveled standard of flatness.
- D. Frame Anchors: ASTM A 591/A 591M, 40Z (12G) coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- F. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. (96- to 192-kg/cu. m) density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- H. Glazing: Comply with requirements in Division 08 Section "Glazing."
- I. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
- J. Prepare doors and frames to receive mortised and concealed hardware according to ANSI A250.6 and ANSI A115 Series standards.
- K. Fire-Rated Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing according to NFPA 252.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

2.2 HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Interior Frames:
 - 1. Frame Thickness: 18 gage (0.042 inch, 1.0 mm).
 - 2. Material: Metallic-coated steel sheet.
 - 3. Construction: Knock-down type.
 - 4. Door Silencers: Push-in type; three (3) per single door frames, two (2) on double door frames at head.
 - 5. Supports and Anchors: 18 gage (0.042 inch, 1.0 mm) metallic-coated steel sheet, concealed type.
- C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.3 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch- (6.4-mm-thick by 25.4-mm-) wide steel.
- C. Grout Guards: Formed from same material as frames, not less than 0.016 inch (0.4 mm) thick.

2.4 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- C. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - 2. Provide concealed fasteners for all frames unless otherwise indicated.
 - 3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 4. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 - 5. Jamb Anchors: Provide number and spacing of anchors as required for type of wall and frame construction.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- 6. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction
- D. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- E. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

2.5 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified. Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Placing Frames: Comply with provisions in ANSI/SDI A250.11, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. Use concealed type fasteners and frame clips only.
- C. Install doors to provide clearances between doors and frames as indicated in ANSI/SDI A250.11.
- D. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer.
- E. Paint door frames with two (2) coats finish as indicated elsewhere in Specifications under "Painting".

END OF SECTION 081113

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 081400 - WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Solid-core wood doors with wood-veneer faces.
2. Finishing of wood doors.
3. Factory fitting doors to frames and factory machining for hardware.

1.2 SUBMITTALS

- A. Product Data: For each type of door indicated. Include details of core and edge construction, louvers, and trim for openings. Include factory-finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; finishing requirements; cutouts for lites, louvers, etc.; and other pertinent data.
- C. Samples for Verification:
1. Factory finishes applied to actual door face materials.
 2. Corner sections of doors with door faces and edges representing actual materials to be used. Provide samples for each species of veneer and solid lumber required.
 3. Frames for light openings, for each material, type, and finish required.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors from single manufacturer.
- B. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors" for solid-core doors and WDMA I.S.1 for other wood doors.
- C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing according to NFPA 252.
1. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

1.4 WARRANTY

- A. Special Warranty: Manufacturer’s standard form, signed by manufacturer, Installer, and Contractor, in which manufacturer agrees to repair or replace doors that are defective in materials or workmanship, have warped (bow, cup, or twist) more than 1/4 inch in a 36-by-84 inch section, or show telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span. Warranty shall include installation and finishing that may be required due to repair or replacement of defective doors. Warranty for interior wood doors shall be life of installation.

PART 2 - PRODUCTS

2.1 DOOR CONSTRUCTION, GENERAL

- A. Quality Standards: WDMA I.S.1-A for flush wood doors and WDMA I.S.1 for all other doors.
1. Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing according to NFPA 252. At vertical exit enclosures and exit passageways, provide doors that have a temperature rise rating of 450 deg F (250 deg C).
- B. WDMA I.S.1 Performance Grade: Standard Duty unless otherwise indicated.

2.2 VENEER-FACED FLUSH SOLID-CORE WOOD DOORS

- A. General:
1. Core: Particleboard, ANSI A208.1, Grade LD-1. Provide solid lumber blocking in door cores at exit devices, automatic closers and other surface-mounted hardware.
2. Construction: 5-ply for fire-rated doors and exterior doors; 7-ply for non-rated interior doors; solid blocking as required to eliminate through-bolting hardware and mounting of panic devices; thickness and sizes as indicated.
3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance, and with outer stile matching face veneer.
4. Thickness: 1-3/4 inch or as indicated in Drawings.
5. Frames: Hollow metal frame, see Specification Section “Metal Doors and Frames”.
- B. Doors for Transparent Finish (where specifically noted in Drawings):
1. Grade: Premium, with Grade A faces.
2. Species and Cut: Rotary cut, door faces of compatible species and grain matching existing doors elsewhere in the building
3. Match between Veneer Leaves: Book match.
4. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
5. Room Match: Provide door faces of compatible color and grain matching existing doors elsewhere in the building.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

6. Exposed Edges: Same species as faces.

C. Louvers and Light Frames:

1. Metal Frames for Light Openings in Doors: Manufacturer’s standard frame formed of 0.048 inch (1.2 mm) thick, cold-rolled steel sheet; powder-coated finish; and approved for use in doors of fire-protection rating as indicated in Drawings.

2.3 DOOR FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated, with the uniform clearances and bevels. Comply with NFPA 80 for any fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.
- C. Openings: Factory cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required. Trim openings with moldings of material and profile indicated.
- D. Provide solid lumber stiffeners at all hardware locations.

2.4 FINISHES

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing. Finish doors at factory that are indicated to receive transparent finish. Field finish doors indicated to receive opaque finish.
- B. Doors for Transparent Finish: Factory-finished, to be primed with stain and other pretreatments and one coat of finish as follows:
 1. Grade: Premium.
 2. Finish: Polyurethane.
 3. Staining: Color to match existing doors elsewhere in existing building.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Project Conditions: Do not deliver or install doors until building is enclosed, wet work is complete and dry, and ambient temperature and humidity conditions are maintained at normal occupation levels during the remainder of the construction work.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- B. Installation Instructions: Install doors to comply with manufacturer’s written instructions, referenced quality standard, and as indicated. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80. Install hardware per hardware manufacturer’s written instructions and as specified in Division 8 Section “Door Hardware”.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- D. Job-fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 - 1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated. Comply with NFPA 80 for fire-rated doors.
 - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.
 - 3. Bevel fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock edge; trim stiles and rails only to extent permitted by labeling agency.
- E. Adjusting: Rehang or replace doors that do not swing or operate properly. Repair and refinish, or replace, doors that are damaged or that do not comply with requirements.

END OF SECTION 081400

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

- A. Commercial door hardware for new swinging doors.
- B. Cylinders for doors specified elsewhere.
- C. Commercial door hardware replacement on existing doors (as indicated in Drawings).

1.2 QUALITY ASSURANCE

- A. Regulatory Requirements: New door hardware shall comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1, as follows:
 - 1. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
 - 2. Door Closers: Comply with the following maximum opening-force requirements indicated: Interior Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door; Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch; Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - 3. Thresholds: Not more than 1/2 inch (13 mm) high total, 1/4 inch maximum straight vertical. Bevel raised thresholds with a slope of not more than 1:2.
- B. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
- C. Standard: BHMA A156.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: Finish samples for all hardware types.
- C. Shop Drawings: Showing mounting/installation for different door types.

1.4 WARRANTY

- A. Materials and Workmanship: Three (3) years.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- B. Warranty for Manual Closers: Ten (10) years.

PART 2- PRODUCTS

2.1 GENERAL

- A. Provide door hardware for each new door and existing doors specifically indicated in Drawings to comply with this Section.
- B. Where no schedule for hardware in Drawings provide hardware on doors specifically noted to meet this Section which would typically be required based on door location and type.
- C. Manufacturers: Subject to compliance with project requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following (except as specifically noted below for cylinders and keying):
- a. Corbin Russwin Architectural Hardware.
 - b. Schlage Commercial Lock Division.
 - c. SARGENT Manufacturing Company.
 - d. Medeco Security Locks.
 - e. PDQ Manufacturing.
 - f. Cal-Royal Products, Inc.
 - g. Stanley Commercial Hardware.
 - h. Baldwin Hardware Corporation.

2.2 COMMERCIAL DOOR HARDWARE

- A. Hinges and Pivots:
- 1. General:
 - a. Standard: BHMA A156.1.
 - b. Quantity: Provide two (2) hinges for door heights up to sixty (60) inches (1524 mm); provide three (3) hinges for door heights sixty-one (61) to ninety (90) inches (1549 to 2286 mm).
 - c. Hinge Sizes:
 - 1. 36 by 84 by 1-3/4 inch doors: 4-1.2 inch hinges; 0.134 inches metal thickness for standard weight hinges; 0.180 inches metal thickness for heavy weight hinges.
 - 2. Exterior: Heavy-weight hinges; stainless steel, with stainless steel pin. Provide non-removeable pin for outswinging exterior doors.
 - 3. Interior: Standard weight hinges; steel, with steel pin.
 - 4. Fire-Rated Assemblies: Heavy weight hinges; steel, with steel pin.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

5. Doors with Closers: Provide anti-friction bearing, full-mortise (butt) hinges as follows: Heavy weight; BHMA Grade 1, with 4 ball bearings; button tips; nonrising removable pins. Half-surface hinges have one leaf mortised to the jamb and one leaf surface-applied to the door.
6. Fasteners:
 - a. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
 - b. Wood Screws: For wood doors and frames.
 - c. Screws: Phillips flat-head screws; machine screws (drilled and tapped holes) for metal doors, wood screws for wood doors and frames. Finish screw heads to match surface of hinges.

B. Locks and Latches:

1. Standards: Comply with BHMA A156.2 for bored locks and latches; comply with BHMA A156.5 for exit locks.
2. Bored Locks: BHMA Grade 1, Series 4000.
3. Lock Trim:
 - a. Lever: Wrought, forged or cast
 - b. Rose: Wrought.
 - c. Dummy Trim: Match lever lock trim.
4. Lockset Designs: Provide designs which comply with ANSI function numbers as indicated below or types as indicated in Drawings.
 - a. Passage: ANSI F75, CL3510.
 - b. Privacy: ANSI F76, CL3520.
 - c. Office: ANSI F82, CL3561.
 - d. Classroom: ANSI F84, CL3555.
 - e. Closets: ANSI F86, CL3557.
5. Lock Throw: Minimum 1/2 inch (12.7 mm) latchbolt throw.
6. Backset: 2-3/4 inches (70 mm), unless indicated otherwise.
7. Combined core and must accept a Best 7-pin interchangeable core.

C. Exit Devices:

1. Standard: BHMA A156.3
2. Grade 1.
3. ANSI Types:
 - a. Entrance: ANSI 08, N955.
 - b. Passage: ANSI 14, N910.
 - c. Double doors shall have lever handle device on only one (1) leaf; other leaf shall be blank.

D. Cylinders and Keying:

1. Standards: BHMA A156.5.
2. Cylinder Grade: BHMA Grade 1.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

3. Cylinders: Manufacturer's standard tumbler type, five (5) pin, constructed of stainless steel or nickel silver.
 4. Keying System: Interior keying shall be either Ilco or SL&Key, to match existing interior doors onsite.
- E. Accessories for Pairs of Doors: Astragals or fire-exit removable mullions as required to maintain fire rating, for fire-rated doors as indicated in Drawings.
- F. Closers:
1. Standards: BHMA A156.4.
 2. Surface Closers: BHMA Grade 1.
 3. Provide door closers listed in BHMA's "Directory of Certified Door Closers".
 4. Provide concealed fasteners for all closers.
- G. Stops and Holders:
1. Standards: BHMA A156.16.
 2. Stops and Bumpers: Grade 1.
 3. Mechanical Door Holders: Grade 1.
 4. Combination Floor and Wall Stops and Holders: Grade 1.
 5. Floor stops: Dome-type; cast brass, bronze or aluminum, with rubber bumper; minimum 1 inch (25 mm) high for doors without threshold, 1-3/8 inches (35 mm) high for doors with threshold.
 6. Silencers for metal door frames.
- H. Door Gasketing:
1. Standards: BHMA A156.22.
 2. Provide manufacturer's standard perimeter gasketing on all exterior doors, to form weathertight seal at head, jamb and sill. Provide manufacturer's standard smoke or fire labeled gaskets on interior fire-rated doors.
- I. Thresholds: Manufacturer's standard offset saddle threshold, extruded aluminum or bronze, with thermal break and fluted top, listed as ADA Accessible.
- J. Finishes:
1. Standard: BHMA A156.18.
 2. BHMA 652: Satin chromium plated over nickel, over steel base metal.

PART 3- EXECUTION

3.1 INSTALLATION

- K. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
1. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- L. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- M. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- N. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
 - 2. Door Closers: Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.
- O. Six-Month Adjustment: Approximately six months after date of Substantial Completion, Installer shall Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware, and replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

END OF SECTION 087100

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 092100 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Interior and exterior gypsum board.

1.2 SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples:
 - 1. Trim accessories.
 - 2. Textured finishes.

1.3 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- C. Low Emitting Materials: For ceiling and wall assemblies, provide materials and construction identical to those tested in assembly and complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 2 - PRODUCTS

2.1 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
- B. Fire-rated Assemblies: Provide gypsum board products that are the same or equal to products specified in UL-listed fire-rated assemblies as indicated in Drawings. Some UL assemblies

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

state specific manufacturers and products to use. It is the contractor’s responsibility to provide products as specified in the indicated UL-listed assemblies, or provide documentation for alternative UL-listed assemblies for review by the Architect prior to construction.

2.2 PANEL PRODUCTS

- A. General: Provide panel sizes and details shown herein unless specifically indicated differently in Drawings.
- B. Gypsum Wallboard: ASTM C 1396/C 1396M.
 - 1. Thickness: 1/2 inch (12.7 mm) or 5/8 inch (15.9 mm), thickness as indicated in Drawings or as required to match existing wall thickness.
 - 2. Long Edges: Tapered.
- C. Gypsum Board, Type X: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch (15.9 mm).
 - 2. Long Edges: Tapered.
- D. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 1/2 inch (12.7 mm) or 5/8 inch (15.9 mm), thickness as indicated in Drawings or as required to match existing ceiling thickness.
 - 2. Long Edges: Tapered.
- E. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
 - 1. Core: As indicated.
 - 2. Long Edges: Tapered.
 - 3. Mold Resistance: ASTM D 3273, score of 10.
- F. Gypsum Board, Type C: ASTM C 1396/C 1396M. Manufactured to have increased fire-resistive capability.
 - 1. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
 - 2. Long Edges: Tapered.

2.3 ACCESSORIES

- A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.
 - 1. Provide cornerbead at outside corners unless otherwise indicated.
 - 2. Provide LC-bead (J-bead) at exposed panel edges.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

3. Provide control joints where indicated.
- B. Aluminum Accessories: Extruded-aluminum accessories indicated with manufacturer's standard corrosion-resistant primer.
- C. Joint-Treatment Materials: ASTM C 475/C 475M.
 1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
 2. Joint Compounds: Setting-type compounds, or as indicated in UL-listed fire-rated assemblies indicated.
 3. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.
 4. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.
- D. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.
- E. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- F. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
- G. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced), or as indicated in UL-listed fire-rated assemblies indicate.
- H. Thin-Coat Plaster: Manufacturer's standard, mill-mixed, gaged, interior finish, gypsum ready-mixed finish plaster.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install gypsum board to comply with ASTM C 840.
 1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
 2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
 3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws.
- B. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.
- C. Finishing Gypsum Board: ASTM C 840.
 1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
 3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
- D. Apply and cure plaster materials and finishes to comply with ASTM C 842. Apply two coats. Apply troweled finish coat, provide Level 4 finish.

END OF SECTION 092100

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
 - 2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.

1.2 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Evaluation Reports: For dimpled steel studs and runners, and firestop tracks, from ICC-ES. Include in other submittals for metal framing.

PART 2 - PRODUCTS

2.1 METAL FRAMING AND SUPPORTS

- A. Steel Framing Members, General: ASTM C 754.
 - 1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-metal thickness.
 - 2. Protective Coating: Manufacturer's standard corrosion-resistant zinc coating.
- B. Suspended Ceiling and Soffit Framing:
 - 1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch (1.59-mm) diameter, or double strand of 0.0475-inch- (1.21-mm-) diameter wire.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

2. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, and 0.162-inch (4.12-mm) diameter.
3. Carrying Channels: Cold-rolled steel, 0.0538 inch (1.37 mm) thick, 2-1/2 inches (64 mm) deep.
4. Furring Channels: 7/8 inch (22.2 mm) deep, 0.0179 inch (0.454 mm) thick or Resilient furring channels, 1/2 inch (12.7 mm) deep, with single- or double-leg configuration, as indicated in Drawings.
5. Grid Suspension System for Interior Ceilings: Interlocking, direct-hung system., pre-engineered by manufacturer.

C. Partition and Soffit Framing:

1. Studs and Runners: In depth(s) and thickness(s) indicated in Drawings.
2. Flat Strap and Backing: 0.0179 inch (0.454 mm) thick.
3. Rigid Hat-Shaped Furring Channels: 0.0538 inch (1.37 mm) thick, 3/4 inch (19.1 mm) deep.
4. Firestop track. Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs. Designed to withstand deflection up to 1-1/2".

2.2 ACCESSORIES

- A. General: Provide standard accessories to comply with referenced installation standards.
- B. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- C. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag, wool, or rock wool.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation and with United States Gypsum's "Gypsum Construction Handbook."

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- B. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- C. Where studs or furring strips are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
- E. Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. Install two studs at each jamb unless otherwise indicated.
- F. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure. Where indicated, install firestop track to maintain continuity of fire-resistance-rated assembly indicated.
- G. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- H. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- I. Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.
- J. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

END OF SECTION 092216

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 095113 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes acoustical panels and exposed suspension systems for ceilings.
- B. Section includes requirements for re-installation of existing acoustical ceiling systems removed and re-installed.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each component and for each exposed finish required.

1.3 QUALITY ASSURANCE

- A. Acoustical Panel Quality Standard: ASTM E 1264.
- B. Metal Suspension System Quality Standard: ASTM C 635.
- C. Fire-Test Response Characteristics: Provide acoustical panel ceilings that have a flame spread classification of 25 or less, and smoke development index of 450 or less.
- D. Acoustical Testing Agency Qualifications: An independent testing laboratory or an NVLAP-accredited laboratory.

1.4 STORAGE, HANDLING AND PROJECT CONDITIONS

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against moisture, humidity, temperature extremes, direct sunlight, surface contamination, or other damage.
- B. Before installing acoustical panels, permit them to reach room temperature and stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.
- D. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.5 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packages with protective covering for storage and identified with labels describing contents. Provide full-size panels equal to 2.0 percent of quantity installed.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

2.2 ACOUSTICAL PANELS

- A. Basis of Design: Mineral-Base Acoustical Panels, to match existing panels elsewhere in existing building. The Basis of Design is the general standard for replacement tiles, to be field verified to match/coordinate with existing tiles that remain.
 - 1. Basis of design: Armstrong “Random Fissured”, Item No. 2908.
 - 2. Type: III with painted finish
 - 3. NRC: Not less than 0.70
 - 4. CAC: N/A
 - 5. Size: 24 by 24 inches
 - 6. Thickness: 5/8 inches
 - 7. Edge detail: Square lay-in.
 - 8. Color: White.

2.3 CEILING SUSPENSION SYSTEM

- A. Metal Suspension System Components, General: Provide all components necessary to install complete system, including angle hangers, seismic struts & clips (as required), hold-down and impact clips (as required by fire-rate assemblies indicated in Drawings).
- B. Metal Suspension System for Mineral- Base Acoustical Panels
 - 1. Basis of Design: Armstrong Prelude XL 15/16” Exposed Tee System
 - 2. Wide-faced, capped, double-web steel suspension system: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

galvanized according to ASTM A 653/A 653M, not less than G30 (Z90) coating designation, with prefinished 15/16 inch (24 mm) wide metal caps on flanges.

- a. Structural Classification: Intermediate-duty system.
 - b. End Condition or Cross Runners: XL (Staked on stab end).
 - c. Face Design: Flat, flush.
 - d. Cap Material: Steel.
 - e. Cap Finish: White enamel.
 - f. Main Runners: 1-1/2" by 15/16".
- C. Attachment Devices: Sized for 5 times the design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated.
- D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Standard: Install per ASTM C 636 and manufacturer's instructions. Install fire-rated ceiling systems according to tested fire-rated design. Re-installation of existing acoustical ceiling systems temporarily removed shall follow the same guidelines below.
- B. Suspend ceiling hangers from structure above, and as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum.
 2. Secure wire hangers to ceiling suspension members and to structural supports above with a minimum of three turns.
 3. Do not attach hangers to wood roof deck. Attach hangers to structural members.
 4. Space hangers not more than 48 inches (1200 mm) o.c.
 5. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
- C. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- D. Install grid so that edge panels are no less than 1/2 panel width, unless noted otherwise.
- E. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit. Install panels with edges fully hidden from view by flanges of suspension system runners and moldings.

END OF SECTION 095113

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 099100 – PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and the application of paint and coating systems on the following exterior and interior substrates:
 - 1. Concrete.
 - 2. Concrete masonry units (CMU).
 - 3. Steel.
 - 4. Galvanized metal.
 - 5. Aluminum (not anodized or otherwise coated).
 - 6. Wood.
 - 7. Gypsum board (Exterior and Interior).
 - 8. Plastic trim fabrications.

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.
- C. Product List: For each product indicated, include the following
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted, if applicable.

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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- 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.

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 and stains 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. VOC’s: Provide interior paint materials containing 0% (zero percent) VOC’s (volatile organic compounds), or as a minimum contain the maximum amount of VOC’s allowed to meet LEED Credit IEQ 4.2.
- D. 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.
- E. 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.
- F. Colors: As selected from manufacturer’s full range of colors.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- G. Provide interior paint materials which do not contain restricted components as noted in LEED IEQ Credits 4.1 through 4.4.

2.2 PAINT PRODUCTS

- A. Basis of Design (Manufacturer): Paint products manufactured by PPG Architectural Finishes, Inc. (Pittsburgh Paints), products as specifically noted in exterior and interior 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. Concrete & Stucco: (1) coat PPG 6-603 Speedhide Exterior Quick Dry Latex Sealer (dry film thickness = 1.2 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.).
- B. Concrete Unit 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.).
- C. Exterior Gypsum Soffit Board: (1) coat PPG 72-1 Sun-Proof Exterior Latex Sealer (dry film thickness = 1.2 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.).
- D. Wood: (1) coat PPG 1-70 Sun-Proof Exterior Latex Sealer (dry film thickness = 1.8 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.).
- E. 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).
- F. 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).
- G. Aluminum: (1) coat PPG 17-921 PPG Aluminum Primer; (2) finish coats PPG 6-230 Speedhide Aluminum Paint (dry film thickness – 1.5 mils).

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

- H. Plastic or Fiberglass Trim Fabrications: (1) coat PPG 1-70 Sun-Proof Exterior Latex Sealer (dry film thickness = 1.8 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.).

2.4 INTERIOR PAINT & STAIN MATERIALS (BASIS-OF-DESIGN PRODUCTS)

- A. Concrete: (1) coat PPG 4-603 Perma-Crete Interior/Exterior Alkali Resistant Primer (dry film thickness = 1.2 mils.); (2) finish coats PPG 9-300 Series Pure Performance Interior Eggshell Latex or PPG 9-500 Series Pure Performance Interior Semi-Gloss Latex (dry film thickness = 1.7 mil).
- B. Gypsum Wallboard: (1) coat PPG 9-900 Pure Performance Interior Latex Primer (dry film thickness = 1.4 mils.); (2) finish coats PPG 9-100 Series Pure Performance Interior Flat Latex or PPG 9-300 Series Pure Performance Interior Eggshell Latex or PPG 9-500 Series Pure Performance Interior Semi-Gloss Latex (dry film thickness = 1.7 mil).
- C. Wood: (1) coat PPG 9-900 Pure Performance Interior Latex Primer (dry film thickness = 1.4 mils.); (2) finish coats PPG 9-100 Series Pure Performance Interior Flat Latex or PPG 9-300 Series Pure Performance Interior Eggshell Latex or PPG 9-500 Series Pure Performance Interior Semi-Gloss Latex (dry film thickness = 1.7 mil).
- D. Metal: (1) coat PPG 90-712 Pitt Tech Interior/ Exterior Primer (dry film thickness = 2.0 mils.); (2) finish coats PPG 9-300 Series Pure Performance Interior Eggshell Latex or PPG 9-500 Series Pure Performance Interior Semi-Gloss Latex (dry film thickness = 1.7 mil).

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: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
 3. Clay Masonry: Remove efflorescence and chalk. Do not paint surfaces if moisture content of surfaces or alkalinity of mortar joints to be painted exceed that permitted in manufacturer's written instructions.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

4. 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.
 5. Wood: Clean surfaces of dirt or oil with scrapers, mineral spirits, and sandpaper as required. Prime or seal wood as required by paint manufacturer.
 6. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces with methods that comply with SSPC's recommendations.
 7. 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.
 8. Steel: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
 9. Aluminum: Remove surface oxidation.
 10. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.
 11. Plastic Trim Fabrication: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.
- D. Schedule painting so cleaning operations will not damage newly painted surfaces.

3.2 APPLICATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Paint exposed surfaces (unless otherwise indicated).
1. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.
 2. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 3. Paint the back side of access panels.
 4. Color-code mechanical piping in accessible ceiling spaces.
 5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.
 6. Paint or stain tops, bottoms and all exposed surfaces of all wood trim, including bottoms of window trim.
 7. Paint or stain tops and bottoms of all wood doors.
- C. Apply paints and stains 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.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

7. Minimum Coat Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness recommended by manufacturer.
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. Only paint mechanical and electrical work exposed to view, including ductwork interior where visible through grilles.
10. Apply paint evenly over all surfaces. **Poor paint performance or appearance, as judged by Architect and/or Owner, due to poor paint application or workmanship, shall be removed and repainted at contractor's expense.**
11. Protect all surfaces not to be painted as required against damage from painting; surfaces which are painted accidentally shall be either fully cleaned of paint or re-painted to match.
12. Protect all painted surfaces after paint application until project conclusion as necessary to maintain new painted finish.
13. Apply stains and transparent finishes to produce surface films without color irregularity, cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other imperfections. Use multiple coats to produce a smooth surface film of even luster.

3.3 FIELD QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to engage the services of a qualified testing agency to sample paint materials being used for compliance with Project requirements. Owner may direct Contractor to stop applying paints and correct deficiencies if test results show materials being used do not comply with product requirements.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION 099100

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 101400 - SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:

1. Panel signs.

1.2 SECTION REQUIREMENTS

- A. Submittals: Product Data and Shop Drawing for each type of sign.
- B. Regulatory Requirements: Comply with applicable provisions in [the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and 2010 ICC/ANSI A117.1.

1.3 COORDINATION

- A. Coordinate placement of anchorage devices for signs with templates for installing signs.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher, with not less than the strength and durability of 5005-H15.
- B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by
- C. Stainless Steel: ASTM A 240/A 240M or ASTM A 666, Type 304.
- D. Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).
- E. Plastic Laminate: High-pressure laminate engraving stock with face and core in contrasting colors.

BENT MOUNTAIN CENTER
"CHANGE-OF-USE" & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

2.2 SIGNS

- A. Interior Signs: Specific signage types to be coordinated with Owner for desired type, size and finishes. Locations of required signs as indicated in Drawings.
- B. Parking Signs: Manufacturer's standard metal sheet signs, in size(s), configuration and mounting types as indicated in Drawings.

2.3 FABRICATION & FINISHES

- A. Provide manufacturer's standard signs in configurations indicated in Drawings.
- B. Exterior signs shall be pre-finished for exterior exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate signs where indicated in Drawings. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.
- B. Interior Wall-Mounted Signs: Where applicable, use one of the following mounting techniques:
 - 1. Two-Face Tape: Mount signs to smooth, nonporous surfaces, other than vinyl.
 - 2. Hook-and-Loop Tapes: Mount signs to smooth, nonporous surfaces.
 - 3. Silicone-Adhesive Mounting: Attach signs to irregular, porous, or vinyl-covered surfaces.
 - 4. Mechanical Fasteners: For interior signs where weight of the sign will not allow use of the above methods, use nonremovable mechanical fasteners placed through predrilled holes.
- C. Bracket-Mounted Signs: Provide manufacturer's standard brackets, fittings, and hardware for mounting signs that project at right angles from walls, ceiling or poles. Attach brackets and fittings securely with concealed fasteners and anchoring devices to comply with manufacturer's written instructions.

END OF SECTION 101400

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

SECTION 320000 – GENERAL SITE SPECIFICATIONS

1.1 SUMMARY

- A. General site work required to complete the project including, but not limited to:
 - 1. Minor site clearing.
 - 2. Minor earthwork.
 - 3. Asphalt and concrete paving.
 - 4. Lawns and grasses.

1.2 QUALITY ASSURANCE

- A. All site-related work shall meet the requirements of any governing bodies having jurisdiction.
- B. All construction means and methods shall conform to the construction standards and specifications of the County of Roanoke and/or Virginia Department of Transportation.

1.3 EXECUTION

- A. Contractor shall include in his bid any site work necessary to complete the improvements shown, including site demolition, asphalt pavement, parking improvements, concrete sidewalk, landscaping, seeding and straw placement at denuded/disturbed areas, as well as temporary erosion control if required by the governing jurisdiction(s).
- B. Temporary Facilities: Provide as required per Division 1 “General Requirements”.
- C. Site Demolition:
 - 1. Contractor shall be responsible for demolition, clearing and grubbing of site for construction of improvements shown including vegetation, trees, roots, decaying materials and other obstructions from area occupied by utilities and structures. Demolition to include removal of existing objects or improvements, whether indicated on Drawings or not, that would be required to complete the Work shown.
 - 2. Contractor shall saw-cut all joints where existing curbing, pavement and/or sidewalk is required to be removed.
 - 3. Within the site disturbance area, excavate to required sub-grade elevations. Remove any existing material as required. Remove any unsuitable material, including all organics, roots, debris, fill and all soft wet soil.
 - 4. Contractor shall completely fill below grade areas and voids from demolition using approved select fill material. Fill any excavated areas with approved controlled fill material as required. Place in 8" maximum loose lifts and compact to a minimum of 95% of the maximum dry density in accordance with ASTM D-698. All controlled fill material shall be classified material.

BENT MOUNTAIN CENTER
“CHANGE-OF-USE” & INTERIOR RENOVATIONS
10148 Tinsley Lane
Bent Mountain, Roanoke County, Virginia
October 6, 2020

5. Contractor shall make arrangements before initiating demolition work for marking, disconnecting, relocating, abandoning or otherwise disturbing any utilities. Contractor shall make any investigations required to determine in unknown underground utilities are present.
6. Contractor shall not disrupt utilities that will cause any disruption or delay of Owner’s continued use of the property without prior notification to Owner.
7. Contractor shall conduct demolition operations to prevent damage to adjacent buildings or other site improvements.
8. Any excess construction debris shall be completely removed from site.

D. Site Grading:

1. Contractor shall conduct all site grading practices using approved select fill materials.
2. Contractor shall conduct all grading practices to ensure positive drainage away from building or other improvements as required.
3. Contractor shall conduct grading practices to ensure required slopes of hard-surface areas meet requirements specified in Drawings.

E. Asphalt Pavement & Parking:

1. All asphalt pavement shall be constructed in accordance with the Virginia Department of Transportation Standards and Specifications.
2. Asphalt pavement shall be SM-9.5A, thickness as indicated in drawings, but not less than 2”, over compacted gravel fill.
3. All parking lot striping shall be two coats of white standard commercial traffic paint, 4 inches (4”) wide, unless noted otherwise.

F. Concrete Sidewalk:

1. Provide as noted in Division 3 “Concrete” specifications.
2. Sidewalks shall be installed with a maximum 2.0% cross slope and a maximum 5.0% running slope, unless indicated otherwise in Drawings.
3. Sidewalks shall be broom finished, unless noted otherwise in Drawings.
4. Sidewalk widths shall be 5’-0” or match existing sidewalk widths where being infilled.
5. Joints in concrete sidewalk shall be spaced at 5’-0” maximum.
6. Fill below concrete sidewalks with select fill material and/or gravel as required to prevent sagging or upheaval of concrete.

G. Seeding:

1. Provide temporary seeding and straw for any areas that will not receive pavement or other improvements within 7 days. Temporary seeding shall meet Standard 3.31 of the “Virginia Erosion and Sediment Control Handbook”, latest edition.
2. Provide permanent seeding for any disturbed areas to remain landscaped (non-hard-surface). Permanent seeding shall meet Standard 3.32 of the “Virginia Erosion and Sediment Control Handbook”, latest edition.

END OF SECTION 320000



LIMITED ASBESTOS SURVEY AND LEAD-BASED PAINT INSPECTION REPORT

Bent Mountain Community Center

10148 Tinsley Lane
Roanoke, Virginia 24059



Prepared For:

Roanoke County General Services
1216 Kessler Mill Road
Salem, Virginia 24153
Phone: 540.777.6345
Attention: Ron Riquelmy
Email: rriquelmy@roanokecountyva.gov

Issue Date: August 26, 2019

F&R Project Number: 62X-0328

Conducted/Reviewed By:

Jesse Phillips
Aug 26 2019 1:57 PM

DocuSign

Jesse D. Phillips
Senior Environmental Professional

Conducted/Prepared By:

Adam Day
Aug 26 2019 1:58 PM

DocuSign

Adam J. T. Day
Environmental Scientist



TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1.	PURPOSE	1
1.2.	SITE DESCRIPTION	1
1.3.	BACKGROUND	2
2.0	SCOPE OF SERVICES.....	2
3.0	LIMITED ASBESTOS-CONTAINING MATERIALS SURVEY.....	2
3.1.	ASBESTOS-CONTAINING MATERIALS (ACM) METHODOLOGY.....	2
3.2.	ASBESTOS-CONTAINING MATERIALS FINDINGS	3
3.3.	ASBESTOS-CONTAINING MATERIALS INVENTORY.....	17
3.3.1.	<i>Trace Asbestos.....</i>	<i>18</i>
3.3.2.	<i>Presumed Asbestos-Containing Materials.....</i>	<i>19</i>
3.4.	ASBESTOS-CONTAINING MATERIALS RECOMMENDATIONS	19
3.5.	APPLICABLE REGULATIONS.....	21
3.5.1.	<i>EPA/NESHAP Regulations for Asbestos-Containing Materials</i>	<i>21</i>
3.5.2.	<i>Virginia Asbestos Regulations</i>	<i>22</i>
3.5.3.	<i>OSHA Asbestos Regulations</i>	<i>23</i>
4.0	LIMITED LEAD-BASED PAINT SURVEY.....	23
4.1.	LEAD-BASED PAINT SURVEY METHODOLOGY.....	23
4.1.1.	<i>XRF Testing</i>	<i>23</i>
4.2.	LEAD-BASED PAINT SURVEY FINDINGS	24
4.2.1.	<i>XRF Survey Results.....</i>	<i>24</i>
4.3.	LEAD-BASED PAINT CONCLUSIONS & RECOMMENDATIONS.....	26
4.4.	APPLICABLE REGULATIONS.....	27
4.4.1.	<i>OSHA Regulations for Lead-Based Paint</i>	<i>27</i>
4.4.2.	<i>EPA Regulations for Lead-Based Paint</i>	<i>28</i>
5.0	LIMITATIONS	28



APPENDICES

Appendix A

F&R Personnel and Laboratory Accreditations

Appendix B

Facility Sketch:
Sample Locations

Appendix C

Historical Documentation

Appendix D

Laboratory Certificates of Analysis
Bulk Sample Chain of Custody Forms

Appendix E

Photographic Documentation

Appendix F

Explanation of XRF Data Table
XRF Data Table
XRF Performance Characteristic Sheet



1.0 INTRODUCTION

Froehling & Robertson, Inc. (F&R) conducted a Limited Asbestos Survey and Lead-Based Paint (LBP) Inspection on August 8 and 12, 2019, at the Bent Mountain Community Center located at 10148 Tinsley Lane in Roanoke, Virginia. It is F&R's understanding that the structure is the subject of scheduled renovations which may impact building materials. The following sections document the survey procedures and results. Refer to Appendix A for Personnel Accreditation documentation of F&R personnel associated with this survey.

1.1. Purpose

The purpose of the Limited Asbestos Survey and LBP Inspection was to identify Asbestos-Containing Materials (ACMs) and LBP coatings that may require appropriate removal, handling, and disposal procedures prior to scheduled renovation activities at the subject property. This survey is to aid in the determination of health and safety requirements during the conduct of work which may impact identified materials.

1.2. Site Description

The former school structure is currently utilized as a community center and consists of an approximately 19,176 square foot building reportedly constructed in 1930 with an addition added in 1990. The 1930s portion is situated over a crawlspace and a basement. Interior finishes includes plaster and gypsum board ceilings and walls, acoustical ceiling tiles, carpet, vinyl floor tile, brick veneer and concrete masonry unit (CMU) walls, among others. Building exterior includes brick veneer walls and concrete. Refer to Appendix B for site sketches of the facility, including asbestos sample locations.

Note that F&R utilizes a combination of cardinal directions and Housing and Urban Development methodology for location identification modifiers: Side A is always the address side or the main entry side of the building. Then, proceeding in a clockwise direction the adjacent sides are labeled B, C and D; for example, the wall on the left side as one enters the building would be denoted as side B. Rooms with similar use patterns are numbered sequentially, generally with the first being the one that is encountered as one moves clockwise through the building from the main entry; unless room numbers are clearly identified on-site or on provided architectural/mechanical drawings which are expected to persist throughout the project. Note that F&R utilized Hallway and Room numbers as they were labeled on-site; such designations are expected to persist throughout the project. Refer to Appendix B for facility sketches created by F&R based upon site conditions observed at the time this survey was conducted.

It should be noted that material and color descriptions are subjective and that, due to the nature of the environment, identical materials and colors may have been labeled as different depending on the lighting, other colors in the area, and other factors.



1.3. Background

F&R was provided with a previous survey report prepared by Barrata & Associates, Inc titled *Three Year AHERA Reinspection* dated March 4, 2008. As the previous report title indicates, the survey assessed portions of the structure for the purpose of compliance with existing Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) requirements to perform a re-inspection every three years (triennial). An AHERA triennial is conducted in a limited capacity for asbestos and is instead focused on the condition of the ACM that has been verified from past surveys. As such, the provided previous survey was not sufficient to constitute a thorough building survey as required for renovation purposes with regard to applicable Federal and State regulations. Historic survey data has not been tabulated within this report; however, the aforementioned previous survey report is included for reference as Appendix C – Historical Documentation.

2.0 SCOPE OF SERVICES

As outlined in F&R proposal number 1962-00836-Revision I, the survey included the following services with respect to the proposed renovation activities:

- Identification and sampling, as necessary, of suspect ACMs.
- Testing, as necessary, of building components for the presence of lead-based paint.

3.0 LIMITED ASBESTOS-CONTAINING MATERIALS SURVEY

F&R's Virginia Licensed Asbestos Building Inspector, Jesse D. Phillips (Virginia Asbestos License #3303 003557), conducted the Asbestos Survey of the current site structure(s) located at 10148 Tinsley Lane on August 8, 2019. The noted Inspector was assisted by F&R industrial hygienist Adam Day.

Federal Regulations (40 CFR Part 61, Subpart M – National Emission Standard for Asbestos (NESHAP)), as well as Virginia Department of Labor and Industry regulations require a thorough asbestos inspection of the structure to be conducted prior to the commencement of renovation and/or demolition activities. An ACM is defined by the Occupational Safety & Health Administration (OSHA) and the Environmental Protection Agency (EPA) as material containing greater than one percent (1%) asbestos.

3.1. Asbestos-Containing Materials (ACM) Methodology

This survey was conducted in general accordance with the Federal NESHAP and applicable State regulations for the presence of ACMs. The survey was characterized by a visual inspection and sampling of suspect building components at the subject property to be impacted by the proposed renovation activities.



Guidelines utilized in the asbestos survey were established by the EPA, ASTM International (ASTM), and The Environmental Information Association, Inc. (EIA). Utilized guidelines included: the Asbestos Hazard Emergency Response Act (40 CFR Part 763, Subpart E – Asbestos-Containing Materials in Schools (cited as AHERA)), ASTM Standard E2356-14 *Standard Practice for Comprehensive Building Asbestos Surveys*, and the EIA publication *Managing Asbestos in Buildings: A Guide for Owners and Managers – A Revision to the United States Environmental Protection Agency’s 1985 document Guidance for Controlling Asbestos-Containing Materials in Buildings (EPA 560/5-85-024) Known as the Purple Book*.

F&R’s aforementioned industrial hygienist(s) collected and submitted suspect asbestos-containing bulk samples to the laboratory, of which, a total of seventy six (76) (1930s portion) and forty nine (49) (1990s portion) suspect asbestos-containing bulk samples with discernable layers were analyzed by the testing laboratory. Due to multiple layers, a total of one hundred twenty one (121) (1930s portion) and seventy three (73) (1990s portion) samples were analyzed.

Samples of suspect ACMs were organized as per the AHERA concept of Homogeneous Area (HA), collected, and transported to the Environmental Hazards Services, L.L.C. (EHS) testing laboratory. EHS is a National Institute for Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory (NVLAP Lab Code: 101882-0) and Virginia licensed asbestos laboratory, located in Richmond, Virginia, for analysis by Polarized Light Microscopy (PLM) following EPA Method 600/R-93/116. Refer to Appendix A for Laboratory Certificates of Accreditations. Refer to Appendix D for Laboratory Certificates of Analysis and Bulk Sample Chain of Custody Forms for further description of sampled materials/analytical results.

3.2. Asbestos-Containing Materials Findings

The following material types were identified, sampled, and accordingly homogenized based upon similar construction discovered during bulk sampling:

- Gypsum Board
- Acoustical Ceiling Panel
- Vinyl Cove Base
- Brick/Mortar and Grout
- Sound Absorption Board (“Tectum”)
- Wood Tile Flooring
- Thermal System Insulation (TSI)/Jacketing
- Joint Compound
- 12 x 12 Vinyl Floor Tile
- Drywall/joint compound
- Various Caulking and Mastics
- HVAC Sealant
- CMU

The following table presents a summary of survey results from sampling events performed on August 8 and 12, 2019. Refer to Appendix B for illustration of the locations of collected bulk samples. Positive asbestos samples (samples containing detectable concentrations of asbestos) are in **BOLD** type.



3.2.1. 1930s Building

SUSPECT ASBESTOS-CONTAINING MATERIALS SAMPLE INFORMATION 1930 PORTION OF STRUCTURE

HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
1	1930-1A	1	South West Exterior Corner	Red Brick	Red Cementitious; Homogeneous	NAD
	Mortar			Tan Granular; Homogeneous	NAD	
	1930-1B		South East Exterior Corner	Red Brick	Red Cementitious; Homogeneous	NAD
	1930-1B			Mortar	Tan Granular; Homogeneous	NAD
2	1930-2A	1	Foundation – East Wall	Concrete	Gray/Beige Cementitious; Homogeneous	NAD
	1930-2B		South Face – East Of Main Entry	Concrete	Gray/Beige Cementitious; Homogeneous	NAD
3	1930-3A ⁴	1	White Pliable – South Side Double Doors Exterior	White Door Caulking	White Paint-Like; White Pliable; Inhomogeneous	NAD
	1930-3B ⁴		South Door – West End – Former Exterior Side	Caulk I	Blue Paint-Like; Beige Soft Pliable-Like; Inhomogeneous	3% Chrysotile
				Caulk II	Gray Soft Pliable-Like; Homogeneous	3% Chrysotile
4	1930-4A	1	Classroom 2 – Exterior Window – West Side	Glazing	White Paint-Like; Tan Brittle; Inhomogeneous	2% Chrysotile
	1930-4B		Classroom 3 – Exterior Window – South Side	Glazing	Gray/White Brittle; Homogeneous	NAD
5	1930-5A ⁴	1	North Side – West Window Exterior	Caulk	White Pliable; Homogeneous	NAD
	1930-5B ⁴		South Side – West Window	Caulk I	White Pliable; Homogeneous	Trace <1% Chrysotile ⁵
	1930-5B ⁴		South Side – West Window	Caulk II	Gray Soft Pliable; Homogeneous	3% Chrysotile



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
6	1930-6A	1	2 Layer Plaster Ceiling – Workroom Floor (Damaged/Delaminated)	Skim Coat	Beige Granular; Homogeneous	NAD
	1930-6A			Base Coat	Gray Granular; Homogeneous	Trace <1% Chrysotile
	1930-6B		2 Layer Plaster Ceiling – Classroom 5 Floor (Damaged/Delaminated)	Skim Coat	Blue Paint-Like; White Brittle; Inhomogeneous	NAD
	1930-6B			Base Coat	Gray Granular; Homogeneous	Trace <1% Chrysotile
	1930-6C		2 Layer Plaster Ceiling – Principles Office	Skim Coat	Beige Granular; Homogeneous	NAD
	1930-6C			Base Coat	Gray Granular; Homogeneous	Trace <1% Chrysotile
	1930-6D		2 Layer Plaster Ceiling – Custodial Room 9	Skim Coat	White Granular; Homogeneous	NAD
	1930-6D			Base Coat	Gray Granular; Homogeneous	Trace <1% Chrysotile
	1930-6E		2 Layer Plaster – Classroom 1	Joint Compound	White Paint-Like; White Powdery; Inhomogeneous	NAD
	1930-6E			Skim Coat	White Granular; Homogeneous	NAD
7	1930-7A	1	Hallway At Chimney Outside Classroom 1	Joint Compound	White Paint-Like; White Powdery; Inhomogeneous	NAD
	1930-7A			Gypsum Board	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-7B		Hallway At General Office	Joint Compound	White Paint-Like; White Powdery; Inhomogeneous	NAD
	1930-7B		Hall at General Office	Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-7C		Hallway At Classroom 5	Joint Compound	White Paint-Like; White Powdery; Inhomogeneous	NAD
	1930-7C		Hallway at Classroom 5	Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
8	1930-8A	1	Office 8 – At Sink	White Sink Backing	Off-White Adhesive-Like; Homogeneous	NAD
9	1930-9A	1	General Office	2' x 4' Ceiling Panel, pinhole with random fissures	White Paint-Like; Gray Fibrous; Inhomogeneous	NAD
	1930-9B		Room 7	2' x 4' Ceiling Panel, pinhole with random fissures	White Paint-Like; Gray Fibrous; Inhomogeneous	NAD
10	1930-10A	1	Foyer – South East Corner	2' x 4' Ceiling Panel, pinhole with random fissures	White Paint-Like; Gray Fibrous; Inhomogeneous	NAD
	1930-10B		Room 4 Center	2' x 4' Ceiling Panel, pinhole with random fissures	White Paint-Like; Gray Fibrous; Inhomogeneous	NAD
11	1930-11A	1	Foyer – East Side	2' x 4' Ceiling Panel, pinholes large and small	White Paint-Like; Gray Fibrous; Inhomogeneous	NAD
	1930-11B		Foyer – North Center	2' x 4' Ceiling Panel, pinholes large and small	White Paint-Like; Gray Fibrous; Inhomogeneous	NAD
12	1930-12A	1	Workroom – Office Suite (damaged/removed from wall and placed on floor)	Purple Cove Base	Purple Rubbery; Homogeneous	NAD
	1930-12A			Mastic	Yellow/Black Adhesive; Inhomogeneous	NAD
	1930-12B		Hallway At Door To Classroom 4	Purple Cove Base	Purple Rubbery; Homogeneous	NAD
	1930-12B			Mastic	White Adhesive; Homogeneous	NAD
13	1930-13A	1	Hallway at Room 9 At Columns	Plaster-Skim Coat	Beige Paint-Like; White Brittle; Inhomogeneous	NAD
	1930-13A		Hallway at Room 9 At Columns	Plaster-Base Coat	Gray Granular; Homogeneous	NAD
	1930-13B		Hallway at Room 2	Plaster-Skim Coat	White Paint-Like; White Brittle; Inhomogeneous	NAD



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
13	1930-13B	1	Hallway at Room 2	Plaster-Base Coat	Gray Granular; Homogeneous	NAD
	1930-13C		Door Between Hall And General Office	Plaster-Skim Coat	White Brittle; Homogeneous	NAD
	1930-13C			Plaster-Base Coat	Gray Granular; Homogeneous	NAD
	1930-13D		Classroom 4 – Demising Wall With Bell At Door	Plaster-Skim Coat	White Brittle; Gray	NAD
	1930-13D			Plaster-Base Coat	Gray Granular; Homogeneous	NAD
	1930-13E		Classroom 3 – Demising Wall With Bell At Door	Plaster-Skim Coat	White Brittle; Homogeneous	NAD
	1930-13E			Plaster-Base Coat	Gray Granular; Homogeneous	NAD
14	1930-14A	1	Room 8 At Door To Hall	Hollow Demising Wall	Brown Fibrous; Gray Chalky; Homogeneous	NAD
	1930-14B		Hallway At Workroom Exterior (Media Center)	Joint Compound	White Powdery; Homogeneous	NAD
	1930-14B			Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-14C		Classroom 4 Opposite Door On Perimeter Wall Interior	Hollow Demising Wall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-14D		Classroom 2 – Perimeter Wall Interior – West Side South End	Hollow Demising Wall	White Powdery; Homogeneous	NAD
	1930-14D			Hollow Demising Wall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
15	1930-15A	1	Hallway Outside Office Suite	Plaster Demising Wall Skim Coat	White Granular; Homogeneous	NAD
	1930-15A		Hallway Outside Office Suite	Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-15B		Hallway Outside Classroom 3	Joint Compound	White Granular; Homogeneous	NAD
	1930-15B		Hallway Outside Classroom 3	Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-15C		Classroom 3 Against Demising Wall With Classroom 4	Plaster Base Coat	White/Yellow/Green Paint-Like; Gray Cementitious; Inhomogeneous	Trace <1% Chrysotile ⁶
16	1930-16A	1	Room 8 – Southwest Corner Above Drop Ceiling	Joint Compound	White Powdery; Homogeneous	NAD
16	1930-16A	1		Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-16B		Media Room – East Wall At Convex Corner Of Computer Room Above Drop Ceiling	Joint Compound	White Powdery; Homogeneous	NAD
	1930-16B			Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
	1930-16C		Computer Room (6) – South Wall With Workroom Above Drop Ceiling	Joint Compound	White Powdery; Homogeneous	NAD
	1930-16C			Drywall	Brown Fibrous; Gray Chalky; Inhomogeneous	NAD
17	1930-17A	1	Room 8 – Above Drop Ceiling	Tan Duct Joint Sealant	Off-White Pliable; Homogeneous	NAD
	1930-17B		Computer Room (6) - Above Ceiling Drop	Tan Duct Joint Sealant	Off-White Pliable; Homogeneous	NAD
18	1930-18A	1	Room 8 – Above Drop Ceiling	Red Duct Joint Sealant	Maroon Pliable to Brittle; Homogeneous	NAD
	1930-18B		Room 6 - Above Ceiling Drop	Red Duct Joint Sealant	Beige to Brown Pliable to Brittle; Homogeneous	NAD



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
19	1930-19A	1	Wall Of Room 6 – South Side – Brown Wall	Bulletin Board Mastic	Brown Adhesive; Homogeneous	NAD
20	1930-20A	1	Computer Room (6) - Above Ceiling Drop	Black HVAC Damper	Black Vinyl-Like; Homogeneous	NAD
21	1930-21A	1	Computer Room (6) Ceiling	Ceiling Panel	Tan Fibrous; White Brittle; Inhomogeneous	NAD
	1930-21B		Computer Room (6) Ceiling	Ceiling Panel	Tan Fibrous; White Brittle; Inhomogeneous	NAD
22	1930-22A	1	Computer Room (6) – Perimeter Wall With Courtyard – Above Drop Ceiling	Insulation	Yellow Foam-Like; Silver Metallica; Translucent Adhesive; Inhomogeneous	NAD
23	1930-23A	1	Computer Room (6) – East Floor/Wall	Cove Base	Dark Blue Vinyl-Like; Homogeneous	NAD
	1930-23A			Mastic	Off-White Adhesive; Homogeneous	NAD
	1930-23A			Joint Compound ⁷	Off-White Brittle; Homogeneous	Trace <1% Chrysotile
23	1930-23B	1	Computer Room (6) – West Floor/Wall	Cove Base	Blue Vinyl-Like; Homogeneous	NAD
	1930-23B			Mastic	Pale Yellow Adhesive; Homogeneous	NAD
24	1930-24A	1	Media Center – South East Corner – Under Carpet	Carpet Mastic	Yellow Adhesive; Homogeneous	NAD
	1930-24A			Carpet Mastic	Blue-Green Adhesive; Homogeneous	NAD
	1930-24B		Media Center – North West Corner	Carpet Mastic	Yellow Adhesive; Homogeneous	NAD
	1930-24B			Carpet Mastic	Blue-Green Adhesive; Homogeneous	NAD



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
25	1930-25A	1	Front Stairs In Foyer	Stair Tread – Maroon	Maroon Pliable; Homogeneous	NAD
	1930-25B			Stair Tread - Maroon	Maroon Pliable; Homogeneous	NAD
26	1930-26A	B	Basement/Boiler Room At Hollow Pipe Penetration Room A	Cardboard Pipe Housing	Tan Fibrous; White Brittle; Inhomogeneous	NAD
27	1930-27A	1	Foyer Stairs Area	Tan Tread Mastic	Yellow to Tan Pliable; Homogeneous	NAD
	1930-27B		Foyer Stairs Area	Tan Tread Mastic	Yellow to Tan Pliable; Homogeneous	NAD
28	1930-28A	1	Foyer Stairs Area	Red Vinyl Flooring	Red Granular; Homogeneous	NAD
	1930-28A			Lower Layer Mastic Beneath Flooring	Amber Adhesive; Homogeneous	NAD
	1930-28A			Upper Layer Mastic Beneath Flooring	Black Adhesive; Homogeneous	NAD
	1930-28B		Foyer Stairs Area	Red Vinyl Flooring	Red Granular; Homogeneous	NAD
	1930-28B			Mastic	Yellow Adhesive; Homogeneous	NAD
29	1930-29A	1	Foyer – Stairs Area	Flooring	White/Multi-Colored Granular; Homogeneous	NAD
	1930-29A			Mastic	Yellow to Amber Adhesive; Homogeneous	NAD
	1930-29B		Classroom 4 – North End By Closets	Flooring	White/Multi-Colored Granular; Homogeneous	NAD
	1930-29B			Mastic	Yellow to Amber Adhesive; Homogeneous	NAD



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
30	1930-30A	1	Center Of Room 4	Black Transition	Black Vinyl-Like; Homogeneous	NAD
	Mastic			Translucent to Pale Tan Adhesive; Homogeneous	NAD	
	1930-30B		Door To Hall At Room 4	Black Transition	Black Vinyl-Like; Homogeneous	NAD
	1930-30B		Door To Hall At Room 4	Mastic	Translucent to Pale Tan Adhesive; Homogeneous	NAD
31*	1990 – 31A	1	Room 7 – Restroom With Shower, At Base Of Shower Face	White Caulk	Tan Pliable; Homogeneous	NAD
31*	1930-31A	1	Media Center	4” Cream Cove Base	Beige Vinyl-Like; Homogeneous	NAD
	Media Center		Mastic	Pale Yellow Adhesive; Homogeneous	NAD	
	Media Center		Joint Compound	White Brittle; Homogeneous	NAD	
*Second Homogenous Area 31 inadvertently duplicated in the field.						
32	1930-32A	B	Basement	½” TSI Covering/Jacket	White Pliable to Brittle; Pale Beige/Off-White Fibrous; Silver Metallic; Off-White Adhesive; Inhomogeneous	NAD
	1930-32A			½” TSI	Yellow Adhesive; Homogeneous	NAD
	1930-32B	1	Room 9	½” TSI Covering/Jacket	White Pliable to Brittle; Pale Beige/Off-White Fibrous; Silver Metallic; Off-White Adhesive; Inhomogeneous	NAD
			Room 9			
1930-32B			½” TSI	Yellow Adhesive; Homogeneous	NAD	



HA #	Sample #	Situation ¹	Sample Location(s)	Material Description	Laboratory Description	Result (Percent ACM)
33	1930-33A	B	Basement	2" TSI Covering/Jacket	White Pliable to Brittle; Pale Beige/Off-White Fibrous; Silver Metallic; Off-White Adhesive; Inhomogeneous	NAD
	1930-33A			2" TSI	Yellow Fibrous; Homogeneous	NAD
	1930-33B	1	Room 9	2" TSI Covering/Jacket	Pale Beige Brittle; Pale Beige/Off-White Fibrous; Silver Metallic; Off-White Adhesive; Inhomogeneous	NAD
	1930-33B			2" TSI	Yellow Fibrous; Homogeneous	NAD
34	1930-34A	B	Basement	Plaster Ceiling	Pale Gray Cementitious; White Brittle; Inhomogeneous	NAD
	1930-34B		Basement	Plaster Ceiling	Pale Gray Cementitious; White Brittle; Inhomogeneous	NAD
35	1930-35A	C	Crawl Space	Tar Paper	Black to Brown Fibrous; Homogeneous	NAD
36	1930-36A	C	Crawl Space	Insulation	Tan/Yellow Fibrous; Black Pliable; Inhomogeneous	NAD
37	1930-37A	C	Crawl Space	Wiring Jacket	Beige/Pale Silver/Tan Fibrous; Off-White/Black Vinyl-Like; Copper Tan Fibrous; White Brittle; Inhomogeneous	NAD

¹Situation: 1 –First; B – Basement; C – Crawl Space; E – Exterior

²NAD: No Asbestos Detected

³**Bold:** Asbestos Containing Material or Trace (<1%) Asbestos Present

⁴Caulking with two separate caulk layers

⁵Lab Note: Possible contamination from caulk II

⁶Lab Note: <1% Chrysotile present in base coat

⁷Lab Note: Drywall System Joint Compound-Type Substrate Material



3.2.2. 1990s Building

SUSPECT ASBESTOS-CONTAINING MATERIALS SAMPLE INFORMATION 1990 PORTION OF STRUCTURE

HA #	Sample #	Sample Location(s) ¹	Material Description	Laboratory Description	Result (Percent ACM)
1 (visibly similar to HA 6/7, 21, & 25)	1990 -1A	Library – Electrical/ IT/ Storage Closet At Ceiling Access	Gypsum wallboard, Joint compound	Gray Powder; Brown Fibrous; Inhomogeneous	NAD
	1990 – 1A	Library – Electrical/IT/Storage Closet At Ceiling Access	Gypsum Wallboard, Joint Compound	White Granular; Homogeneous	NAD
	1990 – 1B	Storage HVAC Room – West Wall		Gray Powder; Brown Fibrous; Inhomogeneous	NAD
	1990 – 1C	Library – Electrical/IT/Storage Closet – North Wall At Door	Joint Compound	White Granular; Homogeneous	NAD
2	1990 – 2A	Library – Electrical/IT/Storage Closet Access In Ceiling (Partial Piece)	2' x 4' Ceiling Panel, Partial piece with pit and fissures	Brown Fibrous; White Paint; Inhomogeneous	NAD
	1990 – 2B	Eastern Breezeway	2' x 4' Ceiling Panel, Partial Piece with pit and fissures	Brown Fibrous; White Paint; Inhomogeneous	NAD
3	1990 – 3A	Library – Storage HVAC Room Floor	12 x 12 Floor Tile, Sea foam with cream, white, brown smears	Gray Vinyl; Homogeneous	NAD
	1990 – 3A	Library – Storage HVAC Room Floor	Black Mastic	Black Tar; Homogeneous	NAD
	1990 – 3B	Library – Storage HVAC Room Floor	12 x 12 Floor Tile, Sea foam with cream, white, brown smears	Gray Vinyl; Homogeneous	NAD
	1990 – 3B	Library – Storage HVAC Room Floor	Yellow Mastic	Yellow Adhesive; Homogeneous	NAD
4	1990 – 4A	Library – Under Fountain	4" Cream cove base	Tan Vinyl; Homogeneous	NAD
	1990 – 4A		Black Mastic	Tan Adhesive; Homogeneous	NAD
5	1990 – 5A	Library – Under Multicolored Carpet Square, By Fountain	Yellow Mastic	Yellow Adhesive; Homogeneous	NAD
	1990 – 5B	Library – Under Multicolored Carpet Square, At Circulation Desk		Yellow Adhesive; Homogeneous	NAD



HA #	Sample #	Sample Location(s) ¹	Material Description	Laboratory Description	Result (Percent ACM)
6 (visibly similar to HA 1, 21, 25)	1990 – 6A	Library; Children's Addition – East End Wall At Outlet	Joint Compound	White Granular; Homogeneous	NAD
	1990 – 6B	Library; Children's Addition – West Side Wall At North Outlet		White Granular; Homogeneous	NAD
7	1990 – 7A	Library; Children's Addition – West Side Wall At Outlet	Drywall	Gray Powder; Brown Fibrous; Gray Paint; Inhomogeneous	NAD
8	1990 – 8A	Library; Children's Additions – Wall/Brick Interior Face, South East Corner	White Caulk	White Pliable; Homogeneous	NAD
8	1990 – 8B	Library; Children's Addition – Wall/Brick Interior Face, South West Corner		White Pliable; Homogeneous	NAD
9	1990 – 9A	North East Exterior Wall, At Corner	Brick	Red Cementitious; Homogeneous	NAD
	1990 – 9A		Mortar	Brown Granular; Homogeneous	NAD
	1990 – 9B	South East Exterior Wall, At Corner	Brick	Red Cementitious; Homogeneous	NAD
	1990 – 9B		Mortar	Brown Granular; Homogeneous	NAD
10	1990 – 10A	North East Exterior Wall, At Corner	Block	Gray Cementitious; Homogeneous	NAD
	1990 – 10A		Mortar	Brown Granular; Homogeneous	NAD
	1990 – 10B	South East Exterior Wall, At Corner	Block	Gray Cementitious; Homogeneous	NAD
	1990 – 10B		Mortar	Brown Granular; Homogeneous	NAD
11	1990 – 11A	East Wall Exterior, At Brick Construction Joint	Black Caulk	Black Pliable; Homogeneous	NAD
	1990 – 11B	West Wall Of Interior Cafetorium, At Brick Construction Joint		Black Pliable; Homogeneous	NAD
12	1990 – 12A	Cafetorium Stage South Storage Closet, At HVAC Unit	Red HVAC Sealant	Brown Pliable; Homogeneous	NAD
13	1990 – 13A	Stairs By Stage South Storage Closet	Green Stair Tread	Green Vinyl; Homogeneous	NAD



HA #	Sample #	Sample Location(s) ¹	Material Description	Laboratory Description	Result (Percent ACM)
	1990 – 13A	Stage Stairs, By South Corner Of Stage	Mastic	Tan Adhesive; Homogeneous	NAD
	1990 – 13B		Green Stair Tread	Green Vinyl; Homogeneous	NAD
	1990 – 13B		Mastic	Tan/Black Adhesive; Inhomogeneous	NAD
14	1990 – 14A	Western Foyer/Breezeway, Facing Kitchen Entrance Door, Above Drop Ceiling Tile	TSI	Yellow Fibrous; Homogeneous	NAD
	1990 – 14A		TSI Covering/Jacket	White Pliable; Silver Foil; Inhomogeneous	NAD
15	1990 – 15A	Ducts Above Stage Access From Ladder	Tan Duct Sealant	Tan Pliable; Homogeneous	NAD
16	1990 – 16A	Cafetorium – North Side At Exit Door	Brown 4" Cove Base	Tan Vinyl; Homogeneous	NAD
	1990 – 16A		Mastic	Brown/Tan Adhesive; Homogeneous	NAD
	1990 – 16B	Cafetorium – East Side At HVAC Double Doors	Brown 4" Cove Base	Tan Vinyl; Homogeneous	NAD
	1990 – 16B		Mastic	Tan Adhesive; Homogeneous	NAD
17	1990 – 17A	Kitchen – East Wall Cover Base Under Sink	Black Caulk Sealant	Black Pliable; Homogeneous	NAD
	1990 – 17B	Kitchen – North Wall At Tile Cover Base		Black Pliable; Homogeneous	NAD
18	1990 – 18A	Kitchen – North Wall At Water Heater	TSI	Yellow Fibrous; Homogeneous	NAD
	1990 – 18A		TSI Covering/Jacket	Tan Fibrous; Silver Foil; Inhomogeneous	NAD
	1990 – 18B		TSI	Yellow Fibrous; Homogeneous	NAD
	1990 – 18B		TSI Covering/Jacket	Tan Fibrous; Silver Foil; Inhomogeneous	NAD
19	1990 – 19A	Kitchen – Mop Closet At Base Of Mop Sink	Foam	Gray Foam; Homogeneous	NAD
	1990 – 19A		Caulk	Tan Pliable; Homogeneous	NAD
	1990 – 19B		Foam	Gray Foam; Homogeneous	NAD
	1990 – 19B		Caulk	Tan Pliable; Homogeneous	NAD



HA #	Sample #	Sample Location(s) ¹	Material Description	Laboratory Description	Result (Percent ACM)
20	1990 – 20A	Kitchen – North Wall At Base Of Exit Door, East Side Of Door	CMU Block	Gray Cementitious; Tan Paint; Inhomogeneous	NAD
	1990 – 20B	Kitchen – North Wall At Corner Of Water Heater Partition Wall		Gray Cementitious; Tan Paint; Inhomogeneous	NAD
21 (visibly similar to HA 1, 6/7, and 25)	1990 – 21A	Kitchen – Bathroom Ceiling	Gypsum Wall Board	Gray Powder; Brown Fibrous; Inhomogeneous	NAD
22	1990 – 22A	Cafetorium – North Wall At East Most Board	Sound Absorption Board	Tan Granular; Brown Fibrous; Inhomogeneous	NAD
	1990 -22B	Cafetorium – West Wall At Middle Most Board		Tan Granular; Brown Fibrous; Inhomogeneous	NAD
23	1990 – 23A	Men’s Restroom – East Wall At Tile Cove Base Behind Door	Blue Ceramic Tile	Blue Cementitious; Homogeneous	NAD
	1990 – 23A		Grout	Gray Granular; Homogeneous	NAD
24	1990 – 24A	Kitchen – Cove Base At North Door Exit	Brown Ceramic Tile	Brown Cementitious; Homogeneous	NAD
	1990 – 24A		Grout	Brown Granular; Homogeneous	NAD
	1990 – 24A		Mastic	White Adhesive; Homogeneous	NAD
25 (visibly similar to HA 1, 6/7, & 21)	1990 – 25A	Kitchen – Ceiling At Removable Ceiling Tile, On 2x4 Joint	Joint Compound	White Pliable; Homogeneous	NAD
26 (visibly similar to HA 27)	1990 – 26A	West Side Double Doors Entrance, South Door	Black Window Glazing Compound	Black Pliable; Homogeneous	2% Chrysotile
27 (visibly similar to HA 26)	1990 – 27A	West Side South Facing Double Doors, Entrance To Library, East Door	Black Window Glazing Compound	Black Pliable; Homogeneous	NAD



HA #	Sample #	Sample Location(s) ¹	Material Description	Laboratory Description	Result (Percent ACM)
28	1990 – 28A ⁴	West Side Courtyard Double Doors, South Door	Clear Window Glazing Compound/Caulk	Black Pliable; Homogeneous	NAD
	1990 – 28A ⁴			Clear Pliable; Homogeneous	NAD
29	1990 – 29A	Cafetorium – North Side Exit Door, At Door Transition	Wood Tile, Flooring	Brown Fibrous; Homogeneous	NAD
	1990 – 29A		Wood Tile, Mastic	Tan Adhesive; Homogeneous	NAD
30	1990 – 30A	Custodial Closet, Room 9, North Wall	Yellow Penetration Compound	Tan Pliable; Homogeneous	NAD
Homogenous Area 31 was omitted due to field error.					
32	1990 – 32A	Cafetorium – HVAC Closet On HVAC Unit	Silver Caulk	Yellow/Tan Granular; Homogeneous	NAD
33	1990 – 33A	Cafetorium – HVAC Closet At HVAC Unit Connection To South Wall	Yellow Mortar	Silver Pliable; Homogeneous	NAD
34	1990 – 34A	East Side Double Doors Exterior At Breezeway	White Door Caulk	White Pliable; Homogeneous	NAD

¹All samples collected from first floor (single story building)

²NAD: No Asbestos Detected

³**Bold:** Asbestos Containing Material or Trace (<1%) Asbestos Present

⁴Caulking with two separate caulk layers

3.3. Asbestos-Containing Materials Inventory

F&R conducted a survey of the reasonably and safely accessible portions of the building. The Workroom in the Media Center was inaccessible during the site visit; suspect ACM in this space which were not represented during this survey should be presumed positive.

The following table presents identified materials containing greater than 1% asbestos, as well as presumed materials with regard to F&R survey activities and verified information obtained from Owner provided previous reports. Further, comprehensive delineation was not performed; therefore, the table below may not completely represent locations of identified ACMs. It is the responsibility of the client or contractor to verify material locations. Photographic documentation of ACMs for reference is provided as Appendix E.



ASBESTOS-CONTAINING MATERIALS INVENTORY 1930s PORTION

HA #	Material Description	Material Location(s)	Result (Percent ACM)
3	Caulk	South Door – East End – Former Exterior Side	3% Chrysotile
4	Glazing	Classroom 2 – Exterior Window West Side	2% Chrysotile

ASBESTOS-CONTAINING MATERIALS INVENTORY 1990s PORTION

HA #	Material Description	Material Location(s)	Result (Percent ACM)
26	Black Window Glazing Compound	West Side Double Doors Entrance, South Door	2% Chrysotile

F&R presumes that, where materials have been documented to be ACMs and where those materials are similar to other materials which have not been found to be positive, those similar materials will be considered to be ACMs (i.e. where one material was analyzed and found to be positive, it is prudent to consider other similar materials positive, despite potential analytical data to the contrary).

3.3.1. Trace Asbestos

A total of seven (7) building materials were detected in the 1930s portion for which analytical results indicated the presence of asbestos but in a quantity less than 1%, reported by the lab as trace. Representative samples are shown in the table below:

TRACE-ASBESTOS-BUILDING MATERIALS (TRACE <1%) INVENTORY

HA #	Material Description	Material Location(s)	Result (Percent Asbestos)
5	Caulk ¹	South Side Exterior – West Window	<1% Chrysotile
6	Base Coat	Workroom Ceiling - On Floor (Damaged)	<1% Chrysotile
6	Base Coat	Classroom 5 Ceiling - On Floor (Damaged)	<1% Chrysotile
6	Base Coat	Principles Office Ceiling	<1% Chrysotile
6	Base Coat	Classroom 1 Ceiling	<1% Chrysotile
15	Plaster Wall ²	Classroom 3 Against Demising Wall with Classroom 4 – In Closet	<1% Chrysotile
23	Joint Compound ³	Room 6 – East Floor/Wall	<1% Chrysotile

¹Lab Note: Possible contamination from caulk II

²Lab Note: <1% Chrysotile Present in the Base Coat

³Lab Note: Drywall System Joint Compound-Type Substrate Material



Trace levels of asbestos were identified in window caulking, the base coating of the plaster ceilings, one plaster finished wall (specifically in the base coat), and the joint compound in the gypsum wallboard system. Based on the laboratory analysis, it can be assumed that areas with similar homogeneous materials may also contain trace levels of asbestos. This includes rooms with similar plaster ceilings, plaster wall finishes, and window caulks.

Although this concentration of asbestos is below the regulatory threshold under EPA regulations, and additionally does not constitute ACM as per OSHA regulations, OSHA has regulations that apply to the removal and disturbance of trace levels of asbestos. F&R recommends that the owner either conduct follow-up sampling of the base coat using a more sensitive method (TEM analysis) to evaluate if there is asbestos present in this material or assume that the material is asbestos containing and manage it accordingly. F&R notes, however, that this is not a regulatory requirement and our recommendation is based on experience and good practice.

3.3.2. Presumed Asbestos-Containing Materials

During the conduct of this survey, sampling was limited to those materials which were within the areas designated by the client, which were safely accessible, and which were able to be sampled without damaging systems or structures. As such, some materials should be presumed to be positive, unless sampling is conducted and shown to be negative. Such presumed asbestos containing materials (PACMs) include, but are not limited to:

- Materials within the space above the drop ceilings;
- Materials within wall cavities or above hard ceilings;
- Fire door interiors,
- Gaskets and packing materials in plumbing, where present,
- Chimneys and flues or other cementitious pipes or panels,
- Internal Components within the HVAC units,
- Electrical Components,
- Etc.

Note that asbestos was used in over 3,000 known products and was used extensively in construction materials including in insulation and finish materials such as drywall-based systems, acoustical tiles, caulks and mastics, vinyl-based materials, and specialty products. Asbestos also continues to be used in new construction because, as stated by the EPA, "the manufacture, importation, processing, and distribution in commerce of [various] products [...] are not banned."

3.4. Asbestos-Containing Materials Recommendations

As detailed above, several materials were identified as asbestos-containing, utilized in window glazing and door caulking throughout the structure. Prior to impacting the identified or presumed ACMs via renovation and/or demolition, F&R recommends that the ACMs be appropriately



removed, handled, and disposed of by an appropriately licensed/accredited Abatement Contractor utilizing appropriately licensed/accredited personnel. Best practices dictate that an asbestos abatement specification document be prepared which details project-specific work plans and requirements. This abatement specification document should incorporate delineation of identified or presumed ACMs and should be furnished by the client or building owner to contractors for bidding purposes. Appropriately licensed or accredited personnel must prepare and/or review such specification documents. This survey report should not be used for bidding purposes.

A quantity of trace asbestos was reported by the testing laboratory for certain building materials and was determined to be present in window caulking, base coat in plaster finished ceilings, and plaster wall components including plaster base coat and joint compound. F&R recommends that the client consider proactive removal of the damaged trace ACMs in various areas in the structure including; General Office, Principle Office, Workroom, Classroom 5, and anywhere else it is present in the building. F&R recommends that rooms containing any damaged plaster ceiling materials be closed to pedestrian traffic and not be occupied until said materials are disposed of appropriately. Although EPA regulations do not require the disposal of trace (<1%) asbestos building materials to be treated as asbestos containing, OSHA regulations still apply to trace (<1%) building materials when engaging in renovation/demolition activities. Additionally, any further renovation/demolition activities which would damage or disturb the plaster wall systems or plaster ceilings should also be handled appropriately. F&R also recommends further sampling and delineation of all apparently homogeneous wall systems where asbestos was detected in any concentration.

With regard to the facility in terms of asbestos abatement activities, F&R recommends that a third party Asbestos Professional be retained to provide on-site surveillance and guidance of the Asbestos Abatement Contractor to confirm complete and proper removal/disposal of ACMs in accordance with applicable federal, state, and local regulations.

F&R further recommends that the third party Asbestos Professional be present for the duration of the abatement project and authorized to provide guidance to the Asbestos Abatement Contractor during the Project to confirm complete and proper removal/disposal of ACMs in accordance with applicable federal, state, and local regulations. This recommendation is made as a best practice to reduce potential exposure to workers and limit liability.

The Client should note that F&R has encountered instances in which materials were analyzed by Polarized Light Microscopy (PLM) (following EPA Method 600/R-93/116) for the presence of asbestos with a result of "None Detected", but when analyzed by Transmission Electron Microscopy (TEM) for Non-friable Organically Bound (NOB) bulk material, analytical results have indicated that asbestos is present in quantities greater than 1%. The client should be aware that F&R has samples analyzed by the PLM method for a number of reasons (including financial and time considerations) and that this method is considered acceptable in the State of Virginia;



however, some firms employ the more stringent TEM method which is required in some states. Therefore, it is possible that some materials identified as containing no asbestos within this report may, if subjected to a more stringent analytical method, reveal the presence of asbestos at concentrations of 1% or greater.

In addition, it should be noted that through NESHAP Applicability Determinations, asbestos bulk samples analyzed via PLM which indicate a result of asbestos content to be less than ten (10) percent, including trace amounts (<1%), the material in question shall either be assumed to be an ACM or further analyzed via PLM Point Count or TEM to verify asbestos content. Results obtained via PLM Point Count or TEM analysis shall supersede previous results obtained by standard PLM analysis. Samples with analytical results via PLM which indicate that no asbestos was detected are not required to be further analyzed via PLM Point Count or TEM. Note that the sampled materials where trace concentrations were detected should therefore be considered ACM (>1%) until more stringent analysis is performed.

Should additional suspect ACMs be discovered during renovation activities that have not been sampled and will be disturbed, F&R recommends the work be temporarily halted. Samples of suspect materials should be collected, analyzed, and handled accordingly prior to the resumption of renovation and/or demolition activities.

3.5. Applicable Regulations

3.5.1. EPA/NESHAP Regulations for Asbestos-Containing Materials

The U.S. Environmental Protection Agency promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 61], which addresses the application, removal, and disposal of asbestos-containing materials (ACM). Under NESHAP the following categories are defined for asbestos-containing materials:

Friable - When dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable - When dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Category I Non-friable ACM - Packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than 1% asbestos.

Category II Non-friable ACM – Material, excluding Category I Non-friable ACM, which contains more than 1% asbestos.

Regulated Asbestos Containing Material (RACM) – One of the following:



1. Friable ACM
2. Category I Non-friable ACM that has become friable.
3. Category I Non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
4. Category II Non-friable ACM that has a high probability of becoming, or has become, friable by the forces expected to act on the material in the course of demolition or renovation operations.

Under NESHAP, the following actions are required:

1. Prior to the commencement of demolition or renovation activities, the building owner must inspect the affected facility or part of the facility where the demolition or renovation activities will occur for the presence of asbestos.
2. Remove RACM from the facility before activities begin that would break up, dislodge, or similarly disturb the material or preclude access for subsequent removal.
3. ACM need not be removed if:
 - a) It is Category I non-friable ACM that is not in poor condition.
 - b) It is on a facility component that is encased in concrete or other similar material and is adequately wet whenever exposed.
 - c) It was not accessible for testing and was therefore not discovered until after demolition began and because of the demolition the material cannot be safely removed.
 - d) It is Category II non-friable ACM and the probability is low that the material will become crumbled, pulverized, or reduced to powder during demolition.

3.5.2. Virginia Asbestos Regulations

The Virginia Department of Labor and Industry (DOLI) regulates asbestos through enforcement of the Virginia Occupational Safety and Health (VOSH) regulations, enforcement of the Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants (NESHAP), and enforcement of the Asbestos Notification regulations found in the Labor Laws of Virginia (§40.1-51.20). Agency locations and regulations can be found on the agency Web site <http://www.doli.virginia.gov>.

The Virginia Department of Professional and Occupational Regulation (DPOR) is responsible for company and individual licensure in Virginia. Licensure and regulatory information can be found on DPOR's Web site <http://www.dpor.virginia.gov/>



The Virginia Department of Environmental Quality (DEQ) is responsible for the regulation of landfills in Virginia. Information on the disposal of asbestos in Virginia landfills can be obtained from the DEQ Web site <http://www.deq.state.va.us/>.

3.5.3. OSHA Asbestos Regulations

The Occupational Safety and Health Administration (OSHA) regulates employee exposure to asbestos under 29 CFR 1926.1101 and 29 CFR 1910.1001. Work associated with known or suspect ACMs must be conducted according to these regulations in addition to the noted EPA regulations. As discussed previously, OSHA has certain regulatory requirements for working with building materials where asbestos has been detected in a quantity of 1% or less.

4.0 LIMITED LEAD-BASED PAINT SURVEY

F&R's Virginia Licensed Lead-Based Paint Risk Assessor, Jesse D. Phillips (VA LBP License #3356 001002), performed the testing of surface coatings for lead on August 12, 2019. Refer to Appendix A for F&R Personnel Accreditation Documentation.

For definitions of terms used in this document with regard to Lead-Based Paint, please reference the Glossary of the [U.S. Department of Housing and Urban Development \(HUD\) Guidelines for the Evaluation and Control of Lead-Based paint Hazards in Housing \(Second Edition, July 2012\)](#).

Based on the nature of this survey, when one component tests positive for the presence of lead similar painted/coated components shall be assumed to be lead-containing, unless additional testing is performed.

4.1. Lead-Based Paint Survey Methodology

The survey was conducted in general accordance with EPA's work practice standards for conducting LBP activities (40 CFR 745.227), and the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (Second Edition, July 2012); however, this was not a comprehensive surface-by-surface investigation for LBP, but rather a screening survey of major coated surfaces where the presence of LBP is suspected.

4.1.1. XRF Testing

Sampling of surface coatings was conducted utilizing a Heuresis Pb200i X-Ray Fluorescence (XRF) Lead Paint Analyzer (Serial Number 1504) (VA)). Only accessible painted, coated, and/or varnished surfaces were tested using the XRF.

The XRF contains a small radioisotopic source and operates on the principle of x-ray fluorescence, whereby lead atoms in a surface coating are stimulated to emit characteristic x-rays, which are



then detected by the instrument. Levels of lead are reported in units of milligrams per square centimeter (mg/cm²). The XRF can measure surface or non-surface concentrations of lead with 95% accuracy at the HUD action level of 1.0 mg/cm². The XRF is able to accurately detect a concentration as low as 0.1 mg/cm² of lead. The XRF classifies coated surfaces as “positive”, “negative”, or “null” for lead content based on the action level (1.0 mg/cm²) and the performance characteristics of the XRF. The XRF was checked for calibration before and after the survey. The calibration was checked against a standard reference material (1.04 mg/cm² NIST Standard) supplied by the XRF manufacturer. A copy of the XRF Performance Characteristic sheet is included as an attachment to this report.

Positive: Lead is present at or above the action level of 1.0 mg/cm² on *one or more* of the components tested.

Negative: Lead is not present at or above the action level of 1.0 mg/cm² on any of the components tested.

Null: Insufficient data was collected by the XRF during the sample time to determine if the surface is positive or negative (i.e. – premature removal or instrument slippage, terminating the test).

4.2. Lead-Based Paint Survey Findings

4.2.1. XRF Survey Results

A total of two-hundred-sixty-five (265) XRF readings, excluding calibration readings, were collected from the interior and exterior of the building. Thirty-one (31) of the readings collected at the Project site were positive for LBP when compared to the action level of 1.0 mg/cm². Note that all positive readings were collected from the 1930s building; LBP was not identified in the 1990s building. Refer to Appendix F, XRF Data Table for a listing of the readings and respective information as well as an explanation of the data table and the Performance Characteristic Sheet. The following table presents the positive readings collected.

XRF READINGS FOR LEAD-BASED PAINT

Reading Number	Component	Substrate	Side	Color	Floor	Room	Build Date
34	Door Casing	Wood	North	Blue	First	West Foyer	1930
35	Door Transom	Wood	North	Blue	First	West Foyer	1930
36	Window Sill	Concrete	West	White	First	Exterior	1930
37	Window Mullion	Metal	South	White	First	Exterior	1930
39	Door Casing	Wood	South	White	First	Exterior	1930



Reading Number	Component	Substrate	Side	Color	Floor	Room	Build Date
42	Wall – White Masonry Detail	Concrete	North	White	First	Exterior	1930
45	Window Well	Wood	West	White	First	Exterior	1930
48	Window Sash	Wood	West	White	First	Exterior	1930
49	Window Casing	Wood	West	White	First	Exterior	1930
54	Chair Rail – replacement piece	Wood	South	Blue	First	1	1930
79	Bulletin Board Above Chalkboard	Cork	West	White	First	3	1930
80	Bulletin Board Above Chalkboard	Cork	North	White	First	3	1930
93	Window Parting Bead	Wood	East	White	First – Exterior side	4	1930
125	Window Sash	Wood	North	Blue	First	6	1930
127	Window Sash	Wood	North	Blue	First	6	1930
129	Window Sash	Wood	North	Blue	First	Media Center	1930
131	Window Sash	Wood	North	Blue	First	Media Center	1930
136	Door Mullion	Wood	North	Blue	First	East Hallway	1930
159	Window Sash	Wood	North	Blue	First	8	1930
160	Window Sash	Wood	North	Blue	First	8	1930
177	Fascia	Wood	North	White	Stairwell	Boiler/Mech/Utility	1930
178	Roof Top	Metal	North	Red	Stairwell	Boiler/Mech/Utility	1930
179	Wall	Concrete	North	White	Basement – Room B	Boiler/Mech/Utility	1930
180	Wall	Concrete	North	White	Basement – Room B	Boiler/Mech/Utility	1930
181	Wall	Concrete	South	White	Basement – Room B	Boiler/Mech/Utility	1930
190	Door	Wood	West	White	Basement – Room A	Boiler/Mech/Utility	1930
195	Wall	Concrete	East	White	Basement – Room A	Boiler/Mech/Utility	1930
199	Wall	Concrete	East	White	Basement – Stairwell	Boiler/Mech/Utility	1930
246	Roof Top	Metal	N/A	Red	Exterior	Red Flashing “awning” at breezeway	1990



Reading Number	Component	Substrate	Side	Color	Floor	Room	Build Date
251	Fascia	Wood	N/A	White	Exterior	Original Gym Roof Perimeter	1930
257	Vent	Metal	N/A	White	Exterior	Original Gym Roof Perimeter	1930

Data collected during the survey was extrapolated to similar homogeneous areas. As such, painted materials sharing similar color and texture with LBP components on the above table should be presumed positive for lead.

Note that the exterior portions of the windows should be presumed positive based on the results; interior portions of perimeter windows were found to be LBP-coated on the north facing walls only. However, for the purposes of this survey, since the exterior portions were also found to be LBP coated, the entire window should be treated as having been coated with LBP.

4.3. Inaccessible or Presumed Lead-Based Paint

During the conduct of this survey, testing was limited to those materials which were safely accessible and did not require invasive sampling. As such, some materials should be presumed to be positive, unless sampling is conducted and shown to be negative. Such presumed LBP coated components include, but are not limited to:

- Painted components within the space above the drop ceilings;
- The interior of wall cavities or above hard ceilings.

4.4. Lead-Based Paint Conclusions & Recommendations

This survey concludes that building components located on both the exterior and interior of the structure contain lead-based paint/coatings. Photographic documentation of select lead-containing paint/coatings on building materials is presented in Appendix E: Section 2.

F&R recommends that activities which may disturb such coatings be conducted following appropriate Federal and State regulations. Federal regulations with regard to worker safety and disposal requirements are summarized in the following Section – Applicable Regulations; this is not an exhaustive list.

Should additional suspect LBP coated components be discovered during renovation and/or demolition activities that have not been evaluated but will be disturbed, F&R recommends work be temporarily halted. Samples of suspect materials should be evaluated and handled accordingly prior to the resumption of renovation and/or demolition activities.



In addition to the above, F&R recommends that routine maintenance of the building be conducted to prevent or reduce risk associated with extant lead based paint. These measures should correspond to Chapter 6 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (Second Edition, July 2012)* which notes the following components of ongoing lead-safe maintenance:

- Periodic Visual Assessments
- Correction of problems found in the visual assessments
- Using lead-safe work practices
- Conducting a clearance examination

4.5. Applicable Regulations

4.5.1. OSHA Regulations for Lead-Based Paint

While the majority of materials tested at the site were negative for lead based paint and/or surface coatings, other painted and/or coated surfaces or materials containing lead may contain sufficient concentrations of lead, which when disturbed, may generate lead dust greater than the “Action Level” concentration of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) or greater than the “Permissible Exposure Limit” of 50 micrograms per cubic meter established by the OSHA “Lead Exposure in Construction Rule” (29 CFR 1926.62). The OSHA standard does not define acceptable levels of lead in paint at which no exposure to airborne lead (above the action level) would be expected; however, guidance is available for work practices which present the highest risk for lead exposure to workers. Rather, OSHA defines airborne concentrations and references specific types of work practices and operations from which a lead hazard may be generated (reference 29 CFR 1926.62, section d). Environmental and personnel monitoring should be conducted during removal or demolition processes (as applicable) to determine actual personal exposure. This monitoring information can be used to determine the levels of personnel protection and environmental controls required for work involving specific removal/demolition processes on specific structures. Under OSHA requirements, the Contractor performing the work will be required to conduct this monitoring. It is important to note that environmental controls will vary dependent upon the content of lead in paint, the process used to remove it, duration of the work, and the amount of paint to be removed.

F&R recommends that workers disturbing painted (or coated) surfaces as part of this project receive OSHA Lead in Construction Awareness training and that engineering controls and hygiene practices described in 29 CFR 1926.62 be followed during the disturbance of painted (or coated) surfaces.



4.5.2. EPA Regulations for Lead-Based Paint

For disposal of construction/demolition debris that has LBP, testing may be required as specified by the Environmental Protection Agency (EPA) for lead content to determine proper disposal. EPA regulations require that a generator of waste determine if that waste is hazardous by performing testing in accordance with the requirements of 40 CFR 261.11 or for wastes that may be RCRA hazardous (such as items with high lead content), the generator may assume that the waste is hazardous and comply with the hazardous waste regulation. The need for determination of disposal may be additionally subject to the disposal and/or recycling facility utilized.

If the facility will be occupied by children in a manner that would qualify the facility as “child occupied” under the US EPA RRP regulations found under 40 CFR 745, the Renovation, Repair, and Painting (RRP) Regulation would apply. In that case, if renovation work is completed at the facility, under, any Contractor shall complete all renovation work that will affect LBP coated surfaces in accordance with the requirements found in 40 CFR 745. The Contractor would be required to submit documentation of compliance with this standard to the Client prior to start-up of work, including personal training, certification of personal, and a means and methods work plan to comply with the RRP regulations.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of the County of Roanoke and/or their agents. This service was performed in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Conclusions and recommendations are based, in part, upon information provided to us by others and site observations. We have not verified the completeness or accuracy of the information provided by others, unless otherwise noted. Observations and recommendations are based upon conditions readily visible at the site at the time of the site visit, and upon current industry standards.

During this study, suspect asbestos samples were submitted for analysis at a NVLAP-accredited laboratory via polarized light microscopy; suspect LBP was field characterized using industry standard methods and practices. Inaccessible areas, such as behind solid ceilings or behind solid walls were not surveyed; therefore, some target materials may not have been identified. As with similar surveys of this nature, actual conditions exist only at the precise locations from which samples were collected or tested. Areas inspected were limited to those designated by the scope of services by the Client. Certain inferences are based on the results of this sampling and related testing to form a professional opinion of conditions in areas beyond those from which the samples were collected. Unless otherwise noted, F&R does not claim to have performed exhaustive delineation and/or quantification of identified materials; it is the responsibility of the client or abatement contractor to verify locations and quantities of regulated materials. It is also understood that this is a non-invasive survey so that it is possible that concealed materials may be present that were not accessible during the original survey. No other warranty, expressed or



implied, is made. Reasonable effort was made by inspection personnel to locate and sample suspect materials within the structure with regard to the scope of services. However, for a facility, the existence of unique or concealed ACMs or LBP and debris is a possibility. F&R does not warrant, guarantee or profess to have the ability to locate or identify all ACMs, LBP, or other chemicals of concern in a facility.

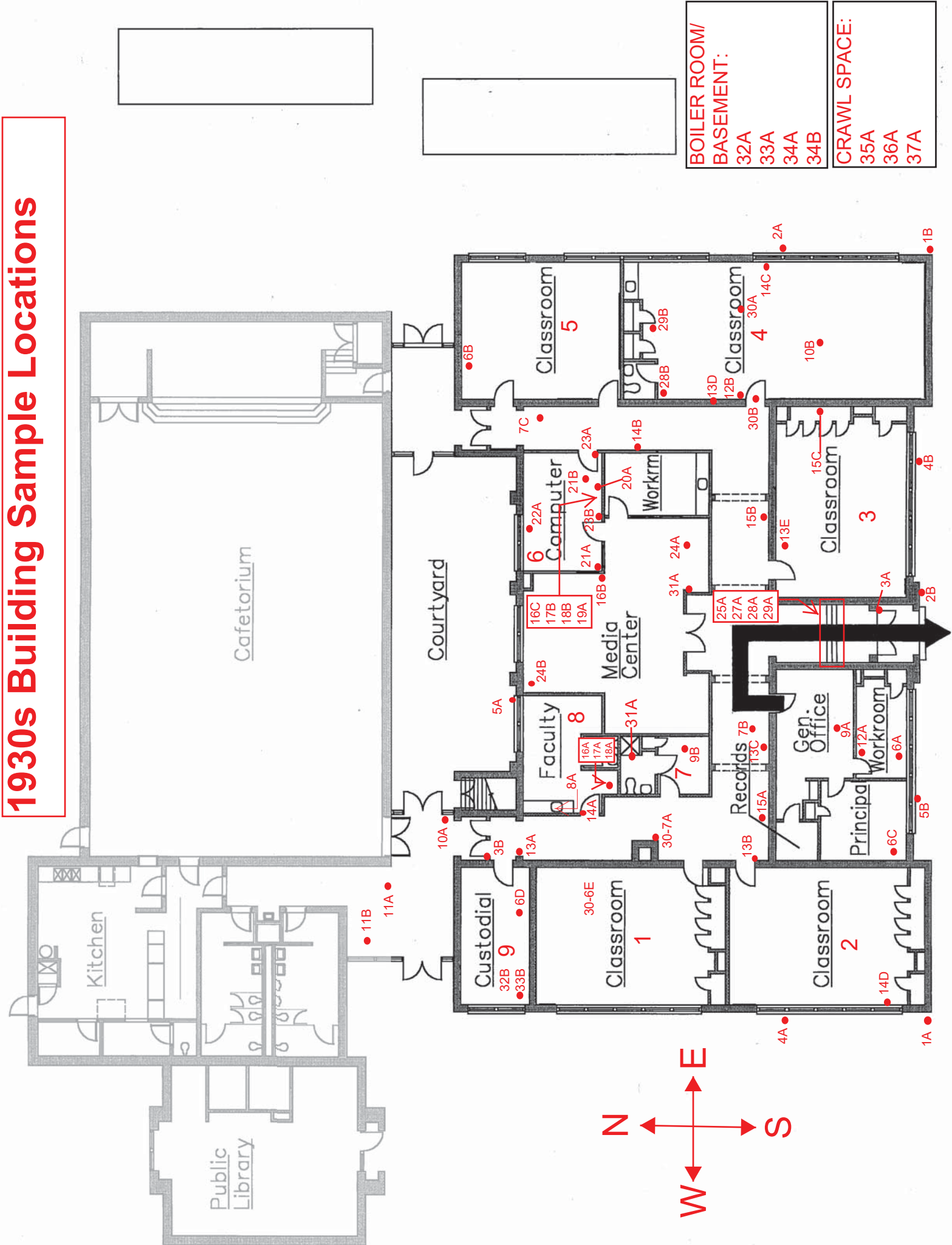
Under this scope of services, F&R assumes no responsibility regarding response actions (e.g. O&M Plans, Encapsulation, Abatement, Removal, Tenant Notification, etc.) initiated as a result of these findings. F&R assumes no liability for the duties and responsibilities of the Client with respect to compliance with appropriate regulations. Compliance with regulations and response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements and should be performed by appropriately qualified and licensed/accredited personnel, as warranted.

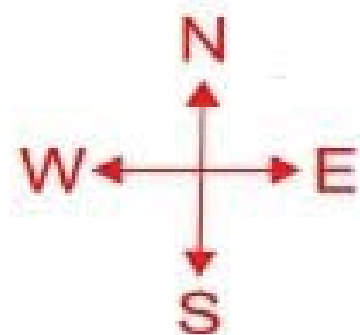
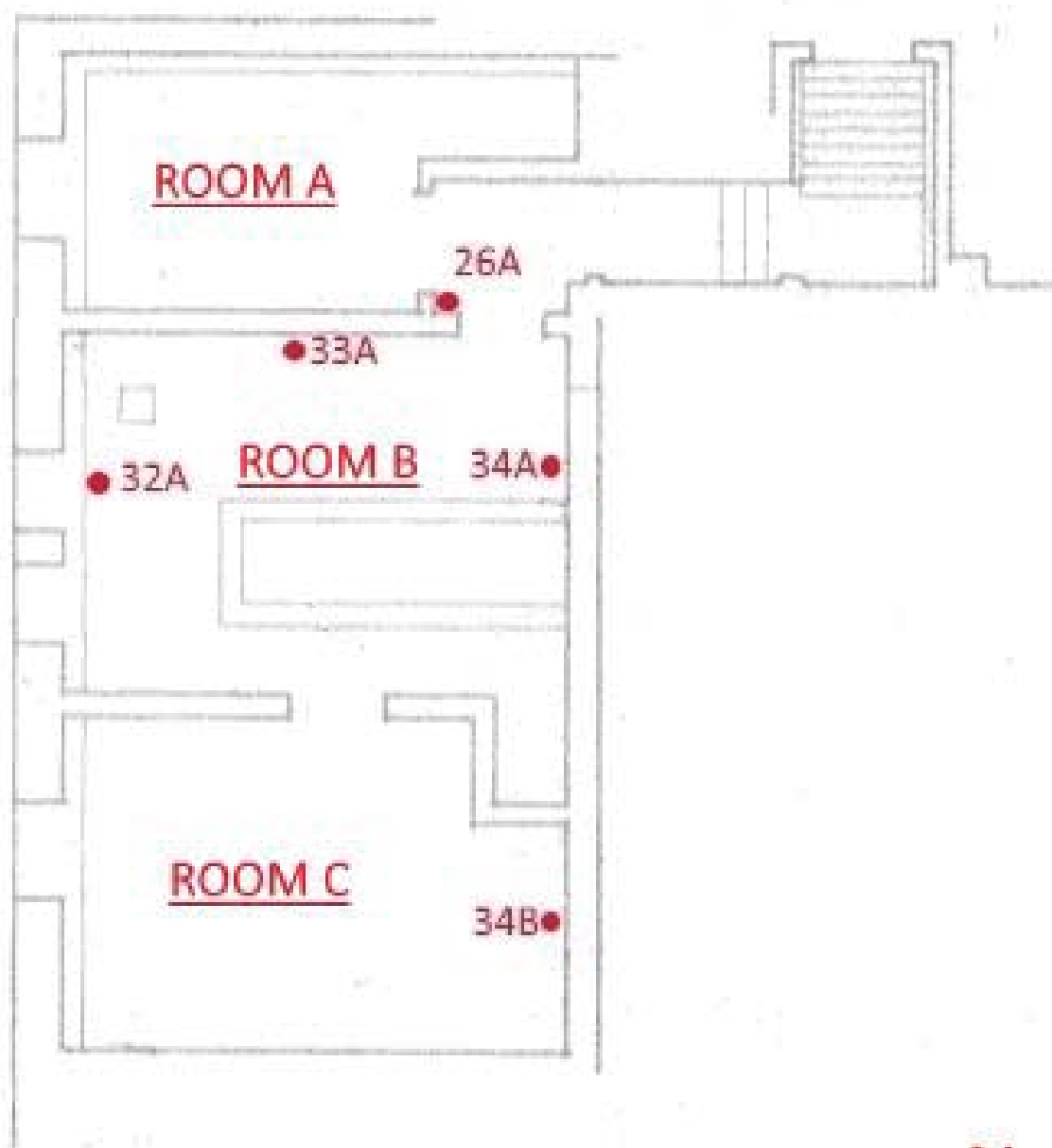
Froehling & Robertson, Inc. by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to local, state, or federal public agencies conditions at the site that may present a potential danger to public health, safety, or the environment. The Client agrees to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, information that may be necessary to prevent danger to public health, safety, or the environment. The contents of the report should not be construed in any way as a recommendation to purchase, sell, or develop the project site. F&R retains the right to revise this report if new information is later discovered or made available. The report must be presented in its entirety.

Appendix B

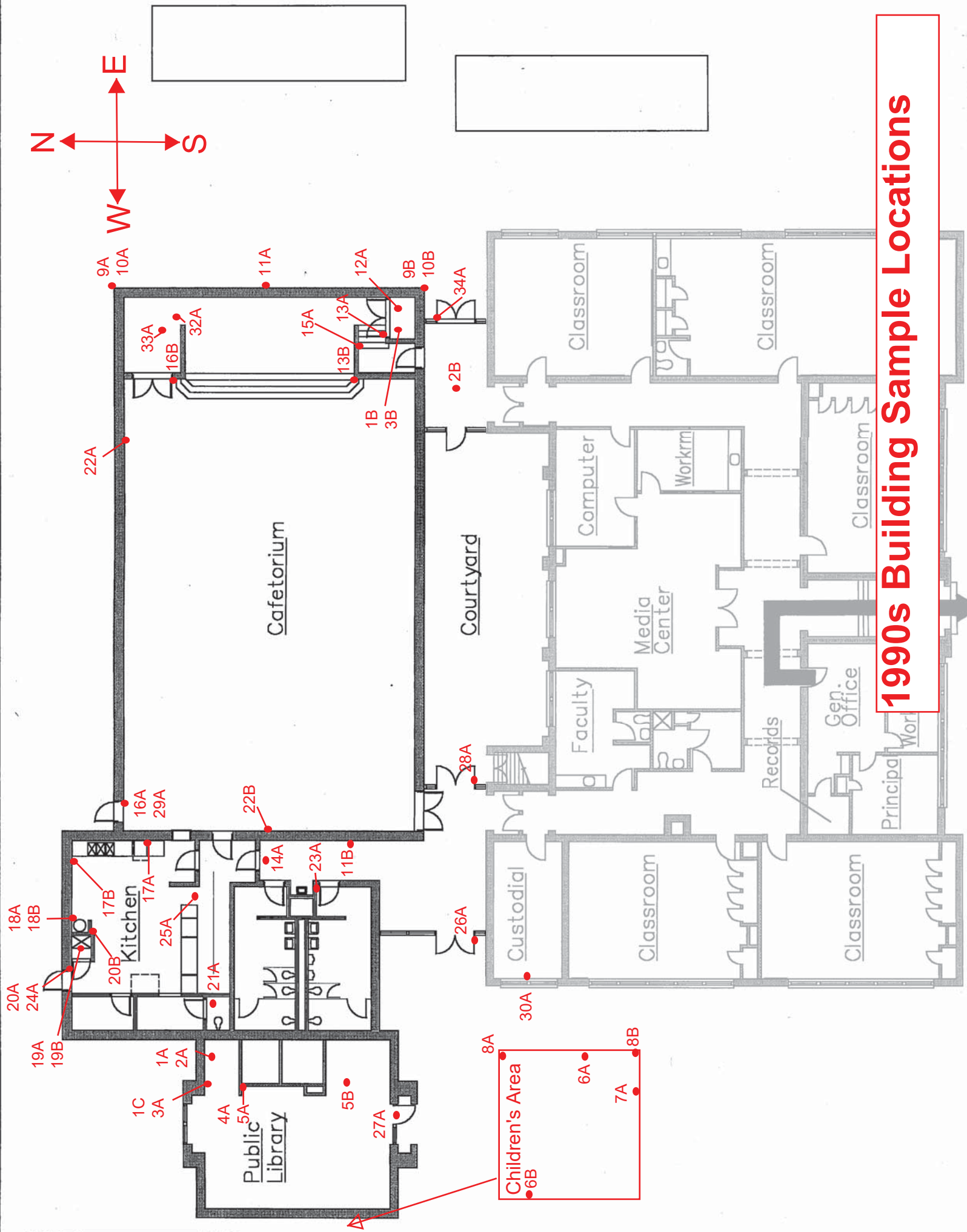
Facility Sketch:
Sample Locations

1930s Building Sample Locations





1930s Basement Sample Locations



Appendix F

Explanation of XRF Data Table

XRF Data Table

XRF Performance Characteristic Sheet

EXPLANATION OF XRF DATA TABLES for HEURESIS

Column	Description
Reading No	Sample numbers.
Date & Time	Date and Time of the reading.
Concentration	XRF reading of lead level (in milligrams per square centimeter (mg/cm ²)).
Units	Unit of measure that the XRF uses to report readings: mg/cm ² .
Result	Result of the reading: NEG = negative POS = positive
Site	Location of the Project.
Floor	Building Floor the reading was collected on.
Room	Identified Room on the corresponding Floor.
Side	Side within the corresponding Room where the specific reading was collected.
Substrate	The type of material underlying the paint or coating.
Component	Structural or design element the reading was collected from.
Color	Color of the coated surface.

System Info
Company Heuresis Corp.
Model Pb200i
Type XRF Lead Paint Analyzer
Serial Num. 1504
Software Ver. 3.011

Reading #	Concentration	Units	+/−	Result	DateTime	Component	Side	Substrate	Color	Room	Built Date	Floor	Project	Inspector
1	1.2	mg/cm2	0.2	Positive	8/12/2019 9:18	Calibration							Bent Mountain	Jesse Phillips
2	1.1	mg/cm2	0.2	Positive	8/12/2019 9:19	Calibration							Bent Mountain	Jesse Phillips
3	1.2	mg/cm2	0.2	Positive	8/12/2019 9:19	Calibration							Bent Mountain	Jesse Phillips
4	0.1	mg/cm2	0.4	Negative	8/12/2019 9:22	Wall	North	Gypsum Board	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
5	0.2	mg/cm2	0.4	Negative	8/12/2019 9:23	Wall	West	Gypsum Board	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
6	0.1	mg/cm2	0.4	Negative	8/12/2019 9:25	Wall	East	Gypsum Board	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
7	0.2	mg/cm2	0.4	Negative	8/12/2019 9:25	Wall	East	Gypsum Board	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
8	0.1	mg/cm2	0.4	Negative	8/12/2019 9:26	Wall	South	Gypsum Board	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
9	0.1	mg/cm2	0.4	Negative	8/12/2019 9:26	Ceiling	South	Gypsum Board	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
10	-0.2	mg/cm2	0.5	Negative	8/12/2019 9:27	Wall	East	CMU	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
11	-0.1	mg/cm2	0.4	Negative	8/12/2019 9:28	Door Casing	South	Wood	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
12	0.1	mg/cm2	0.5	Negative	8/12/2019 9:28	Door	South	Metal	Red	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
13	-0.1	mg/cm2	0.4	Negative	8/12/2019 9:29	Door	South	Wood	Varnish/Stain	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
14	0.2	mg/cm2	0.5	Negative	8/12/2019 9:30	Door Casing	South	Metal	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
15	-0.2	mg/cm2	0.4	Negative	8/12/2019 9:31	Shelf	East	Wood	Varnish/Stain	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
16	0	mg/cm2	0.5	Negative	8/12/2019 9:31	Shelf	North	Metal	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
17	0.1	mg/cm2	0.4	Negative	8/12/2019 9:32	Ceiling	N/A	Gypsum Board	White	Library Bathroom	1990+	First	Bent Mountain	Jesse Phillips
18	0.1	mg/cm2	0.5	Negative	8/12/2019 9:33	Wall	North	Gypsum Board	Beige	Library Bathroom	1990+	First	Bent Mountain	Jesse Phillips
19	0.1	mg/cm2	0.4	Negative	8/12/2019 9:34	Wall	North	Gypsum Board	Beige	Library IT Closet	1990+	First	Bent Mountain	Jesse Phillips
20	-0.1	mg/cm2	0.5	Negative	8/12/2019 9:34	Wall	East	CMU	Beige	Library IT Closet	1990+	First	Bent Mountain	Jesse Phillips
21	0.1	mg/cm2	0.4	Negative	8/12/2019 9:36	Wall	West	Gypsum Board	Beige	Library - Childrens Area	1990+	First	Bent Mountain	Jesse Phillips
22	0.1	mg/cm2	0.4	Negative	8/12/2019 9:36	Wall	North	Gypsum Board	Beige	Library - Childrens Area	1990+	First	Bent Mountain	Jesse Phillips
23	0.1	mg/cm2	0.5	Negative	8/12/2019 9:36	Door Casing	East	Wood	Beige	Library - Childrens Area	1990+	First	Bent Mountain	Jesse Phillips
24	0.1	mg/cm2	0.4	Negative	8/12/2019 9:37	Window Casing	West	Wood	Beige	Library - Childrens Area	1990+	First	Bent Mountain	Jesse Phillips
25	0	mg/cm2	0.4	Negative	8/12/2019 9:38	Window Sill	South	Wood	Beige	Library - Childrens Area	1990+	First	Bent Mountain	Jesse Phillips
26	0	mg/cm2	0.5	Negative	8/12/2019 9:38	Window Casing	South	Wood	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
27	0.1	mg/cm2	0.4	Negative	8/12/2019 9:39	Window Sill	South	Wood	Beige	Library - Main	1990+	First	Bent Mountain	Jesse Phillips
28	-0.1	mg/cm2	0.4	Negative	8/12/2019 9:41	Window Casing	South	Wood	White	Library Exterior	1990+	First	Bent Mountain	Jesse Phillips
29	0	mg/cm2	0.4	Negative	8/12/2019 9:41	Window Sill	South	Wood	White	Library Exterior	1990+	First	Bent Mountain	Jesse Phillips
30	0.1	mg/cm2	0.5	Negative	8/12/2019 9:42	Door	South	Metal	Red	Library Exterior	1990+	First	Bent Mountain	Jesse Phillips
31	-0.1	mg/cm2	0.4	Negative	8/12/2019 9:42	Door Casing	South	Wood	White	Library Exterior	1990+	First	Bent Mountain	Jesse Phillips
32	0.2	mg/cm2	0.4	Negative	8/12/2019 9:43	Window Casing	South	Metal	White	Library Exterior	1990+	First	Bent Mountain	Jesse Phillips
33	-0.1	mg/cm2	0.4	Negative	8/12/2019 9:44	Gutter Downspout	North	Metal	White	Library Exterior	1990+	First	Bent Mountain	Jesse Phillips
34	8.5	mg/cm2	0.5	Positive	8/12/2019 9:50	Door Casing	North	Wood	Blue	West Foyer	1930	First	Bent Mountain	Jesse Phillips
35	10.9	mg/cm2	0.5	Positive	8/12/2019 9:52	Door Transom	North	Wood	Blue	West Foyer	1930	First	Bent Mountain	Jesse Phillips
36	12.1	mg/cm2	0.5	Positive	8/12/2019 9:54	Window Sill	West	Concrete	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
37	2	mg/cm2	0.4	Positive	8/12/2019 9:56	Window Mullion	South	Metal	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
38	0.2	mg/cm2	0.4	Negative	8/12/2019 9:56	Window Well	South	Metal	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
39	8.7	mg/cm2	0.5	Positive	8/12/2019 9:57	Door Casing	South	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
40	-0.1	mg/cm2	0.4	Negative	8/12/2019 9:58	Door	South	Wood	Red	Exterior	1930	First	Bent Mountain	Jesse Phillips
41	0.1	mg/cm2	0.4	Negative	8/12/2019 9:58	Door	South	Wood	Red	Exterior	1930	First	Bent Mountain	Jesse Phillips
42	6.4	mg/cm2	0.5	Positive	8/12/2019 10:00	Wall - White Masonry Detail	North	Concrete	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
43	0.9	mg/cm2	0.3	NULL	8/12/2019 10:03	Window Well	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
44	0.6	mg/cm2	0.2	Negative	8/12/2019 10:03	Window Well	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
45	3.4	mg/cm2	0.5	Positive	8/12/2019 10:04	Window Well	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
46	-0.1	mg/cm2	0.5	Negative	8/12/2019 10:05	Window Sash	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
47	0.4	mg/cm2	0.4	Negative	8/12/2019 10:06	Window Sash	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
48	1.8	mg/cm2	0.5	Positive	8/12/2019 10:06	Window Sash	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
49	9	mg/cm2	0.5	Positive	8/12/2019 10:07	Window Casing	West	Wood	White	Exterior	1930	First	Bent Mountain	Jesse Phillips
50	0.3	mg/cm2	0.4	Negative	8/12/2019 10:10	Wall	West	Plaster	White	1	1930	First	Bent Mountain	Jesse Phillips
51	0.2	mg/cm2	0.5	Negative	8/12/2019 10:10	Wall	North	Plaster	White	1	1930	First	Bent Mountain	Jesse Phillips
52	0.2	mg/cm2	0.5	Negative	8/12/2019 10:11	Wall Wall below chair rail	North	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
53	0.3	mg/cm2	0.4	Negative	8/12/2019 10:11	Wall Wall below chair rail	East	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
54	6.7	mg/cm2	0.5	Positive	8/12/2019 10:12	Chair Rail - replacement piece	South	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
55	0.3	mg/cm2	0.4	Negative	8/12/2019 10:12	Chair Rail	East	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
56	0.1	mg/cm2	0.4	Negative	8/12/2019 10:13	Bulletin Board - Large	East	Cork	White	1	1930	First	Bent Mountain	Jesse Phillips
57	0.1	mg/cm2	0.5	Negative	8/12/2019 10:14	Bulletin Board casing	East	Wood	Beige	1	1930	First	Bent Mountain	Jesse Phillips
58	0.1	mg/cm2	0.4	Negative	8/12/2019 10:15	Chalk Board Casing	East	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
59	0.1	mg/cm2	0.4	Negative	8/12/2019 10:15	Shelf	South	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
60	0	mg/cm2	0.4	Negative	8/12/2019 10:16	Shelf Beadboard	South	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips

Reading #	Concentration	Units	±/±	Result	Datetime	Component	Side	Substrate	Color	Room	Built Date	Floor	Project	Inspector
61	0	mg/cm2	0.4	Negative	8/12/2019 10:16	Shelf Casing	South	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
62	0.1	mg/cm2	0.4	Negative	8/12/2019 10:17	Door Closet	South	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
63	0.2	mg/cm2	0.4	Negative	8/12/2019 10:18	Door Closet Casing	South	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
64	0.1	mg/cm2	0.5	Negative	8/12/2019 10:18	Window Sill	West	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
65	0.7	mg/cm2	0.2	Negative	8/12/2019 10:19	Window Sash	West	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
66	0	mg/cm2	0.4	Negative	8/12/2019 10:21	Window Casing	West	Wood	Blue	1	1930	First	Bent Mountain	Jesse Phillips
67	0.5	mg/cm2	0.3	Negative	8/12/2019 10:21	Door Casing	East	Metal	Blue	1	1930	First	Bent Mountain	Jesse Phillips
68	0	mg/cm2	0.4	Negative	8/12/2019 10:23	Door	East	Wood	Varnish/Stain	1	1930	First	Bent Mountain	Jesse Phillips
69	0.5	mg/cm2	0.3	Negative	8/12/2019 10:26	Ceiling	N/A	Plaster	White	1	1930	First	Bent Mountain	Jesse Phillips
70	0.1	mg/cm2	0.5	Negative	8/12/2019 10:26	Floor	N/A	Wood	Varnish/Stain	1	1930	First	Bent Mountain	Jesse Phillips
71	0.1	mg/cm2	0.4	Negative	8/12/2019 10:28	Wall	West	Plaster	White	2	1930	First	Bent Mountain	Jesse Phillips
72	0.2	mg/cm2	0.4	Negative	8/12/2019 10:30	Chair Rail	South	Wood	Blue	2	1930	First	Bent Mountain	Jesse Phillips
73	0.3	mg/cm2	0.4	Negative	8/12/2019 10:31	Closet Wall	South	Wood	Gray	2	1930	First	Bent Mountain	Jesse Phillips
74	0.3	mg/cm2	0.4	Negative	8/12/2019 10:31	Closet Shelf	South	Wood	Gray	2	1930	First	Bent Mountain	Jesse Phillips
75	0.3	mg/cm2	0.4	Negative	8/12/2019 10:31	Closet Chair Rail	South	Wood	Gray	2	1930	First	Bent Mountain	Jesse Phillips
76	0.1	mg/cm2	0.5	Negative	8/12/2019 10:32	Closet Wall	South	Plaster	Off-White	2	1930	First	Bent Mountain	Jesse Phillips
77	0.3	mg/cm2	0.4	Negative	8/12/2019 10:33	Wall Wall below chair rail	East	Plaster	Off-White	2	1930	First	Bent Mountain	Jesse Phillips
78	0.5	mg/cm2	0.3	Negative	8/12/2019 10:34	Wall Wall above chair rail	North	Plaster	White	3	1930	First	Bent Mountain	Jesse Phillips
79	2.5	mg/cm2	0.4	Positive	8/12/2019 10:35	Bulletin Board Above Chalkboard	West	Cork	White	3	1930	First	Bent Mountain	Jesse Phillips
80	2.6	mg/cm2	0.4	Positive	8/12/2019 10:36	Bulletin Board Above Chalkboard	North	Cork	White	3	1930	First	Bent Mountain	Jesse Phillips
81	0.3	mg/cm2	0.4	Negative	8/12/2019 10:37	Bulletin Board -	North	Wood	Blue	3	1930	First	Bent Mountain	Jesse Phillips
82	0.2	mg/cm2	0.4	Negative	8/12/2019 10:37	Bulletin Board -	North	Wood	Blue	3	1930	First	Bent Mountain	Jesse Phillips
83	0.2	mg/cm2	0.4	Negative	8/12/2019 10:37	Bulletin Board -	North	Wood	Blue	3	1930	First	Bent Mountain	Jesse Phillips
84	0.3	mg/cm2	0.4	Negative	8/12/2019 10:38	Cabinet Door	East	Wood	Blue	3	1930	First	Bent Mountain	Jesse Phillips
85	0.1	mg/cm2	0.4	Negative	8/12/2019 10:40	Crown Molding	West	Wood	Blue	3	1930	First	Bent Mountain	Jesse Phillips
86	0.1	mg/cm2	0.4	Negative	8/12/2019 10:41	Door	West	Wood	Varnish/Stain	4	1930	First	Bent Mountain	Jesse Phillips
87	0.5	mg/cm2	0.3	Negative	8/12/2019 10:42	Door Casing	West	Metal	Blue	4	1930	First	Bent Mountain	Jesse Phillips
88	-0.1	mg/cm2	0.5	Negative	8/12/2019 10:43	Wall	West	Plaster	White	4	1930	First	Bent Mountain	Jesse Phillips
89	0.1	mg/cm2	0.4	Negative	8/12/2019 10:43	Wall	East	Plaster	White	4	1930	First	Bent Mountain	Jesse Phillips
90	0	mg/cm2	0.4	Negative	8/12/2019 10:44	Window Sill	East	Wood	Blue	4	1930	First	Bent Mountain	Jesse Phillips
91	0.7	mg/cm2	0.2	Negative	8/12/2019 10:44	Window Sash	East	Wood	Blue	4	1930	First	Bent Mountain	Jesse Phillips
92	0.2	mg/cm2	0.5	Negative	8/12/2019 10:45	Window Mullion	East	Wood	Blue	4	1930	First	Bent Mountain	Jesse Phillips
93	12.1	mg/cm2	0.5	Positive	8/12/2019 10:46	Window Parting Bead	East	Wood	White	4	1930	First - Exterior side	Bent Mountain	Jesse Phillips
94	0.1	mg/cm2	0.4	Negative	8/12/2019 10:47	Wall	East	Plaster	White	4	1930	First	Bent Mountain	Jesse Phillips
95	0.1	mg/cm2	0.5	Negative	8/12/2019 10:48	Wall	North	Gypsum Board	White	4	1930	First	Bent Mountain	Jesse Phillips
96	0	mg/cm2	0.4	Negative	8/12/2019 10:56	Ceiling	N/A	Plaster	White	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
97	0.6	mg/cm2	0.3	Negative	8/12/2019 10:56	Ceiling	N/A	Plaster	White	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
98	0.1	mg/cm2	0.4	Negative	8/12/2019 10:57	Wall	South	Plaster	White	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
99	0.2	mg/cm2	0.5	Negative	8/12/2019 10:59	Shelf	East	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
100	0.1	mg/cm2	0.4	Negative	8/12/2019 11:00	Chair Rail	East	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
101	-0.2	mg/cm2	0.4	Negative	8/12/2019 11:02	Door Closet	East	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
102	0.2	mg/cm2	0.4	Negative	8/12/2019 11:03	Door Closet Casing	East	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
103	0	mg/cm2	0.4	Negative	8/12/2019 11:03	Window Sill	South	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
104	0.2	mg/cm2	0.4	Negative	8/12/2019 11:03	Window Sash	South	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
105	0	mg/cm2	0.4	Negative	8/12/2019 11:04	Window Mullion	South	Wood	Blue	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
106	-0.1	mg/cm2	0.4	Negative	8/12/2019 11:04	Closet Wall	East	Wood	Gray	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
107	0.1	mg/cm2	0.4	Negative	8/12/2019 11:05	Closet Chair Rail	East	Wood	Gray	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
108	-0.1	mg/cm2	0.5	Negative	8/12/2019 11:06	Closet Wall	East	Plaster	Gray	Office - Workroom	1930	First	Bent Mountain	Jesse Phillips
109	-0.1	mg/cm2	0.5	Negative	8/12/2019 11:09	Ceiling	N/A	Plaster	White	Principals Office	1930	First	Bent Mountain	Jesse Phillips
110	0.2	mg/cm2	0.5	Negative	8/12/2019 11:10	Wall	North	Plaster	Brown	Principals Office	1930	First	Bent Mountain	Jesse Phillips
111	0.1	mg/cm2	0.4	Negative	8/12/2019 11:10	Wall	East	Plaster	Brown	Principals Office	1930	First	Bent Mountain	Jesse Phillips
112	0.2	mg/cm2	0.5	Negative	8/12/2019 11:11	Wall	South	Plaster	Brown	Principals Office	1930	First	Bent Mountain	Jesse Phillips
113	-0.4	mg/cm2	0.5	Negative	8/12/2019 11:11	Wall	West	Plaster	Brown	Principals Office	1930	First	Bent Mountain	Jesse Phillips
114	0	mg/cm2	0.4	Negative	8/12/2019 11:12	Window Sill	South	Wood	Off-White	Principals Office	1930	First	Bent Mountain	Jesse Phillips
115	0.1	mg/cm2	0.4	Negative	8/12/2019 11:12	Window Sash	South	Wood	Off-White	Principals Office	1930	First	Bent Mountain	Jesse Phillips
116	0.2	mg/cm2	0.5	Negative	8/12/2019 11:13	Window Mullion	South	Wood	Off-White	Principals Office	1930	First	Bent Mountain	Jesse Phillips
117	0.1	mg/cm2	0.4	Negative	8/12/2019 11:13	Window Casing	South	Wood	Off-White	Principals Office	1930	First	Bent Mountain	Jesse Phillips
118	0	mg/cm2	0.4	Negative	8/12/2019 11:15	Floor	N/A	Wood	Varnish/Stain	Main Office - General	1930	First	Bent Mountain	Jesse Phillips
119	0.2	mg/cm2	0.5	Negative	8/12/2019 11:16	Wall	North	Plaster	White	Media Center	1930	First	Bent Mountain	Jesse Phillips
120	0.1	mg/cm2	0.4	Negative	8/12/2019 11:17	Wall	East	Gypsum Board	White	Media Center	1930	First	Bent Mountain	Jesse Phillips
121	0.2	mg/cm2	0.4	Negative	8/12/2019 11:18	Wall	West	Gypsum Board	White	Media Center	1930	First	Bent Mountain	Jesse Phillips
122	0.1	mg/cm2	0.4	Negative	8/12/2019 11:19	Wall	South	Gypsum Board	White	Media Center	1930	First	Bent Mountain	Jesse Phillips
123	0.1	mg/cm2	0.5	Negative	8/12/2019 11:20	Door Casing	South	Metal	Blue	Media Center	1930	First	Bent Mountain	Jesse Phillips
124	0	mg/cm2	0.4	Negative	8/12/2019 11:22	Window Sill	North	Wood	Blue	6	1930	First	Bent Mountain	Jesse Phillips
125	1.4	mg/cm2	0.3	Positive	8/12/2019 11:22	Window Sash	North	Wood	Blue	6	1930	First	Bent Mountain	Jesse Phillips
126	0.4	mg/cm2	0.4	Negative	8/12/2019 11:23	Window Sash	North	Wood	Blue	6	1930	First	Bent Mountain	Jesse Phillips
127	1.4	mg/cm2	0.3	Positive	8/12/2019 11:23	Window Sash	North	Wood	Blue	6	1930	First	Bent Mountain	Jesse Phillips

Reading #	Concentration	Units	±/±	Result	Datetime	Component	Side	Substrate	Color	Room	Built Date	Floor	Project	Inspector
128	0.3	mg/cm2	0.4	Negative	8/12/2019 11:24	Window Mullion	North	Wood	Blue	6	1930	First	Bent Mountain	Jesse Phillips
129	1	mg/cm2	0.2	Positive	8/12/2019 11:25	Window Sash	North	Wood	Blue	Media Center	1930	First	Bent Mountain	Jesse Phillips
130	0.4	mg/cm2	0.4	Negative	8/12/2019 11:26	Window Sash	North	Wood	Blue	Media Center	1930	First	Bent Mountain	Jesse Phillips
131	1.4	mg/cm2	0.3	Positive	8/12/2019 11:26	Window Sash	North	Wood	Blue	Media Center	1930	First	Bent Mountain	Jesse Phillips
132	0.1	mg/cm2	0.5	Negative	8/12/2019 11:28	Window Casing	East	Metal	Blue	Media Center	1930	First	Bent Mountain	Jesse Phillips
133	0	mg/cm2	0.4	Negative	8/12/2019 11:29	Door	North	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
134	0	mg/cm2	0.4	Negative	8/12/2019 11:29	Door	North	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
135	0	mg/cm2	0.4	Negative	8/12/2019 11:29	Door	North	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
136	11.5	mg/cm2	0.5	Positive	8/12/2019 11:30	Door Mullion	North	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
137	0.3	mg/cm2	0.4	Negative	8/12/2019 11:30	Door Casing	North	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
138	0.3	mg/cm2	0.5	Negative	8/12/2019 11:31	Wall	North	Plaster	White	East Hallway	1930	First	Bent Mountain	Jesse Phillips
139	0	mg/cm2	0.5	Negative	8/12/2019 11:32	Wall	West	Plaster	White	East Hallway	1930	First	Bent Mountain	Jesse Phillips
140	0.1	mg/cm2	0.5	Negative	8/12/2019 11:32	Wall	West	Concrete	White	East Hallway	1930	First	Bent Mountain	Jesse Phillips
141	0.1	mg/cm2	0.5	Negative	8/12/2019 11:33	Wall	East	Plaster	White	East Hallway	1930	First	Bent Mountain	Jesse Phillips
142	-0.3	mg/cm2	0.5	Negative	8/12/2019 11:33	Wall	South	Plaster	White	East Hallway	1930	First	Bent Mountain	Jesse Phillips
143	0	mg/cm2	0.4	Negative	8/12/2019 11:34	Corner Trim	North	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
144	-0.1	mg/cm2	0.4	Negative	8/12/2019 11:35	Column	South	Wood	Blue	East Hallway	1930	First	Bent Mountain	Jesse Phillips
145	0.2	mg/cm2	0.4	Negative	8/12/2019 11:36	Door Casing	South	Wood	Blue	South Hallway	1930	First	Bent Mountain	Jesse Phillips
146	0.4	mg/cm2	0.4	Negative	8/12/2019 11:37	Door Casing	South	Wood	Blue	South Hallway	1930	First	Bent Mountain	Jesse Phillips
147	0	mg/cm2	0.4	Negative	8/12/2019 11:37	Door	South	Wood	Red	South Hallway	1930	First	Bent Mountain	Jesse Phillips
148	0.2	mg/cm2	0.5	Negative	8/12/2019 11:38	Wall Wall below chair rail	South	Wood	Blue	South Hallway	1930	First	Bent Mountain	Jesse Phillips
149	0.3	mg/cm2	0.4	Negative	8/12/2019 11:38	Wall Wall above chair rail	South	Plaster	White	South Hallway	1930	First	Bent Mountain	Jesse Phillips
150	0.4	mg/cm2	0.4	Negative	8/12/2019 11:39	Chair Rail	South	Wood	Blue	South Hallway	1930	First	Bent Mountain	Jesse Phillips
151	0.1	mg/cm2	0.4	Negative	8/12/2019 11:51	Wall	North	Gypsum Board	White	7	1930	First	Bent Mountain	Jesse Phillips
152	0.1	mg/cm2	0.5	Negative	8/12/2019 11:51	Wall	West	Gypsum Board	White	7	1930	First	Bent Mountain	Jesse Phillips
153	0	mg/cm2	0.5	Negative	8/12/2019 11:53	Panel Access	West	Metal	White	7 - Bathroom	1930	First	Bent Mountain	Jesse Phillips
154	0	mg/cm2	0.4	Negative	8/12/2019 11:53	Chair Rail	North	Wood	White	7 - Bathroom	1930	First	Bent Mountain	Jesse Phillips
155	0.1	mg/cm2	0.4	Negative	8/12/2019 11:54	Ceiling	N/A	Gypsum Board	White	7 - Bathroom	1930	First	Bent Mountain	Jesse Phillips
156	0	mg/cm2	0.5	Negative	8/12/2019 11:54	Door Casing	South	Metal	Blue	7 - Bathroom	1930	First	Bent Mountain	Jesse Phillips
157	-0.1	mg/cm2	0.4	Negative	8/12/2019 11:55	Door	South	Wood	Varnish/Stain	7 - Bathroom	1930	First	Bent Mountain	Jesse Phillips
158	0.1	mg/cm2	0.4	Negative	8/12/2019 11:57	Window Sill	North	Wood	Blue	8	1930	First	Bent Mountain	Jesse Phillips
159	1.3	mg/cm2	0.2	Positive	8/12/2019 11:57	Window Sash	North	Wood	Blue	8	1930	First	Bent Mountain	Jesse Phillips
160	1.2	mg/cm2	0.2	Positive	8/12/2019 11:58	Window Sash	North	Brick	Blue	8	1930	First	Bent Mountain	Jesse Phillips
161	-0.2	mg/cm2	0.5	Negative	8/12/2019 12:00	Wall	North	Brick	Brown	9	1930	First	Bent Mountain	Jesse Phillips
162	0	mg/cm2	0.5	Negative	8/12/2019 12:00	Wall	North	Brick	White	9	1930	First	Bent Mountain	Jesse Phillips
163	0.2	mg/cm2	0.5	Negative	8/12/2019 12:01	Wall	South	Brick	White	9	1930	First	Bent Mountain	Jesse Phillips
164	0.2	mg/cm2	0.4	Negative	8/12/2019 12:01	Wall	West	Gypsum Board	White	9	1930	First	Bent Mountain	Jesse Phillips
165	0.7	mg/cm2	0.2	Negative	8/12/2019 12:04	Ceiling	N/A	Plaster	White	9	1930	First	Bent Mountain	Jesse Phillips
166	0.1	mg/cm2	0.5	Negative	8/12/2019 12:05	Floor	N/A	Concrete	Maroon	9	1930	First	Bent Mountain	Jesse Phillips
167	0.2	mg/cm2	0.5	Negative	8/12/2019 12:07	Floor	N/A	Concrete	Maroon	9	1930	First	Bent Mountain	Jesse Phillips
168	0.1	mg/cm2	0.4	Negative	8/12/2019 12:07	Window Sill	West	Wood	Beige	9	1930	First	Bent Mountain	Jesse Phillips
169	0.2	mg/cm2	0.4	Negative	8/12/2019 12:08	Window Sash	West	Wood	Beige	9	1930	First	Bent Mountain	Jesse Phillips
170	0.9	mg/cm2	0.2	Negative	8/12/2019 12:09	Window Sash	West	Wood	Beige	9	1930	First	Bent Mountain	Jesse Phillips
171	0	mg/cm2	0.5	Negative	8/12/2019 12:10	Window Mullion	West	Wood	Beige	9	1930	First	Bent Mountain	Jesse Phillips
172	0	mg/cm2	0.4	Negative	8/12/2019 12:11	Panel Mounting	North	Gypsum Board	Gray	9	1930	First	Bent Mountain	Jesse Phillips
173	0.1	mg/cm2	0.4	Negative	8/12/2019 12:12	Pipe Domestic Water	South	Paper Jacketing	White	9	1930	First	Bent Mountain	Jesse Phillips
174	0.2	mg/cm2	0.5	Negative	8/12/2019 12:13	Pipe Vent	North	Metal	Brown	9	1930	First	Bent Mountain	Jesse Phillips
175	0.2	mg/cm2	0.5	Negative	8/12/2019 12:15	Door	North	Wood	White	Boiler/Mech/Utility	1930	First	Bent Mountain	Jesse Phillips
176	0.1	mg/cm2	0.4	Negative	8/12/2019 12:15	Door Casing	North	Wood	White	Boiler/Mech/Utility	1930	Stairwell	Bent Mountain	Jesse Phillips
177	7.2	mg/cm2	0.5	Positive	8/12/2019 12:16	Fascia	North	Wood	White	Boiler/Mech/Utility	1930	Stairwell	Bent Mountain	Jesse Phillips
178	14.9	mg/cm2	0.5	Positive	8/12/2019 12:16	Roof Top	North	Metal	Red	Boiler/Mech/Utility	1930	Stairwell	Bent Mountain	Jesse Phillips
179	2.6	mg/cm2	0.5	Positive	8/12/2019 12:18	Wall	North	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room B	Bent Mountain	Jesse Phillips
180	1.3	mg/cm2	0.2	Positive	8/12/2019 12:19	Wall	North	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room B	Bent Mountain	Jesse Phillips
181	1.1	mg/cm2	0.2	Positive	8/12/2019 12:20	Wall	South	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room B	Bent Mountain	Jesse Phillips
182	0.1	mg/cm2	0.5	Negative	8/12/2019 12:21	Wall	East	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room C	Bent Mountain	Jesse Phillips
183	0.2	mg/cm2	0.5	Negative	8/12/2019 12:22	Wall	West	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room C	Bent Mountain	Jesse Phillips
184	0.1	mg/cm2	0.5	Negative	8/12/2019 12:22	Wall	South	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room C	Bent Mountain	Jesse Phillips
185	0.4	mg/cm2	0.4	Negative	8/12/2019 12:22	Wall	North	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room C	Bent Mountain	Jesse Phillips
186	-0.1	mg/cm2	0.5	Negative	8/12/2019 12:24	Ceiling	N/A	Plaster	White	Boiler/Mech/Utility	1930	Basement - Room C	Bent Mountain	Jesse Phillips
187	0.4	mg/cm2	0.4	Negative	8/12/2019 12:24	Ceiling	N/A	Plaster	White	Boiler/Mech/Utility	1930	Basement - Room B	Bent Mountain	Jesse Phillips
188	0.1	mg/cm2	0.5	Negative	8/12/2019 12:25	Floor	N/A	Concrete	Gray	Boiler/Mech/Utility	1930	Basement - Room B	Bent Mountain	Jesse Phillips
189	0	mg/cm2	0.5	Negative	8/12/2019 12:25	Pipe Sewer	North	Metal	White	Boiler/Mech/Utility	1930	Basement - Room B	Bent Mountain	Jesse Phillips
190	10.3	mg/cm2	0.5	Positive	8/12/2019 12:26	Door	West	Wood	White	Boiler/Mech/Utility	1930	Basement - Room A	Bent Mountain	Jesse Phillips
191	0.4	mg/cm2	0.4	Negative	8/12/2019 12:26	Door Casing	West	Wood	White	Boiler/Mech/Utility	1930	Basement - Room A	Bent Mountain	Jesse Phillips
192	0	mg/cm2	0.5	Negative	8/12/2019 12:27	Wall	West	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room A	Bent Mountain	Jesse Phillips
193	-0.1	mg/cm2	0.5	Negative	8/12/2019 12:28	Wall	North	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room A	Bent Mountain	Jesse Phillips
194	1.3	mg/cm2	0.3	NULL	8/12/2019 12:28	Wall	East	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room A	Bent Mountain	Jesse Phillips

Reading #	Concentration	Units	±/±	Result	Datetime	Component	Side	Substrate	Color	Room	Built Date	Floor	Project	Inspector
195	1.1	mg/cm2	0.2	Positive	8/12/2019 12:29	Wall	East	Concrete	White	Boiler/Mech/Utility	1990	Basement - Room A	Bent Mountain	Jesse Phillips
196	0.3	mg/cm2	0.5	Negative	8/12/2019 12:30	Wall	South	Concrete	White	Boiler/Mech/Utility	1930	Basement - Room A	Bent Mountain	Jesse Phillips
197	0.1	mg/cm2	0.5	Negative	8/12/2019 12:30	Stair Tread	N/A	Concrete	Gray	Boiler/Mech/Utility	1930	Basement Stairwell	Bent Mountain	Jesse Phillips
198	0.1	mg/cm2	0.5	Negative	8/12/2019 12:31	Stair Tread	N/A	Concrete	Yellow	Boiler/Mech/Utility	1930	Basement Stairwell	Bent Mountain	Jesse Phillips
199	3.1	mg/cm2	0.5	Positive	8/12/2019 12:32	Wall	East	Concrete	White	Boiler/Mech/Utility	1930	Basement Stairwell	Bent Mountain	Jesse Phillips
200	0.1	mg/cm2	0.5	Negative	8/12/2019 12:40	Framing	West	Metal	White	Exterior	1990	Exterior	Bent Mountain	Jesse Phillips
201	0.1	mg/cm2	0.5	Negative	8/12/2019 12:41	Door	West	Metal	Red	Exterior	1990	Exterior	Bent Mountain	Jesse Phillips
202	0	mg/cm2	0.5	Negative	8/12/2019 12:44	Door	West	Metal	Red	Foyer	1990	First	Bent Mountain	Jesse Phillips
203	0	mg/cm2	0.5	Negative	8/12/2019 12:45	Framing	West	Metal	Blue	Foyer	1990	First	Bent Mountain	Jesse Phillips
204	0.2	mg/cm2	0.5	Negative	8/12/2019 12:45	Framing	West	Metal	Blue	Foyer	1990	First	Bent Mountain	Jesse Phillips
205	0.1	mg/cm2	0.5	Negative	8/12/2019 12:45	Framing	East	Metal	Blue	Foyer	1990	First	Bent Mountain	Jesse Phillips
206	0	mg/cm2	0.5	Negative	8/12/2019 12:46	Door	East	Metal	Blue	Foyer	1990	First	Bent Mountain	Jesse Phillips
207	0.6	mg/cm2	0.3	Negative	8/12/2019 12:48	Door Casing	North	Metal	Blue	Foyer	1990	First	Bent Mountain	Jesse Phillips
208	0	mg/cm2	0.4	Negative	8/12/2019 12:49	Door	North	Wood	Varnish/Stain	Foyer	1990	First	Bent Mountain	Jesse Phillips
209	-0.3	mg/cm2	0.5	Negative	8/12/2019 12:50	Wall	South	CMU	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
210	-0.1	mg/cm2	0.5	Negative	8/12/2019 12:51	Wall	West	CMU	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
211	-0.1	mg/cm2	0.5	Negative	8/12/2019 12:51	Wall	North	CMU	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
212	-0.1	mg/cm2	0.5	Negative	8/12/2019 12:52	Wall	East	CMU	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
213	0.6	mg/cm2	0.3	Negative	8/12/2019 12:53	Door Casing	East	Metal	Brown	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
214	0.8	mg/cm2	0.2	Negative	8/12/2019 12:53	Floor	N/A	Wood	Varnish/Stain	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
215	0.6	mg/cm2	0.2	Negative	8/12/2019 12:54	Floor	N/A	Wood	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
216	0.6	mg/cm2	0.3	Negative	8/12/2019 12:55	Floor	N/A	Wood	Red	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
217	0.6	mg/cm2	0.3	NULL	8/12/2019 12:56	Floor	N/A	Wood	Black	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
218	0.6	mg/cm2	0.3	Negative	8/12/2019 12:57	Floor	N/A	Wood	Black	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
219	0	mg/cm2	0.5	Negative	8/12/2019 12:58	Stair Riser	East	Wood	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
220	-0.1	mg/cm2	0.5	Negative	8/12/2019 12:58	Wall	East	CMU	Black	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
221	-0.1	mg/cm2	0.4	Negative	8/12/2019 13:00	Wall	South	Gypsum Board	Black	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
222	0.1	mg/cm2	0.4	Negative	8/12/2019 13:01	Wall	South	Gypsum Board	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
223	0	mg/cm2	0.5	Negative	8/12/2019 13:02	Door Casing	South	Metal	Beige	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
224	0.1	mg/cm2	0.5	Negative	8/12/2019 13:03	Ladder Siderail	N/A	Metal	Beige	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
225	0.5	mg/cm2	0.3	Negative	8/12/2019 13:04	Door Casing	West	Metal	Brown	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
226	0.5	mg/cm2	0.4	Negative	8/12/2019 13:04	Door Casing	North	Metal	Brown	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
227	0.1	mg/cm2	0.5	Negative	8/12/2019 13:05	Door	North	Metal	Brown	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
228	0	mg/cm2	0.4	Negative	8/12/2019 13:06	Acoustical Panel	South	Fiberboard or Cementboard	White	Cafeterium	1990	First	Bent Mountain	Jesse Phillips
229	-0.2	mg/cm2	0.5	Negative	8/12/2019 13:07	Wall	South	CMU	White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
230	0	mg/cm2	0.5	Negative	8/12/2019 13:08	Wall	East	CMU	White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
231	-0.2	mg/cm2	0.5	Negative	8/12/2019 13:08	Wall	West	CMU	White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
232	0	mg/cm2	0.5	Negative	8/12/2019 13:09	Wall	North	CMU	White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
233	0.2	mg/cm2	0.4	Negative	8/12/2019 13:10	Ceiling	N/A	Gypsum Board	White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
234	0	mg/cm2	0.5	Negative	8/12/2019 13:10	Floor	N/A	Ceramic Tile	Unpainted	Kitchen	1990	First	Bent Mountain	Jesse Phillips
235	-0.1	mg/cm2	0.4	Negative	8/12/2019 13:12	Door Screen	North	Wood	Red	Kitchen	1990	First	Bent Mountain	Jesse Phillips
236	0.4	mg/cm2	0.4	Negative	8/12/2019 13:12	Door Casing	North	Metal	Off-White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
237	0	mg/cm2	0.5	Negative	8/12/2019 13:13	Door	West	Metal	Off-White	Kitchen	1990	First	Bent Mountain	Jesse Phillips
238	-0.1	mg/cm2	0.4	Negative	8/12/2019 13:15	Shelf	West	Wood	Off-White	Storage	1990	First	Bent Mountain	Jesse Phillips
239	-0.2	mg/cm2	0.5	Negative	8/12/2019 13:18	Wall	North	CMU	Off-White	Male Bathroom	1990	First	Bent Mountain	Jesse Phillips
240	0	mg/cm2	0.4	Negative	8/12/2019 13:20	Panel	N/A	Metal	Off-White	Male Bathroom	1990	First	Bent Mountain	Jesse Phillips
241	0.3	mg/cm2	0.5	Negative	8/12/2019 13:20	Floor	N/A	Ceramic Tile	Blue	Male Bathroom	1990	First	Bent Mountain	Jesse Phillips
242	0.2	mg/cm2	0.5	Negative	8/12/2019 13:21	Floor	N/A	Ceramic Tile	Puty	Male Bathroom	1990	First	Bent Mountain	Jesse Phillips
243	0	mg/cm2	0.5	Negative	8/12/2019 13:21	Floor	N/A	Ceramic Tile	Brown	Male Bathroom	1990	First	Bent Mountain	Jesse Phillips
244	0.1	mg/cm2	0.5	Negative	8/12/2019 13:41	Roof Top	N/A	Metal	Red	Library	1990	Exterior	Bent Mountain	Jesse Phillips
245	0.1	mg/cm2	0.4	Negative	8/12/2019 13:42	Roof Top	N/A	Metal	White	Library Area Parapet Coping	1990	Exterior	Bent Mountain	Jesse Phillips
246	18.9	mg/cm2	0.5	Positive	8/12/2019 13:43	Roof Top	N/A	Metal	Red	Red Flashing "awning" at breezeway	1990	Exterior	Bent Mountain	Jesse Phillips
247	0.2	mg/cm2	0.5	Negative	8/12/2019 13:44	Roof Top	N/A	Metal	Red	Cafeterium	1990	Exterior	Bent Mountain	Jesse Phillips
248	-0.2	mg/cm2	0.4	Negative	8/12/2019 13:45	Fascia	N/A	Wood	White	Cafeterium	1990	Exterior	Bent Mountain	Jesse Phillips
249	-0.1	mg/cm2	0.4	Negative	8/12/2019 13:45	Fascia	N/A	Wood	White	Cafeterium	1990	Exterior	Bent Mountain	Jesse Phillips
250	-0.2	mg/cm2	0.4	Negative	8/12/2019 13:46	Fascia	N/A	Wood	White	Cafeterium	1990	Exterior	Bent Mountain	Jesse Phillips
251	10.4	mg/cm2	0.5	Positive	8/12/2019 13:47	Fascia	N/A	Wood	White	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
252	0.1	mg/cm2	0.4	Negative	8/12/2019 13:48	Vent	N/A	Metal	Red	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
253	0.2	mg/cm2	0.5	Negative	8/12/2019 13:48	Vent	N/A	Metal	Red	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
254	0.7	mg/cm2	0.2	Negative	8/12/2019 13:50	Vent	N/A	Metal	Red	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
255	0.7	mg/cm2	0.4	NULL	8/12/2019 13:51	Vent	N/A	Metal	Red	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
256	0.3	mg/cm2	0.5	Negative	8/12/2019 13:52	Vent	N/A	Metal	Red	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
257	2.2	mg/cm2	0.5	Positive	8/12/2019 13:53	Vent	N/A	Metal	White	Original Gym Roof Perimeter	1930	Exterior	Bent Mountain	Jesse Phillips
258	0	mg/cm2	0.4	Negative	8/12/2019 13:59	Fascia	West	Metal	White	White Flashing at breezeway	1930	Exterior	Bent Mountain	Jesse Phillips
259	0	mg/cm2	0.5	Negative	8/12/2019 13:59	Fascia	West	Metal	White	White Flashing at breezeway	1930	Exterior	Bent Mountain	Jesse Phillips
260	0.2	mg/cm2	0.5	Negative	8/12/2019 14:01	Ceiling	West	Plaster	White	Breezeway Exterior	1930	Exterior	Bent Mountain	Jesse Phillips
261	0	mg/cm2	0.5	Negative	8/12/2019 14:03	Sink Leg	North	Metal	Gray	Kitchen	1990	First	Bent Mountain	Jesse Phillips

Reading #	Concentration	Units	+/-	Result	Date/Time	Component	Side	Substrate	Color	Room	Built Date	Floor	Project	Inspector
262	-0.3	mg/cm2	0.5	Negative	8/12/2019 14:12	Wall	South	CMU	Brown	HVAC Room 11	1990	First	Bent Mountain	Jesse Phillips
263	1.1	mg/cm2	0.2	Positive	8/12/2019 14:33	Calibration							Bent Mountain	Jesse Phillips
264	1.1	mg/cm2	0.2	Positive	8/12/2019 14:34	Calibration							Bent Mountain	Jesse Phillips
265	1.1	mg/cm2	0.2	Positive	8/12/2019 14:34	Calibration							Bent Mountain	Jesse Phillips

Performance Characteristic Sheet

EFFECTIVE DATE: December 1, 2015

MANUFACTURER AND MODEL:

Make: *Heuresis*
Models: *Model Pb200i*
Source: *⁵⁷Co, 5 mCi (nominal – new source)*

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Action Level mode

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm ² (inclusive)

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in November 2015, with two separate instruments running software version 2.1-2 in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.0 mCi; source ages were approximately one year.

OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm² for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm² at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm². Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.

Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.

For each substrate type (the 1.02 mg/cm² NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):

$$\text{Correction value} = (1\text{st} + 2\text{nd} + 3\text{rd} + 4\text{th} + 5\text{th} + 6\text{th Reading})/6 - 1.02 \text{ mg/cm}^2$$

Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below. Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

In the Action Level paint test mode, the instrument takes the longest time to complete readings close to the Federal standard of 1.0 mg/cm². The table below shows the mean and standard deviation of actual reading times by reading level for paint samples during the November 2015 archive testing. The tested instruments reported readings to one decimal place. No significant differences in reading times by substrate were observed. These times apply only to instruments with the same source strength as those tested (2.0 mCi). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times, than those in the table.

Mean and Standard Deviation of Reading Times in Action Level Mode by Reading Level		
Reading (mg/cm ²)	Mean Reading Time (seconds)	Standard Deviation (seconds)
< 0.7	3.48	0.47
0.7	7.29	1.92
0.8	13.95	1.78
0.9 – 1.2	15.25	0.66
1.3 – 1.4	6.08	2.50
≥ 1.5	3.32	0.05

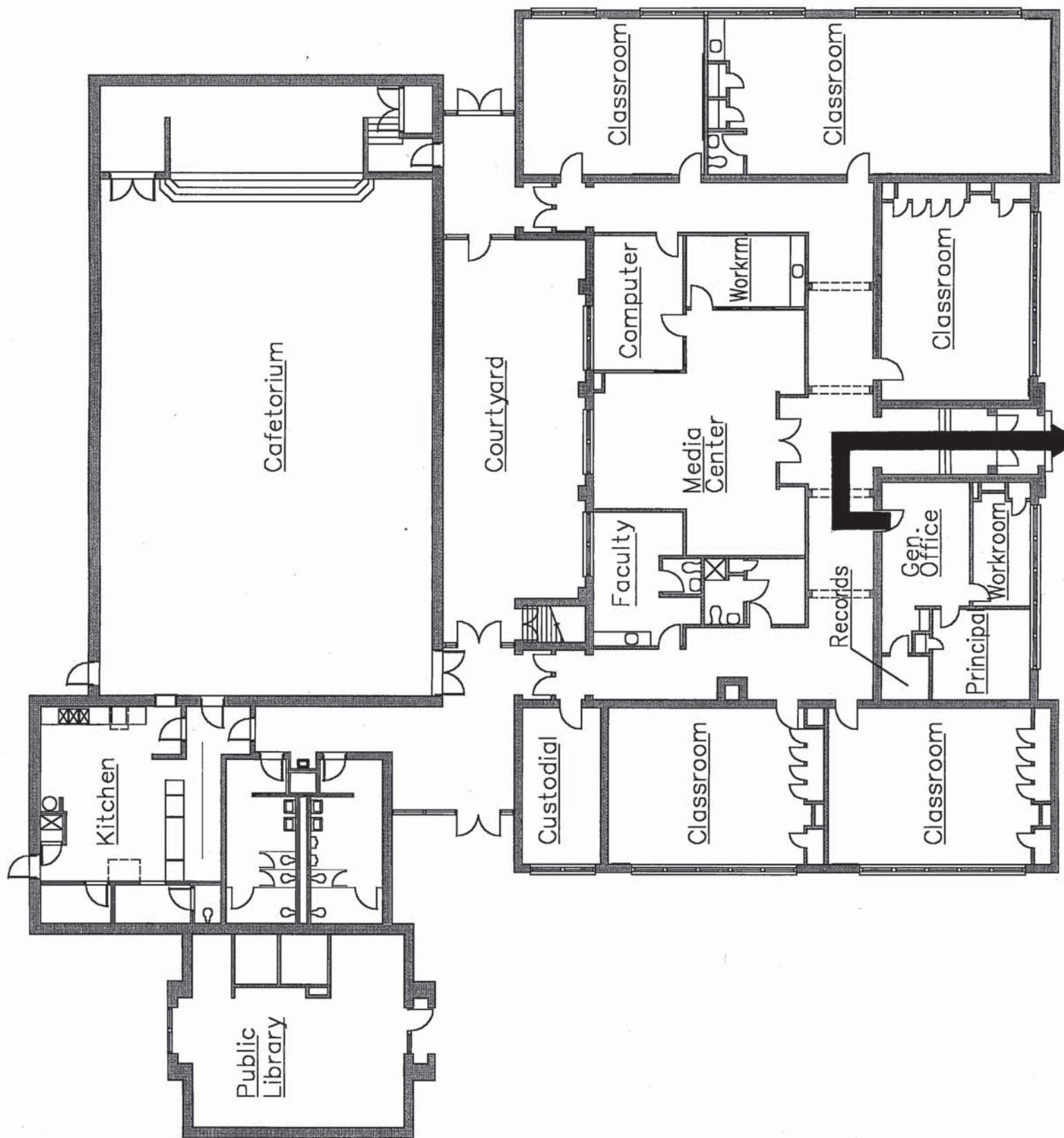
CLASSIFICATION OF RESULTS:

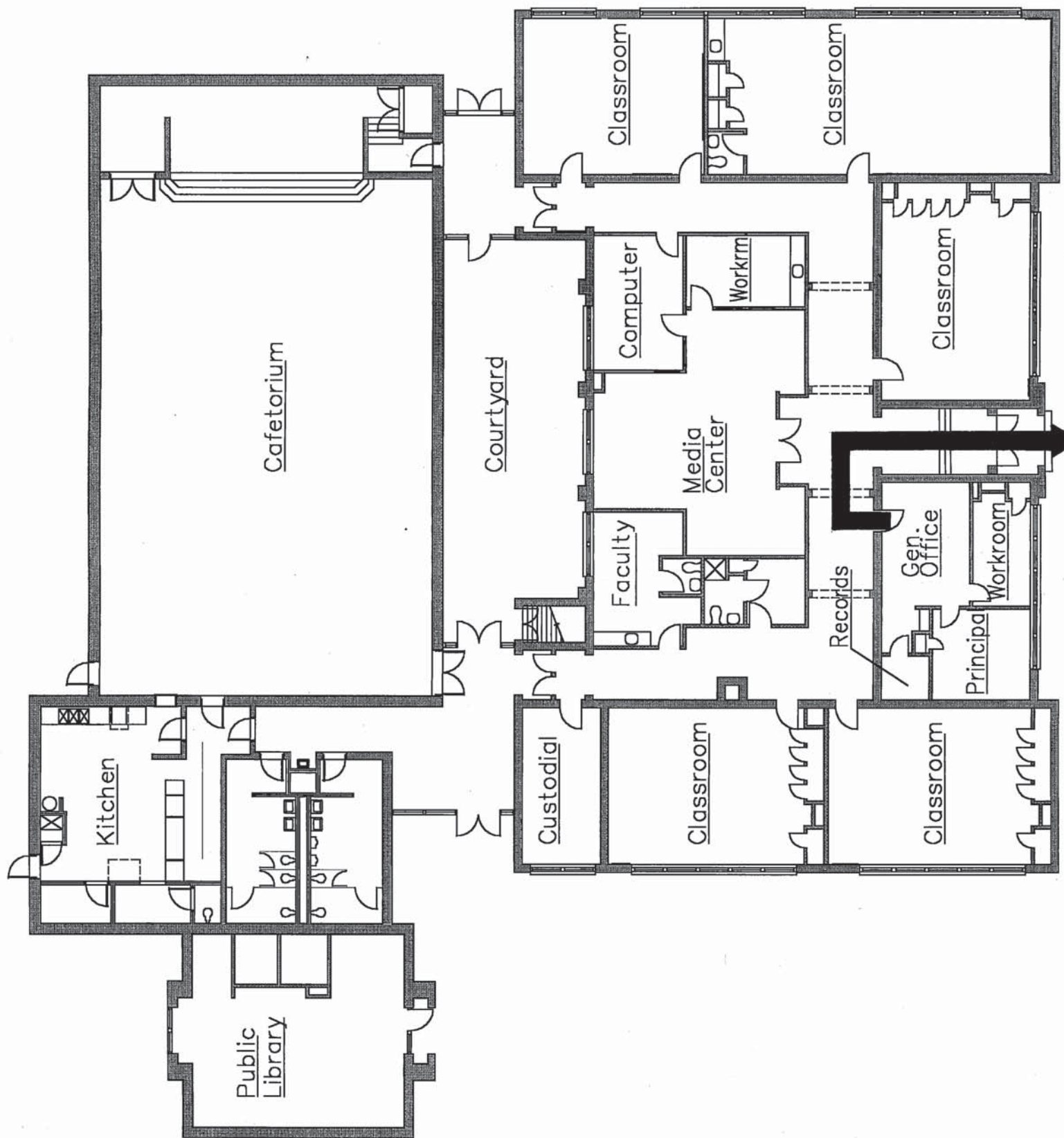
XRF results are classified as **positive** if they are **greater than or equal** to the stated threshold for the instrument (1.0 mg/cm²), and *negative* if they are *less than* the threshold.

DOCUMENTATION:

A report titled *Methodology for XRF Performance Characteristic Sheets* (EPA 747-R-95-008) provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at <http://www2.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997>.

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the XRF manufacturer.





Attachment F to IFB 2021-062: Project Drawings

Provided by Balzer and Associates, Inc.

BENT MOUNTAIN COMMUNITY CENTER

"CHANGE-OF-USE" AND INTERIOR RENOVATIONS
10148 TINSLEY LANE
BENT MOUNTAIN, VIRGINIA 24059



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

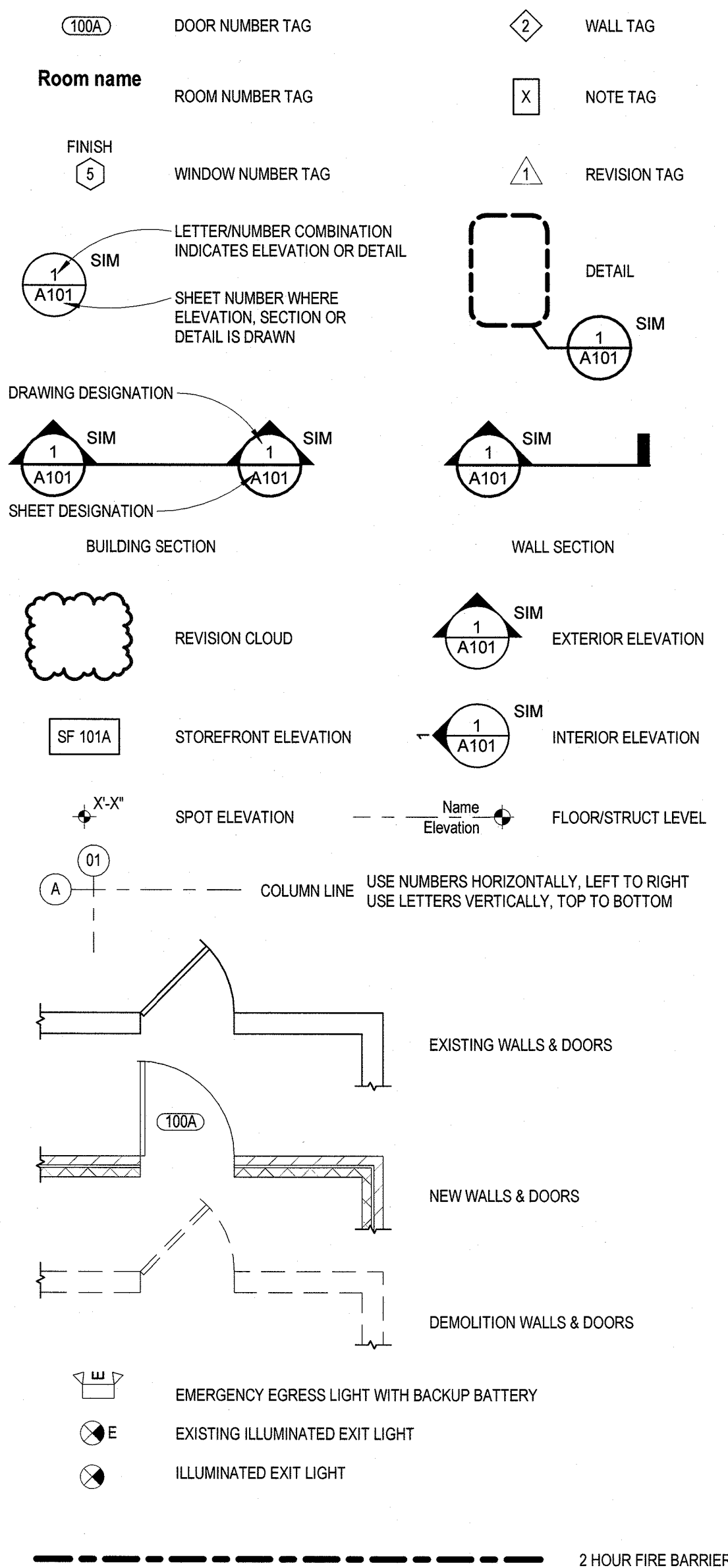
540.772.9580

BALZER PROJECT NO. 03160018.00

ABBREVIATIONS

AFB	ABOVE FINISH FLOOR	LW	LIGHTWEIGHT
AP	ACCESS PANEL	LUL	LIGHT LUG
ACT	ACROUSTIC CEILING TILE	LVR	LIGHT LUG
ACPL	ACROUSTIC PLASTER		
AC	AIR CONDITIONING		
ALUM	ALUMINUM		
AB	ANCHOR BOLT	MF	MAN HOLE
ANCD	ANCHORED	MFR	MANUFACTURER
APPROX	APPROXIMATELY	MAS	MASONRY
AD	AREA DRAIN	MO	MASONRY OPENING
ARCH	ARCHITECTURAL	MTL	MATERIAL
ASHF	ASPHALT	MECH	MECHANICAL
		MTL	METAL
		MTL BLDG MFR	METAL BUILDING MANUFACTURER
BP	BASE PLATE	MFD	METAL FLOOR DECKING
BSMT	BASMENT	MFD	METAL FLOOR DECKING
BM	BEAM	MFD	METAL FLOOR DECKING
BRG	BEARING	MN	MINIMUM
BT	BTOMOUS	MSC	MISCELLANEOUS
BLDG	BLOCKING	MDO	MOLDING, MOLDING
BD	BOARD	MTG	MOUNTING
BOT	BOTTOM		
BRK	BRICK	NOM	NORMAL
BLDG	BUILDING	NIC	NOT IN CONTRACT
		NTS	NOT TO SCALE
		NPL	NOT TO SCALE
CPT	CASED OPENING	OC	ON CENTER
CSMT	CASEMENT	OC	ON CENTER
CLG	CEILING	OPG	OPENING
CH	CENTER LINE	OPH	OPPOSITE HAND
CL	CERAMIC TILE	OPH	OPPOSITE HAND
CR	CHAR WALL	OF	OUTSIDE FACE
CLR	CLEARANCE	OF	OUTSIDE FACE
CLD	CLOSET	OF	OUTSIDE FACE
COL	COLUMN	OF	OVERHANG
CONC	CONCRETE		
CONST	CONCRETE MASONRY UNIT		
CONT	CONTINUOUS	PRL	PANEL
CJ	CONTROL JOINT	PMT	PAINTED
CR	CORNER	PB	PARTIAL BOARD
CTR	COUNTER	PLST	PLASTER
CRS	COURSE	PLM	PLASTIC LAMINATE
		PL	PLATE
DEM	DEMOLITION	PLG	PLYWOOD
DEPT	DEPARTMENT	PVC	POLYVINYL CHLORIDE
DAG	DIAGONAL	PFE	PORTABLE FIRE EXTINGUISHER
DAM	DAMETER	P	POUND
DM	DIMENSION	PSF	POUNDS PER SQUARE FOOT
DO	DITTO	PSI	POUNDS PER SQUARE INCH
DV	DIVISION	PC CONC	PRECAST CONCRETE
DR	DOUBLE HUNG	PREFIN	PREFINISHED
DS	DOWN SPOUT	PROP	PROPOSED
DS	DOWN SPOUT		
DT	DRAIN TILE		
DWG	DRAWING	QT	QUARRY TILE
ELEC	ELECTRIC	RAD	RADIUS
ENC	ELECTRIC WATER COOLER	RISER	RISER
EP	ELECTRICAL PANEL BOARD	REC	RECEPTACLE/ELECTRICAL
ELEV	ELEVATION	REF	REFRIGERATOR
EMER	EMERGENCY	REIN	REINFORCED
ENCL	ENCLOSURE	REIN	REINFORCED
ENG	ENGINEERING	RES	REMOVE
ENT	ENTRANCE	RES	RESILIENT
EQ	EQUAL	RET	RETURN
EQUIP	EQUIPMENT	RET	RETURN
EXH	EXHAUST	RA	RETURN AIR
EXIST	EXISTING	REV	REVISION
EXP	EXPANSION BOLT	RH	RIGHT HAND
EJ	EXPANSION JOINT	RM	ROOM
EXT	EXTERIOR	RD	ROAD
		RO	ROOM
		RO	ROOM
FB	FACE BRICK	RO	ROOM
F8	FACE OF BRICK	RO	ROOM
FT	FEET, FOOT	RO	ROOM
FN	FENCE	RO	ROOM
FIN	FINISH	RO	ROOM
FINFL	FIRE EXTINGUISHER CABINET	RO	ROOM
FC	FIRE HOSE CABINET	RO	ROOM
FHC	FIRE HOSE CABINET	RO	ROOM
FPL	FIREPLACE	RO	ROOM
FLO	FLOORING	RO	ROOM
FD	FLOOR DRAIN	RO	ROOM
FLOOR	FLOORING	RO	ROOM
FTS	FOOTING	RO	ROOM
FND	FOUNDATION	RO	ROOM
FRA	FRESH AIR	RO	ROOM
FBO	FURNISHED BY OTHERS	RO	ROOM
		RO	ROOM
GA	GAGE GAUGE	RO	ROOM
GALV	GALVANIZED	RO	ROOM
GC	GENERAL CONTRACTOR	RO	ROOM
GL	GLASS	RO	ROOM
GLB	GLASS BLOCK	RO	ROOM
GO	GRADE, GRADING	RO	ROOM
GWB	GYPSUM WALL BOARD	RO	ROOM
		RO	ROOM
HC	HANDICAP	RO	ROOM
HWD	HARDWARE	RO	ROOM
HWR	HARDWOOD	RO	ROOM
HTG	HEATING	RO	ROOM
HVAC	HEATING/VENTILATING/CONDITIONING	RO	ROOM
HD	HEAVY DUTY	RO	ROOM
HOT	HOT	RO	ROOM
HOC	HOLLOW CORE	RO	ROOM
HM	HOLLOW METAL	RO	ROOM
HORZ	HORIZONTAL	RO	ROOM
HB	HOSE BIBB	RO	ROOM
HW	HOT WATER HEATER	RO	ROOM
		RO	ROOM
ID	INSIDE DIAMETER	RO	ROOM
INCL	INCLUDE(DING)	RO	ROOM
INSL	INSULATE	RO	ROOM
INT	INTERIOR	RO	ROOM
		RO	ROOM
JAN	JANITOR'S CLOSET	RO	ROOM
		RO	ROOM
KIT	KITCHEN	RO	ROOM
KD	KNOCK DOWN	RO	ROOM
KO	KNOCKOUT	RO	ROOM
		RO	ROOM
LBL	LABEL	RO	ROOM
LAM	LAMINATED	RO	ROOM
LAV	LAVATORY	RO	ROOM
LH	LEFT HAND	RO	ROOM
LG	LENGTH, LONG	RO	ROOM

SYMBOLS & MATERIALS



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

PROJECT DIRECTORY

OWNER

COUNTY OF ROANOKE
RONALD RIQUELMI
ADDRESS: 1216 KESSLER MILL ROAD
SALEM, VIRGINIA 24153
PHONE: 540-777-6345

ARCHITECT

BALZER & ASSOCIATES, INC.
ROBERT PILKINGTON
ADDRESS: 1208 CORPORATE CIRCLE
ROANOKE, VIRGINIA 24018
PHONE: 540-772-9580

MECHANICAL/PLUMBING ENGINEER

STOTTBERG ENGINEERING
JOHN BERG
ADDRESS: PO BOX 876
FINCASTLE, VIRGINIA 24090
PHONE: 540-328-9041

ELECTRICAL ENGINEER

GIBSON ENGINEERING
DANIEL GIBSON
ADDRESS: 2100 LUBNA DRIVE
CHRISTIANSBURG, VIRGINIA 24073
PHONE: 540-328-9041

CODE ANALYSIS

THIS SET OF CONSTRUCTION DOCUMENTS ADDRESSES A MINOR INTERIOR RENOVATION AND "CHANGE-OF-USE" IN AN EXISTING BUILDING @ THE ABOVE REFERENCED ADDRESS. THERE WILL BE NO ADDITIONAL FLOOR AREA ADDED TO THE EXISTING BUILDING. THERE WILL BE NO EXTERIOR OR STRUCTURAL MODIFICATIONS TO THIS BUILDING. THIS RENOVATION WILL INCLUDE A "CHANGE-OF-USE" FROM AN EXISTING "E" USE TO A "A-3"/"E"/"B" MIXED USE.

THIS RENOVATION IS BEING DESIGNED UNDER THE 2015 VIRGINIA EXISTING BUILDING CODE, CHAPTER 7 "CHANGE OF OCCUPANCY" (WITH COMPLIANCE WITH VRC CHAPTER 6 AS REQUIRED)

CODE EDITION: 2015 VBC (2015 IBC AND IBC W/ VIRGINIA AMENDMENTS)

EXISTING BUILDING USE GROUP: E (EDUCATIONAL)

NEW USE GROUP: A-3/E (NON-SEPARATED MIXED USE)

EXISTING BUILDING CONSTRUCTION TYPE: 3B

TABULAR ALLOWABLE AREA: 9,500 SF (A-3 CONTROLS)

SPRINKLER INCREASE: NOT REQUIRED

OPEN PERIMETER INCREASE: 100% OPEN = 75% INCREASE = 7,125 SF

TOTAL ALLOWABLE BUILDING AREA: 16,625 SF

EXISTING BUILDING AREA: 14,592 SF

FIRE AREA "A": 9,744 SF

FIRE AREA "B": 3,910 SF

FIRE AREA "C": 922 SF

TABULAR ALLOWABLE HEIGHT: 2-STORY / 40'

EXISTING BUILDING HEIGHT: 1-STORY + BASEMENT/ 40'

FIRE PROTECTION SYSTEMS:

A. AUTOMATIC FIRE SPRINKLER SYSTEM NOT REQUIRED PER VCC/IBC 903.2.1.3 (A-3 USE WITH LESS THAN 12,000 SF FIRE AREAS AND LESS THAN 300 OCCUPANTS PER FIRE AREA) AND 903.2.3 (E USE WITH LESS THAN 20,000 SF)

B. FIRE ALARM SYSTEM REQUIRED PER VCC/IBC 907.2.1 AND 907.2.3 (EXISTING FIRE ALARM SYSTEM PROVIDED THROUGHOUT BUILDING / SEE ELECTRICAL DRAWINGS FOR ANY MODIFICATIONS)

OCCUPANT LOAD:

FIRE AREA "A" = 159 MAX. POSTED OCCS. (SEE SHEET A1.01)

FIRE AREA "B" = 289 OCCS. (SEE SHEET A1.01)

TOTAL THIS TENANT = 458 OCCS. (A-3 USE MAX)

NOTE: MAXIMUM OCCUPANCY NOTED IS FOR A-3 USE, WHICH IS THE "WORST-CASE" / HIGHEST VALUE FOR OCCUPANCY

EXIT REQUIREMENTS:

- NUMBER OF EXITS: (2) EXITS REQUIRED FROM EACH FIRE AREA PER VCC 1008.2.1 (3 PROVIDED)
- EXIT CAPACITY: SEE REQUIRED CAPACITY AND CAPACITY PROVIDED ON SHEET A1.01
- EXIT TRAVEL DISTANCE: 200' MAX REQUIRED PER VCC TABLE 1017.2 (110' MAX PROVIDED, SEE PLAN)
- FIRE-RATED CORRIDORS: N/A, NOT REQUIRED TO BE UPGRADED PER VBC 705.4
- DEAD-END CORRIDORS: N/A, NOT REQUIRED TO CHANGE PER VBC 705.4 (22' 9" EXISTING MAX.)
- EXIT CORRIDOR WIDTH: FIRE AREA "A" = 289 OCCS. @ 2' = 59" MIN. REQUIRED PER VCC 1005.2 (74.5" MIN. PROVIDED)
- ACCESSIBLE MEANS OF EGRESS: NOT REQUIRED IN EXISTING BUILDINGS PER VCC 1009.1, EXCEPTION 1.

NOTE: MEANS-OF-EGRESS HAS BEEN DESIGNED TO MEET THE "WORST-CASE" CALCULATED OCCUPANCY LOAD FOR A-3 USE, SEE NOTE ON SHEET A1.01

PLUMBING FIXTURE REQUIREMENTS (IBC 2902.1):

SEE CALCULATIONS ON SHEET A1.01

ACCESSIBILITY (VBC CHAPTER 4):

PER VBC 402.3 THE FOLLOWING ACCESSIBLE FEATURES ARE PROVIDED

- ACCESSIBLE BUILDING ENTRY PROVIDED AT MAIN ENTRY.
- ACCESSIBLE ROUTE PROVIDED TO PRIMARY FUNCTION AREAS. (36" MIN PATH AND 32" CLEAR DOORS W/ LEVER HARDWARE PROVIDED THROUGHOUT SPACE)
- ACCESSIBLE SIGNAGE PROVIDED PER VCC111.
- ACCESSIBLE PARKING PROVIDED ON SITE
- ACCESSIBLE SIDEWALK PROVIDED FROM PARKING TO MAIN ENTRY.
- ADDITIONALLY, THE FOLLOWING ACCESSIBLE FEATURES ARE PROVIDED:
 - ACCESSIBLE RESTROOMS FOR EACH SEX
 - ACCESSIBLE ROUTE (LIFT OR RAMP) PROVIDED AS A POSSIBLE ADD/ALTERNATE TO PROJECT BUDGET. (NOT REQUIRED BASED ON PROJECT BUDGET BUT CAN POSSIBLY BE DONE IF PROJECT BUDGET ALLOWS.)

2015 VBC CHAPTER 7 "CHANGE-OF-OCCUPANCY"

VBC 701.1: CHANGE OF OCCUPANCY SHALL ONLY BE REQUIRED TO MEET CHAPTER 7.

VBC 701.2: WORK UNDERTAKEN AS PART OF THE CHANGE-OF-OCCUPANCY SHALL MEET THE VCC FOR THE NEW USE.

VBC 702: N/A (NEW USE IS NOT A "SPECIAL USE" PER VCC TABLE 509)

VBC 703.1: INTERIOR FINISHES FOR CHANGE-OF-OCCUPANCY AREA SHALL MEET VCC REQUIREMENTS FOR NEW USE (EXISTING FINISHES MEET VCC FOR "A-3" AND "B" USES).

VBC 703.2: N/A (ONE STORY BUILDING WITH NO VERTICAL OPENINGS.)

VBC 704: CHANGE-OF-OCCUPANCY AREA SHALL MEET VCC FOR FIRE SPRINKLER AND FIRE ALARM REQUIREMENTS

- A. AUTOMATIC FIRE SPRINKLER SYSTEM NOT REQUIRED PER VCC/IBC 903.2.1.3 AND 903.2.3 (FIRE AREAS INCLUDING "A-3" USES ARE LESS THAN 12,000 SF. SEE SHEET A1.01)
- B. FIRE ALARM SYSTEM REQUIRED PER VCC/IBC 907.2.3 (FIRE AREAS CONTAINING "E" USE AREAS.) (EXISTING FIRE ALARM PROVIDED)

VBC 705: "A-3" USE IS AN EQUAL HAZARD TO "E" USE FOR MEANS-OF-EGRESS, AND "B" USE IS A LOWER HAZARD THAN "E" USE. AS SUCH, EXISTING MEANS-OF-EGRESS SHALL BE DEEMED ACCEPTABLE, EXCEPT FOR OCCUPANT LOAD EGRESS REQUIREMENTS (MEANS-OF-EGRESS MEETS VCC, SHEET A1.01)

VBC 706: "A-3" USE IS A HIGHER HAZARD THAN "E" USE FOR BUILDING HEIGHT AND AREA, AND "B" USE IS A LOWER HAZARD THAN "E" USE. BUILDING MEETS HEIGHT AND AREA REQUIREMENTS OF VCC, SEE ABOVE.

VBC 707: "A-3" AND "B" USES ARE AN EQUAL HAZARD TO "E" USE FOR EXTERIOR WALL FIRE RATINGS. AS SUCH, EXISTING BUILDING IS DEEMED ACCEPTABLE "AS IS" FOR FIRE-RATING OF EXTERIOR WALLS.

VBC 708: "A-3" USE IS ONE OF "SPECIAL OCCUPANCIES" PER VBC 708.1, SEE ELECTRICAL DRAWINGS FOR ANY REQUIRED MODIFICATIONS. (NOTE: "B" USE IS NOT ONE OF THE "SPECIAL OCCUPANCIES," SO NO CHANGES ARE REQUIRED FOR THAT USE.)

VBC 709: "A-3" USE HAS A SLIGHTLY HIGHER OCCUPANT LOAD THAN EXISTING USE, SEE MECHANICAL DRAWINGS FOR ANY REQUIRED MODIFICATIONS. (NOTE: "B" USE HAS A LOWER OCCUPANCY LOAD THAN "E," SO NO MODIFICATIONS ARE REQUIRED FOR THAT USE.)

VBC 710: CHANGE-OF-OCCUPANCY AREA MEETS 2015 VCC AND 2015 VPC FOR PLUMBING FIXTURES, NO INCREASED DEMANDS, SO NO ADDITIONAL PLUMBING FIXTURES REQUIRED.

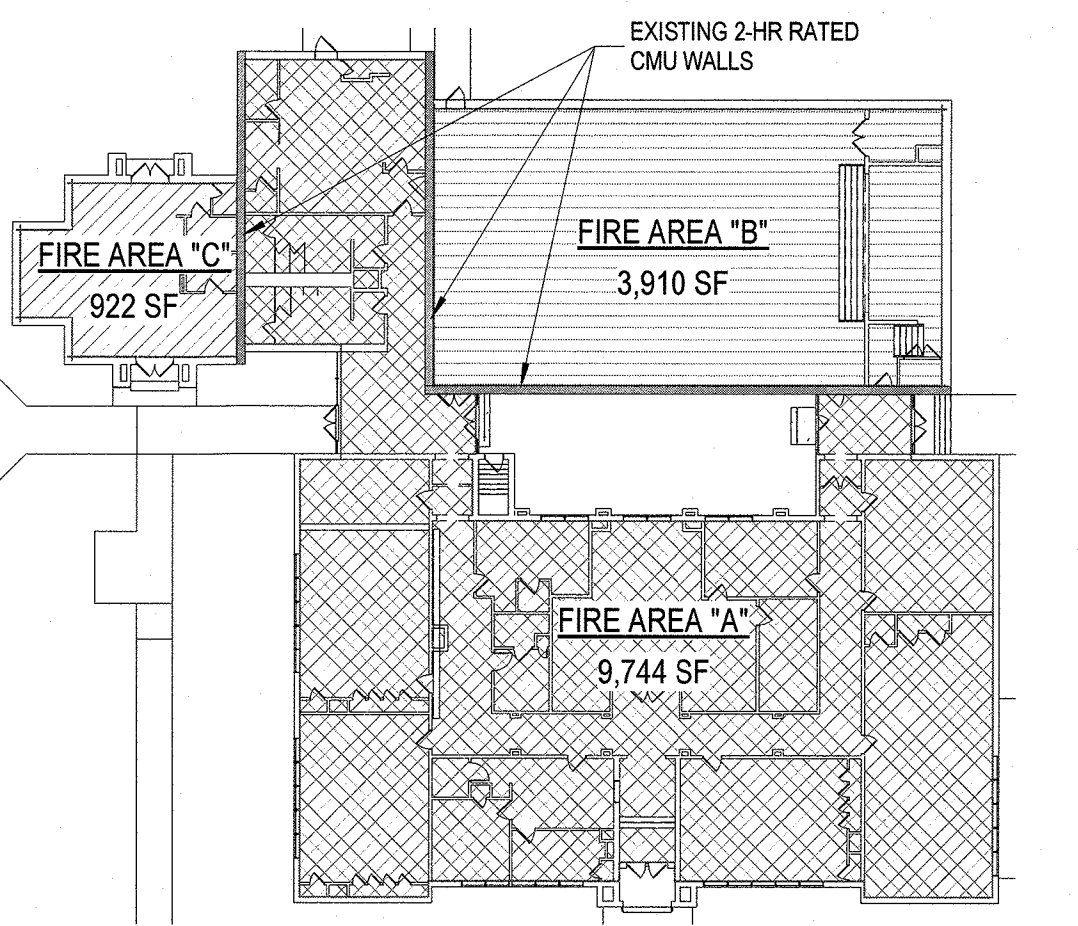
DRAWING INDEX

REVISIONS							SHEET NO.	SHEET TITLE
7	6	5	4	3	2	1		
							T1.01	COVER SHEET / CODE ANALYSIS
							T1.02	SCHEMATIC SITE PLAN & GENERAL PROJECT NOTES
							D1.01	EXISTING / DEMOLITION FLOOR PLAN
							D1.02	EXISTING / DEMOLITION CEILING PLAN
							A1.01	RENOVATION FLOOR PLAN
							A1.02	RENOVATION REFLECTED CEILING PLAN
							A1.03	SCHEDULES AND DETAILS
							M1.01	MECHANICAL GENERAL NOTES & DETAILS
							M1.02	MECHANICAL SCHEDULES
							M1.03	MECHANICAL SPECIFICATIONS
							M2.01	MECHANICAL DEMOLITION PLAN
							M2.02	MECHANICAL DEMOLITION PLAN - ROOF
							M3.01	MECHANICAL NEW WORK PLAN
							M3.02	MECHANICAL NEW WORK PLAN - ROOF
							M4.01	MECHANICAL CONTROLS
							P1.01	PLUMBING GENERAL NOTES AND LEGEND
							P2.01	PLUMBING PARTIAL PLANS
							E1.1	LEGEND, GENERAL NOTES & SCHEDULES
							E2.1	ELECTRICAL DEMOLITION
							E3.1	ELECTRICAL NEW WORK
							E4.1	EXISTING PANEL SCHEDULES
							E5.1	SPECIFICATIONS
							E5.2	SPECIFICATIONS

CODE NOTES

- LABEL ANY EXISTING FIRE RATED WALL ASSEMBLIES AT 8'-0" ON CENTER ABOVE SUSPENDED CEILINGS AND IN ATTIC AREAS PER VIRGINIA CONSTRUCTION CODE SECTION 703.7. CONSULT ARCHITECT DURING CONSULTATION FOR WHICH WALLS TO LABEL.
- ANY NEW CONCEALED INSULATION MATERIALS SHALL HAVE FLAME SPREAD INDEX OF 25 OR LESS, AND SMOKE DEVELOPED INDEX OF 450 OR LESS PER VCC 720.2.
- ANY NEW EXPOSED INSULATION MATERIALS SHALL HAVE FLAME SPREAD INDEX OF 25 OR LESS, AND SMOKE DEVELOPED INDEX OF 450 OR LESS PER VIRGINIA CONSTRUCTION CODE SECTION 720.3.
- INTERIOR FINISHES SHALL HAVE A MINIMUM FLAME SPREAD INDEX RATING OF CLASS C (FLAME SPREAD INDEX OF 75-200, SMOKE DEVELOPED INDEX OF 0-450). PER VIRGINIA CONSTRUCTION CODE SECTION 803.1.1.
- ANY NEW FLOOR FINISHES SHALL BE COMPLIANT WITH VIRGINIA CONSTRUCTION CODE SECTION 804.
- PROVIDE PORTABLE FIRE EXTINGUISHERS PER VIRGINIA CONSTRUCTION CODE SECTION 906 AND VIRGINIA FIRE PREVENTION CODE (VFC) 906. REFER TO LIFE SAFETY PLAN(S) FOR LOCATIONS.
- PROVIDE MEANS OF EGRESS ILLUMINATION PER VIRGINIA CONSTRUCTION CODE SECTION 1008. SEE ELECTRICAL DRAWINGS.
- ANY NEW LOCKS, LATCHES AND OPERATIONS SHALL COMPLY WITH VIRGINIA CONSTRUCTION CODE SECTION 1010.1.8. SEE FLOOR PLAN FOR ANY NEW DOOR HARDWARE TYPES.
- ANY NEW REQUIRED PANIC HARDWARE SHALL COMPLY WITH UNDERWRITERS LABORATORY (UL) 10C AND UL 305. COMPLIANCE WITH ONLY UL 305 IS ACCEPTABLE FOR DOORS THAT ARE NOT FIRE DOOR ASSEMBLIES VIRGINIA CONSTRUCTION CODE SECTION 1010.1.10.
- PROVIDE ILLUMINATED EXIT SIGNS PER VIRGINIA CONSTRUCTION CODE SECTION 1013. SEE ELECTRICAL DRAWINGS.
- ANY NEW PLUMBING FIXTURES TO BE AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANT. HANDICAP CONTROLS SHALL COMPLY WITH VIRGINIA CONSTRUCTION CODE SECTION 1109.

BUILDING KEY PLAN



BENT MOUNTAIN COMMUNITY CENTER

"CHANGE-OF-USE" AND INTERIOR RENOVATIONS

COVER SHEET / CODE ANALYSIS

10148 TINSLEY LANE
BENT MOUNTAIN, VIRGINIA 24059

DRAWN BY: MEA
DESIGNED BY: XXX
CHECKED BY: RWP
DATE: 10/06/2020
SCALE: As indicated
REVISIONS:

REVISIONS:

T1.01
PROJECT NO. 03160018.00

GENERAL CONSTRUCTION NOTES

DIVISION 1 - GENERAL

1.1 SEE PROJECT MANUAL FOR PROJECT SPECIFICATIONS, DATED 10/01/2020.

1.2 ALL DESIGNS, CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL COMPLY WITH THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC) (2015 EDITION (2015 VIRGINIA CONSTRUCTION CODE AND 2015 VIRGINIA EXISTING BUILDING CODE), 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.

1.3 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.

1.4 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.

1.5 ALL AREAS SHALL BE ACCESSIBLE TO THE HANDICAPPED, IN ACCORDANCE WITH VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC) AND AMENDMENTS AND APPLICABLE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES, SPECIFIC TO AREAS/ELEMENTS NOTED ON SHEET T1.01.

1.6 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.

1.7 UNDER NO CIRCUMSTANCES SHALL THESE DRAWINGS BE USED FOR SHOP DRAWINGS.

1.8 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.

1.9 WORK NOT INDICATED ON A PART OF THE DRAWINGS, BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PIECES, SHALL BE REPEATED.

1.10 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.

1.11 SUBSTITUTIONS FOR SPECIFIED MATERIALS AND PRODUCTS SHALL BE MADE ONLY WITH PRIOR APPROVAL FROM THE ARCHITECT OR OWNER.

DIVISION 3 - CONCRETE

3.1 ALL CONCRETE MATERIALS, PROCESSES, AND WORK SHALL BE IN ACCORDANCE WITH ACI 318-05 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", UNLESS OTHERWISE NOTED OR DETAILED ON THE CONTRACT DRAWINGS. DETAIL, FABRICATE AND PLACE REINFORCEMENT IN ACCORDANCE WITH ACI 318-05 UNLESS OTHERWISE SHOWN.

3.2 SEE PROJECT MANUAL FOR CONCRETE MIX SPECIFICATIONS.

DIVISION 4 - MASONRY

N/A

DIVISION 5 - STEEL

5.1 STRUCTURAL STEEL WORK AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, AISC "MANUAL OF STEEL CONSTRUCTION", AND AISC "CODE OF STANDARD PRACTICE", INCLUDING THE "COMMENTARY" AND SUPPLEMENTS.

5.2 STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS: A. WIDE FLANGE SHAPES - ASTM A992 (FY = 50 KSI); B. ANGLES, CHANNELS, PLATES, MISC. SHAPES - ASTM A36 (FY = 36 KSI); C. PIPE COLUMNS - ASTM A500, GRADE B (FY = 42 KSI); D. HOLLOW STRUCTURAL SECTIONS (HSS) - ASTM A500, GRADE B (FY = 46 KSI)

5.3 COLD FORMED STEEL FRAMING SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE IBC INTERNATIONAL BUILDING CODE.

5.4 ALL STRUCTURAL PROPERTIES FOR COLD FORMED STEEL FRAMING SHALL BE COMPUTED IN ACCORDANCE WITH THE A.I.S.I. "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".

5.5 ALL LIGHT GAGE STEEL STUDS AND JOISTS, INCLUDING ACCESSORIES, SHALL BE GALVANIZED WITH A MINIMUM G-60 COATING.

5.6 STUDS, RUNNERS, BRACING AND BRIDGING SHALL BE MANUFACTURED PER ASTM C-955.

5.7 ALL GALVANIZED STUDS, JOISTS AND ACCESSORIES, 16 GA. OR HEAVIER, SHALL BE FORMED FROM STEEL THAT CONFORMS TO THE REQUIREMENTS OF ASTM A-446 WITH A YIELD OF 50 KSI AND AS SET FORTH IN SECTION 1.2 OF THE A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.

DIVISION 6 - WOOD

6.1 WOOD CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION (NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION).

6.2 UNLESS OTHERWISE NOTED, ALL NAILING SHALL CONFORM TO THE "FASTENING SCHEDULE", TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE.

6.3 ALL WOOD FRAMING MATERIALS SHALL BE NO. 2 SOUTHERN PINE, OR NO. 2 SPRUCE-PINE-FIR, SURFACED DRY AND USED AT 19% MAXIMUM MOISTURE CONTENT OR EQUAL. ALL MEMBERS EXPOSED TO THE WEATHER, OR IN CONTACT WITH MASONRY OR CONCRETE, SHALL BE PRESSURE-TREATED. SEE SPECIFICATIONS FOR COMPLETE REQUIREMENTS.

6.4 CONTRACTOR TO PROVIDE WALL BLOCKING FOR ALL SHELVING, EQUIPMENT, GRAB BARS, MOP HOLDERS, FIXTURES, ETC. FOR FIRM SUPPORT. COORDINATE WITH ALL CONTRACTOR, OWNER AND EQUIPMENT SUPPLIER REQUIREMENTS PRIOR TO ENCLOSING FRAMING.

6.5 WOOD TREATMENT: PRESSURE TREAT ALL SILLS AND PLATES AND ANY OTHER WOOD IN CONTACT WITH MASONRY, CONCRETE OR GROUND, AND AS SHOWN ELSEWHERE ON DRAWINGS. PRESSURE TREATMENT SHALL COMPLY WITH AWPB STANDARDS C2 AND LP-22.

6.6 FASTENERS FOR PRESERVATIVE TREATED AND FIRE RETARDANT-TREATED WOOD SHALL BE HOT-DIPPED ZINC COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER PER IBC 2304.9.5.

DIVISION 8 - DOORS AND WINDOWS

8.1 ALL NEW DOORS TO BE MINIMUM 30" WIDE X 6'8" TALL UNLESS OTHERWISE NOTED. PROVIDE "LEVER STYLE" KNOBS. HARDWARE SHALL BE STANDARD DUTY COMMERCIAL CUSTOM GRADE. ALL HARDWARE, LOCKS AND LATCHES SHALL COMPLY WITH VCC 1010.1.9.

8.2 STEEL DOORS AND FRAMES: SEE PROJECT MANUAL / SPECIFICATIONS.

8.3 INTERIOR WOOD DOORS: SEE PROJECT MANUAL / SPECIFICATIONS.

DIVISION 9 - FINISHES

9.1 ALL INTERIOR FINISHES SHALL HAVE A MAXIMUM FLAMESPREAD RATING OF ASTM CLASS C (76-200) IN ROOMS AND ENCLOSED SPACES AND CLASS B (26-75) IN EXIT ACCESS CORRIDORS AND OTHER EXITWAYS (VCC TABLE 803.11). INTERIOR FLOOR FINISHES TO MEET THE REQUIREMENTS AS OUTLINED IN VCC SECTION 804.0.

9.2 GYPSUM BOARD ASSEMBLIES SHALL BE SECURED TO STUDS AT SPACING INDICATED BY GYPSUM BOARD MANUFACTURER WITH FASTENERS SPECIFIED BY SAME. PROVIDE SHEET STEEL ZINC COATED BY HOT DIP PROCESS TRIM ACCESSORIES COMPLYING WITH ASTM C1047. TRIM INCLUDES CORNER BEAD, LC BEAD, SCREW HEADS, AND IRREGULARITIES. SAND SMOOTH. PROVIDE MOISTURE RESISTANT BOARD IN EXTERIOR SOFFITS, BATHROOMS, AROUND OPEN TUBS, AND IN LAUNDRY AND JANITOR ROOMS.

9.3 INTERIOR PAINT: UTILIZE PAINT MATERIALS CONTAINING 0% VOC'S (VOLATILE ORGANIC COMPOUNDS), CONSISTING OF (1) COAT OF INTERIOR LATEX PRIMER AND (2) COATS OF LATEX FINISH.

9.4 ADDITIONAL FINISH DOCUMENTS TO BE PROVIDED BY OWNER/TENANT IF REQUIRED. COLOR/MATERIAL SELECTIONS TO BE MADE BY OWNER/TENANT.

DIVISION 15 - MECHANICAL

15.1 ALL MECHANICAL AND PLUMBING DESIGNS, CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL PROVISIONS OF THE 2015 EDITION OF THE "VIRGINIA PLUMBING CODE (VPC)", AND THE 2015 EDITION OF THE "VIRGINIA MECHANICAL CODE (VMC)", AS A MINIMUM LEVEL OF CONSTRUCTION DETAIL AND QUALITY.

15.2 CONTRACTOR SHALL PROVIDE ALL MECHANICAL AND PLUMBING SYSTEMS, EQUIPMENT, MATERIALS AND LABOR TO INSTALL COMPLETE SYSTEMS AS INDICATED ON MECH/PLUMB. DRAWINGS. CONTRACTOR SHALL BASE HIS BID ON THE SUPPLIED INFORMATION, AND SHALL ALSO INCLUDE ANY ADDITIONAL DETAILS, EQUIPMENT, SYSTEMS OR MATERIALS REQUIRED TO DELIVER A COMPLETE AND FINISHED PRODUCT TO THE OWNER, OR REASONABLY AND NORMALLY INCLUDED IN A COMPLETED PROJECT OF SIMILAR SCOPE, IN COMPLIANCE WITH ALL LAWS, CODES AND ORDINANCES.

15.3 HOT WATER AT TAPS SHALL BE MAINTAINED WITH A RANGE OF 105-120 DEGREES FAHRENHEIT.

15.7 INSULATE ANY NEW OR MODIFIED ABOVE GRADE WATER SUPPLY PIPING WITH 1/2" FIBERGLASS PIPE COVERING.

15.8 PRESSURE TEST ANY NEW OR MODIFIED WATER LINES WITH 100 PSI FOR LEAKS, AND GRAVITY TEST ALL SANITARY LINES WITH TEN FOOT (10') STANDING HEAD (OR AS DIRECTED BY THE BUILDING OFFICIAL).

15.10 ANY NEW OR MODIFIED VACUUM BREAKERS ARE REQUIRED AT ALL HOSE BIBBS AND ANY OUTLET OR CONNECTION SUBJECT TO BACKFLOW.

15.11 PROVIDE SHUT-OFF VALVE AT ANY NEW OR MODIFIED FIXTURE AND EQUIPMENT CONNECTION FOR FUTURE SERVICE AND REMOVAL.

15.13 ANY NEW OR MODIFIED HOT WATER LINES AND EXPOSED DRAIN LINES ARE TO BE INSULATED IN ACCORDANCE WITH ADA REQUIREMENTS.

15.14 ALL HANDICAP CONTROLS SHALL COMPLY WITH VCC 1109.13.

DIVISION 16 - ELECTRICAL

16.1 ALL ELECTRICAL DESIGNS, CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL PROVISIONS OF THE 2015 VCC/IBC, AND THE 2014 NATIONAL ELECTRIC CODE (NEC), AS A MINIMUM LEVEL OF CONSTRUCTION DETAIL AND QUALITY.

16.2 ELECTRICAL CONTRACTOR TO PROVIDE ALL SYSTEMS, EQUIPMENT, MATERIALS AND LABOR TO INSTALL A COMPLETE ELECTRICAL SYSTEM FOR PROJECT. CONTRACTOR SHALL BASE HIS BID ON THE SUPPLIED INFORMATION, AND SHALL ALSO INCLUDE ANY ADDITIONAL DETAILS, EQUIPMENT, SYSTEMS OR MATERIALS REQUIRED TO DELIVER A COMPLETE AND FINISHED PRODUCT TO THE OWNER, OR REASONABLY AND NORMALLY INCLUDED IN A COMPLETED PROJECT OF SIMILAR SCOPE, IN COMPLIANCE WITH ALL LAWS, CODES AND ORDINANCES.

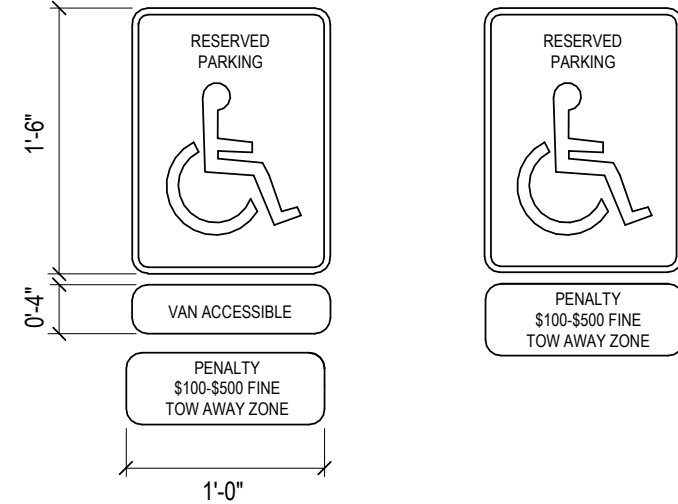
16.3 PROVIDE EXIT SIGNS/LIGHTS IN ACCORDANCE WITH VCC/IBC 1013. PROVIDE EMERGENCY EGRESS LIGHTS IN ACCORDANCE WITH VCC/IBC 1008.

RENOVATION SITE NOTES

S01	NEW 4" THICK 4000 PSI CONCRETE SIDEWALK, SLOPE 2% FOR FIRST 5'-0" FROM DOORS, SLOPE DOWN AND TIE INTO FLUSH TRANSITION @ EXISTING SIDEWALK.
S02	NEW 4" THICK 4000 PSI CONCRETE SIDEWALK, SLOPE DOWN AND TIE INTO FLUSH TRANSITION @ EXISTING SIDEWALK.
S03	NEW ASPHALT, SLOPE 2% WITHIN HANDICAP SPACES, SLOPE DOWN AND TIE INTO FLUSH TRANSITION @ EXISTING ASPHALT.
S04	NEW PAINTED HANDICAP SYMBOL.
S05	NEW PARKING BLOCKS TO BE ADDED, EXISTING HANDICAP SIGNAGE TO BE REPAINTED.
S06	NEW PAINTED PARKING STRIPES AT REAR OF BUILDING.
S07	REMOVE EXISTING HVAC UNIT AND CONCRETE PAD, FILL IN WITH TOP SOIL WHERE CONCRETE PAD HAS BEEN REMOVED, SEED AND STRAW DISTURBED AREA.

ZONING NOTES

TAX PARCEL ID NO.:	111.00-01-08.00-0000
PROPERTY ADDRESS:	10148 TINSLEY LANE
PROPERTY ZONING:	COUNTY-AV
MAGISTERIAL DISTRICT:	WINDSOR HILLS
PROPERTY ACREAGE:	5.33 ACRES
FLOOD HAZARD AREA:	NO
BUILDING USES:	COMMUNITY RECREATION (EDUCATION / ASSEMBLY / OFFICES SCHEDULE "B")
PARKING REQUIRED:	31 (EXISTING / NO CHANGE)
PARKING PROVIDED:	

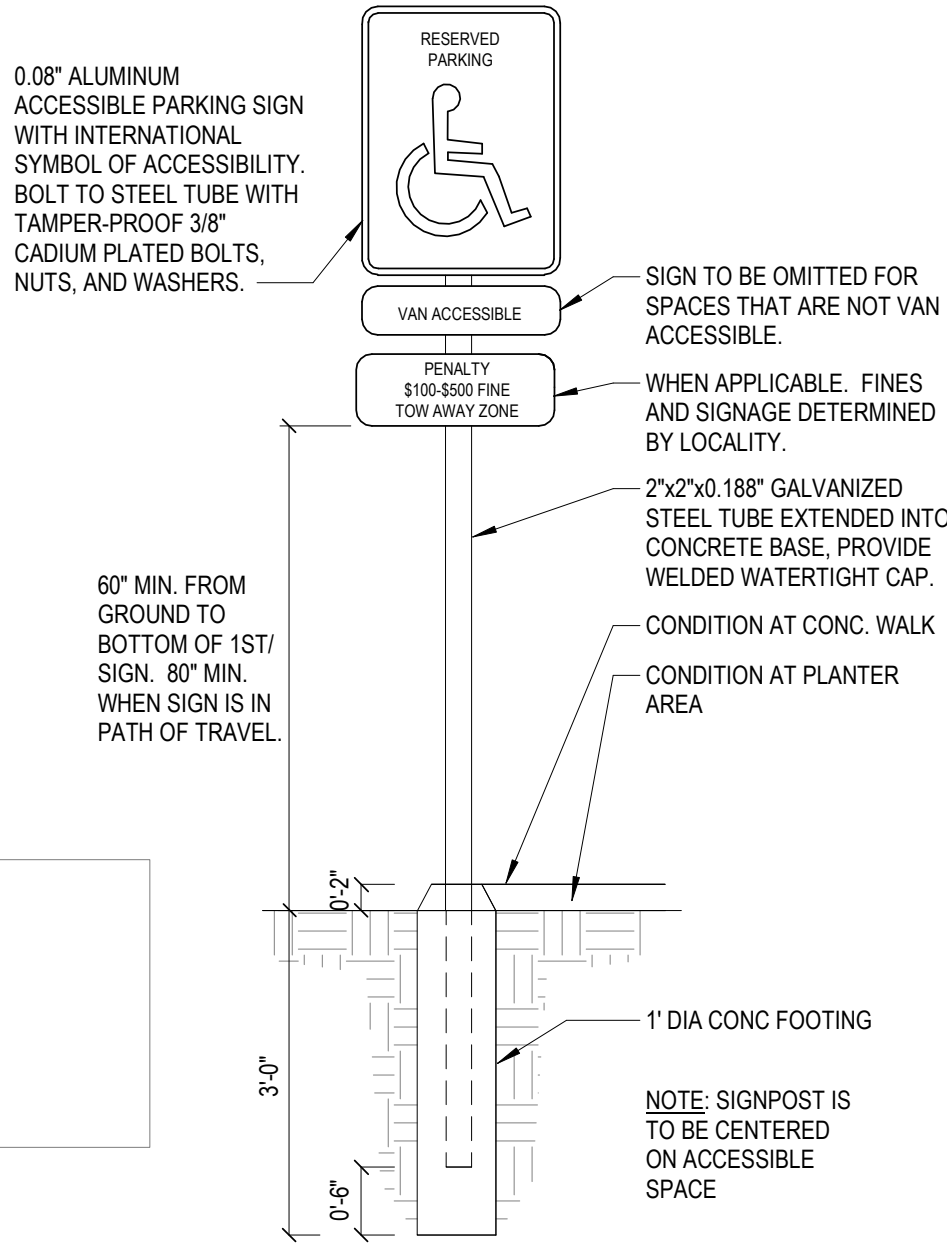


HANDICAP SIGN NOTES:

1. THE PROPOSED SIGNAGE SHALL BE INSTALLED PER ADA STANDARDS.
2. ALL SIGNS SHALL BE REFLECTORIZED.
3. ALL SIGNS SHALL BE SECURELY MOUNTED TO THE PROPOSED PIPE.
4. ALL HANDICAP PARKING SPACE SIGNS SHALL HAVE THE BOTTOM EDGE OF THE SIGN NO LOWER THAN FIVE FEET NOR HIGHER THAN SEVEN FEET ABOVE THE PARKING SURFACE.

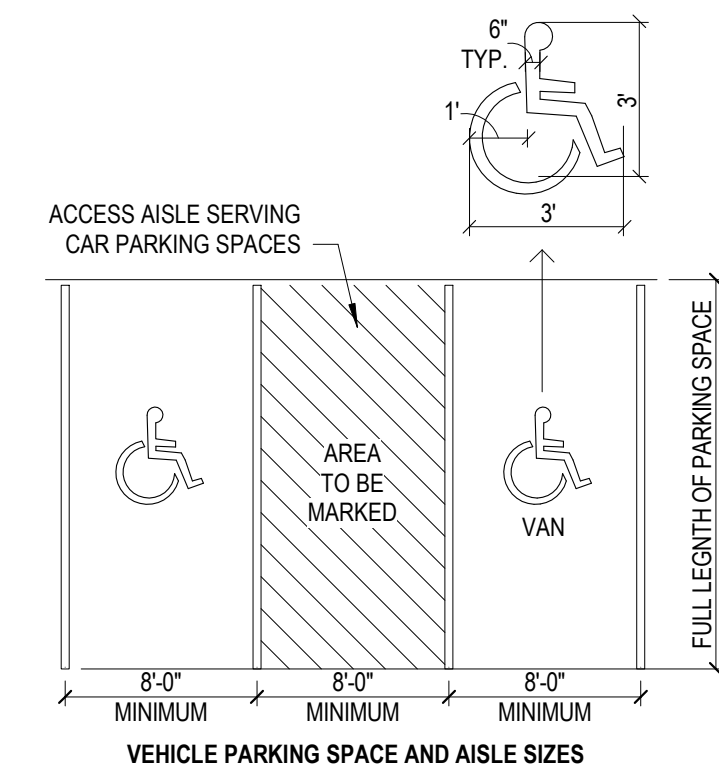
HANDICAP SIGN DETAIL

NO SCALE



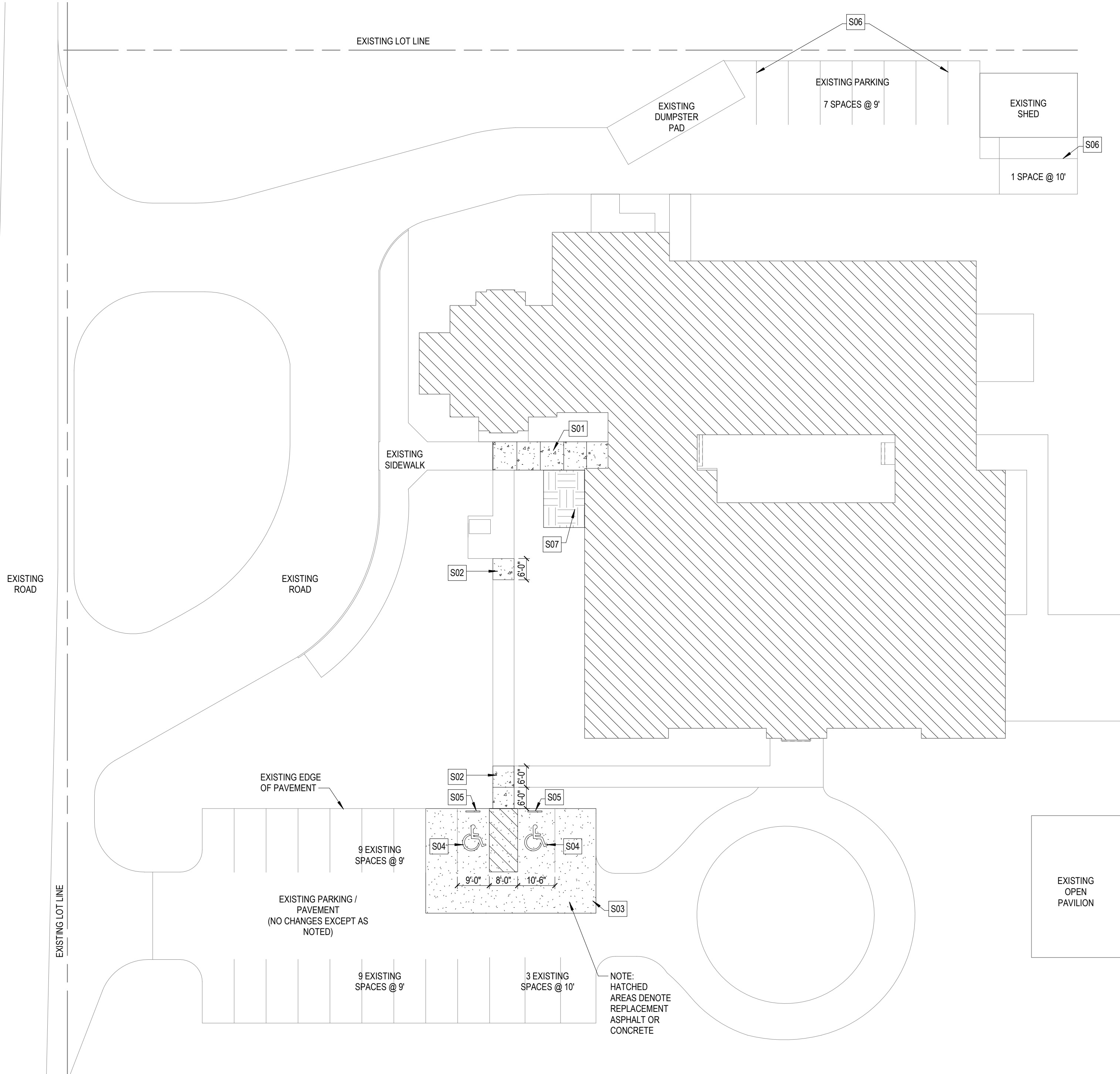
HANDICAP PARKING SIGNPOST DETAIL

NO SCALE



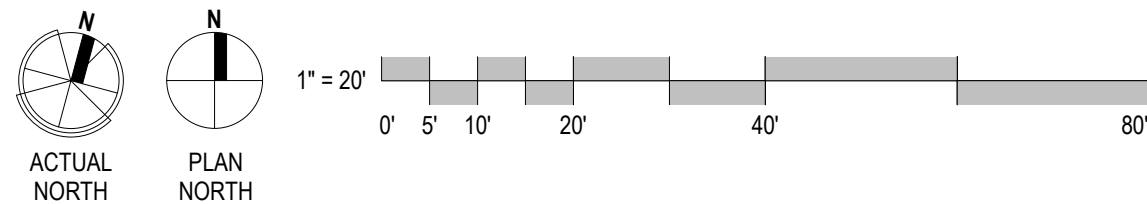
HANDICAP PARKING SPACE DETAILS

NOT TO SCALE



SITE PLAN

1 T1.02 1" = 20'-0"



BALZER & ASSOCIATES

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



BENT MOUNTAIN COMMUNITY CENTER "CHANGE-OF-USE" AND INTERIOR RENOVATIONS SCHEMATIC SITE PLAN & GENERAL PROJECT NOTES

10148 TINSLEY LANE
BENT MOUNTAIN, VIRGINIA 24069

DRAWN BY	MEA
DESIGNED BY	XXX
CHECKED BY	RWP
DATE	10/06/2020
SCALE	As indicated
REVISIONS	

T1.02

PROJECT NO

03160018.00



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc
1208 Corporate Circle
Roanoke, VA 24018
540.772.9580



BENT MOUNTAIN COMMUNITY CENTER
"CHANGE-OF-USE" AND INTERIOR RENOVATIONS
EXISTING / DEMOLITION FLOOR PLAN

DRAWN BY **MEA**
DESIGNED BY **XXX**
CHECKED BY **RWP**
DATE **10/06/2020**
SCALE **As indicated**
REVISIONS

D1.01
PROJECT NO 03160018.00

DEMOLITION NOTES	
D01	REMOVE EXISTING DOOR AND FRAME. PREPARE WALL FOR NEW CONSTRUCTION AS NOTED ON A1.01
D02	REMOVE PORTION OF EXISTING NON-BEARING / NON-FIRERATED WALL AS REQUIRED FOR NEW DOOR / FRAME
D03	REMOVE EXISTING COUNTER / CASEWORK, REPAIR / PATCH WALL AND FLOOR FINISHES AS REQUIRED
D04	REMOVE EXISTING SINK AND COUNTER. CABINET TO REMAIN, REPAIR / PATCH WALL AND FLOOR FINISHES AS REQUIRED
D05	REMOVE EXISTING NON-FIRERATED CORRIDOR WINDOW GLASS AND FRAME, IN FILL PER RENOVATION FLOOR PLAN
D06	REMOVE EXISTING PLUMBING FIXTURE, CAP EXISTING SUPPLY AND DRAIN ROUGH-INS, REPAIR / PATCH FLOOR AND / OR WALL AS REQUIRED
D07	REMOVE EXISTING LAVATORY AND MIRROR; RELOCATE EXISTING PLUMBING ROUGH-INS AS REQUIRED PER RENOVATION PLAN
D08	REMOVE EXISTING URINAL, RELOCATE EXISTING PLUMBING ROUGH-INS AS REQUIRED PER RENOVATION PLAN
D09	REMOVE EXISTING DRINKING FOUNTAIN; RELOCATE EXISTING PLUMBING ROUGH-INS AS REQUIRED PER RENOVATION PLAN
D10	REMOVE SECTION OF SIDEWALK
D11	REMOVE EXISTING HVAC EQUIPMENT AND LINESETS INTO BUILDING, REPAIR/PATCH HOLES IN WALL AS REQUIRED, EXTERIOR FINISH TO MATCH EXISTING

LEGEND	
	EXISTING WALLS TO REMAIN
	WALL TO BE REMOVED
	OTHER TO BE REMOVED
	EXISTING FIRE EXTINGUISHER

GENERAL SALVAGE NOTES

- COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR THE SALVAGE OF ANY LIGHT FIXTURES, FURNISHINGS, DOORS, AND MISCELLANEOUS EQUIPMENT.
- CARE SHALL BE TAKEN IN REMOVAL OF REUSED ITEMS THAT CAN BE RELOCATED. RETURN TO OWNER ALL OTHER ITEMS.
- GENERAL CONTRACTOR SHALL COORDINATE WITH OWNER FOR ANY MATERIAL BEING REMOVED THAT ARE TO BE STORED FOR REUSE IN CONSTRUCTION OR FUTURE USE BY OWNER.

HAZARDOUS MATERIALS NOTES

- AN ASBESTOS INSPECTION WAS PERFORMED AND ASBESTOS-CONTAINING MATERIALS (ACMS) WERE FOUND. SEE PROJECT MANUAL FOR ACM REPORT. THE ASBESTOS SURVEY/INSPECTION REPORT IS AVAILABLE FOR GENERAL INFORMATION. THE ACMS SHALL BE REMOVED IN AFFECTED WORK AREAS PRIOR TO ANY OTHER WORK BEING PERFORMED IN THE INDICATED AREAS. THE ABATEMENT CONTRACTOR SHALL MARK UP THE "AS-BUILT" CONDITIONS RESULTING FROM ITS WORK TO INCLUDE AREAS WHERE ASBESTOS WAS ABATED, AREAS WHERE ASBESTOS WAS ENCAPSULATED, AND AREAS WHERE ASBESTOS CONTAINING MATERIALS EXIST BUT WERE LEFT IN PLACE.

GENERAL REPAIR NOTES

- REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION WORK.
- REPAIR DRYWALL WHERE ANY BASE AND WALL CABINETS OR DOORS AND FRAMES ARE REMOVED.
- MAINTAIN CONTINUITY OF FINISHED SURFACE WITH LIKE QUALITIES AND CONSTRUCTION AND WITH LIKE 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.
- COORDINATE ALL DEMOLITION AND RESTORATION WORK WITH OWNERS. USE MATERIALS FOR PATCHING THAT ARE IDENTICAL TO EXISTING MATERIALS.

GENERAL MECHANICAL, ELECTRICAL AND PLUMBING DEMOLITION NOTES

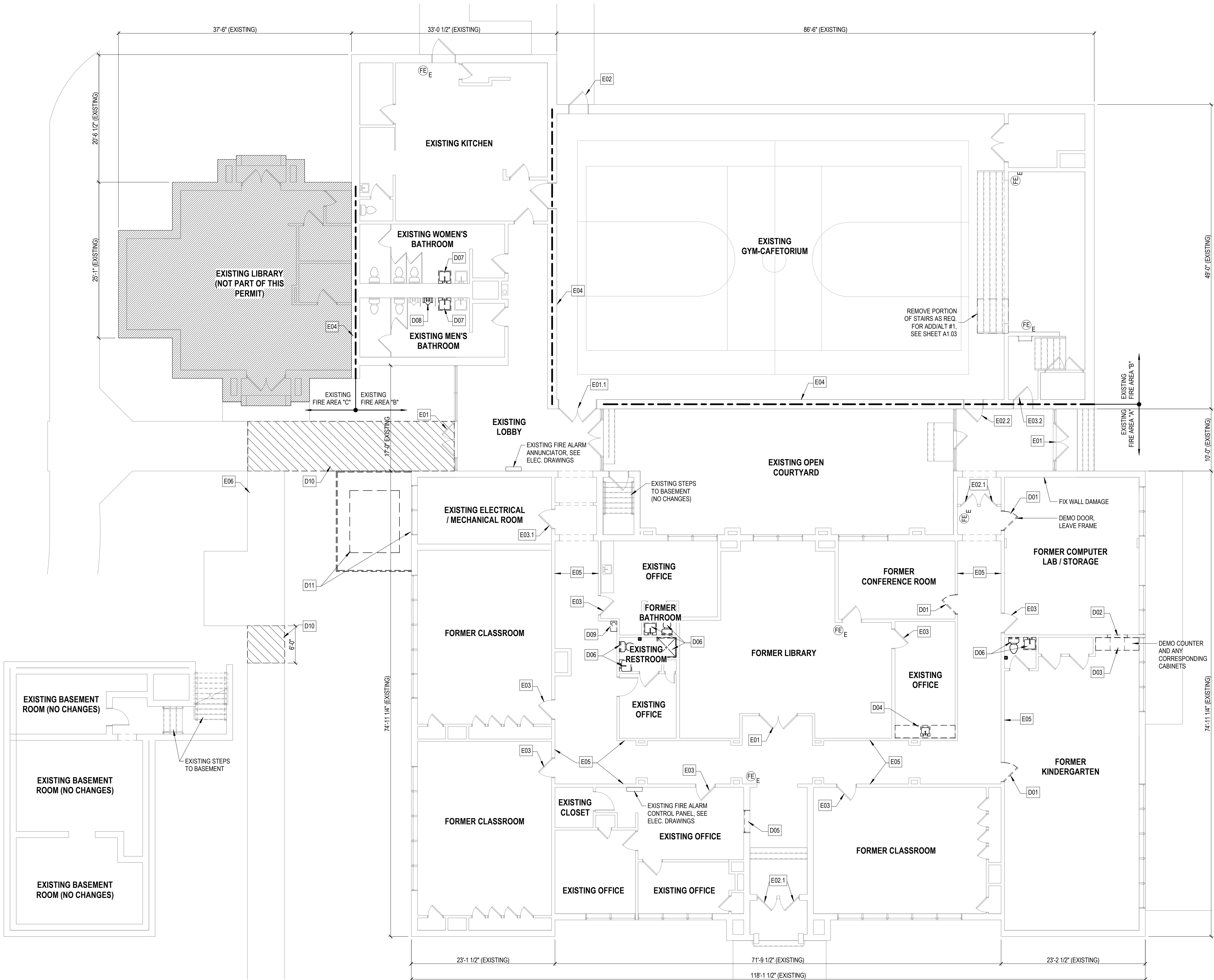
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ARCHITECT AND COORDINATE INSPECTIONS (IF REQUIRED) BY STATE AGENCIES AND MEET ANY APPLICABLE CODE FOR REUSE OF EXISTING PLUMBING FIXTURES, DIFFUSERS AND DUCTWORK.
- AFTER REMOVAL OF PLUMBING FIXTURES, CAP WASTE LINES BELOW FLOOR SLAB AND SUPPLY LINES ABOVE CEILING.
- AT ALL AREAS WHERE MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT IS REMOVED, PROPERLY CAP AND TERMINATE ALL UTILITIES AS REQUIRED BY ALL PREVAILING NATIONAL AND LOCAL CODES.

GENERAL DEMOLITION NOTES

- DRAWINGS OF EXISTING CONDITIONS HAVE BEEN COMPILED FROM EXISTING DATA SUPPLIED BY THE OWNER AND BASED ON FIELD INVESTIGATIONS. THE ARCHITECT MAKES NO WARRANTY EITHER EXPRESSED OR IMPLIED, FOR THE ACCURACY OR COMPLETENESS OF THE EXISTING INFORMATION RECORDED. VERIFY ALL EXISTING CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
- PROVIDE ALL NECESSARY BARRICADES AND OTHER FORMS OF PROTECTION AS REQUIRED TO PROTECT THE GENERAL PUBLIC FROM INJURY DUE TO DEMO WORK.
- WHERE ITEMS ARE TO BE REMOVED THE CONTRACTOR SHALL BE CAUTIONED NOT TO DAMAGE ITEMS THAT ARE TO BE RETAINED BY OWNER OR RELOCATED. ALL EXPOSED OR DAMAGED AREAS, AFTER REMOVAL OF ITEMS, SHALL BE REPAIRED.
- DEMOLITION WORK SHALL BE GOVERNED BY THE EXTENT OF NEW CONSTRUCTION INVOLVED. CONTRACTOR SHALL VERIFY AND COORDINATE DEMOLITION WORK WITH RESPECT TO THE NEW CONSTRUCTION. CONTRACTOR TO VERIFY EXISTING CONDITIONS BEFORE START OF WORK. REMOVAL OF EXISTING EQUIPMENT, PIPING, DUCTS, AND SIMILAR UTILITIES SHALL INCLUDE ALL ANCHORS, HANGERS, AND OTHER ACCESSORIES. AFTER REMOVAL, FLOORS,

EXISTING NOTES	
E01	EXISTING (2) 3'-0" DOORS W/ EXISTING PANIC HARDWARE. (NO CHANGE REQUIRED)
E01.1	EXISTING (2) 3'-0" DOORS W/ EXISTING PANIC HARDWARE, 90-MINUTE FIRERATED DOORS AND FRAME (NO CHANGE REQUIRED)
E02	EXISTING 3'-0" DOORS W/ EXISTING PANIC HARDWARE (NO CHANGE REQUIRED)
E02.1	EXISTING 3'-0" DOORS W/ EXISTING PANIC HARDWARE, 20-MINUTE FIRERATED DOOR AND FRAME (NO CHANGE REQUIRED)
E02.2	EXISTING 3'-0" DOORS W/ EXISTING PANIC HARDWARE, 90-MINUTE FIRERATED DOOR AND FRAM (NO CHANGE REQUIRED)
E03	EXISTING 3'-0" DOORS W/ EXISTING LEVER HARDWARE, 20-MINUTE FIRERATED DOOR AND FRAME (NO CHANGE REQUIRED)
E03.1	EXISTING 3'-0" DOORS W/ EXISTING LEVER HARDWARE, 45-MINUTE FIRERATED DOOR AND FRAME (NO CHANGE REQUIRED)
E03.2	EXISTING 3'-0" DOORS W/ EXISTING LEVER HARDWARE, 90-MINUTE FIRERATED DOOR AND FRAME (NO CHANGE REQUIRED)
E04	EXISTING 2-HOUR RATED CMU FIRE BARRIER, CONTINUED FROM SLAB TO UNDERSIDE OR ABOVE EXISTING ROOF
E05	EXISTING WOOD FRAME AND GWB (OR PLASTER / LATHE) CORRIDOR WALL, CONTINUED TO UNDERSIDE OF EXISTING CORRIDOR PLASTER / GWB CEILING
E06	EXISTING SIDEWALK

- WALLS AND CEILINGS SHALL BE FINISHED TO MATCH ADJOINING SURFACES OR SHALL BE PREPARED TO RECEIVE NEW FINISHES AS INDICATED IN THE NEW FINISH SCHEDULE. MAINTAIN EXISTING FINISHES AS NOTED ON THE NEW FINISH SCHEDULE.
- MATCH THICKNESS OF EXISTING WALL AND CEILING FINISH MATERIAL WHERE PATCHING AND REPAIRING IS REQUIRED.
 - COORDINATE DEMOLITION PLANS WITH PLANS FOR NEW CONSTRUCTION FOR EXTENT OF REMOVAL. REMOVE ONLY THOSE PORTIONS OF WALLS AND FLOORS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION. TAKE REASONABLE CARE IN REMOVAL OF ITEMS TO BE RELOCATED AND REUSED.
 - CONTRACTOR SHALL CHECK ALL EXISTING CORRIDOR WALLS IN THOSE AREAS OF RENOVATION FOR OPENINGS NOT SPECIFICALLY NOTED ON THESE DRAWINGS. ANY OPENINGS SHALL BE CLOSED TIGHT AS REQUIRED, TO MATCH EXISTING CONSTRUCTION AND TO MAINTAIN NEW OR EXISTING WALL RATING. THIS IS TYPICAL FOR ALL WORK DONE IN AREAS WHERE RENOVATION IS BEING DONE.
 - ALL WALLS SHOWN BY DASHED LINES ARE TO BE REMOVED COMPLETELY, ALONG WITH DOORS AND FRAMES, ELECTRICAL ITEMS, PLUMBING FIXTURES, CASEWORK, AND SIMILAR INFRASTRUCTURE.
 - SEE LIMITS OF CONSTRUCTION ON NEW FLOOR PLANS. GENERALLY, ROOMS OUTSIDE OF LIMITS OF CONSTRUCTION ARE NOT TO HAVE ANY WORK DONE IN THEM WITH THE EXCEPTION OF FLOOR OR CEILING TO BE PATCHED OR REPAIRED FOR INSTALLATION OF NEW WORK. CONTRACTOR SHALL USE EXISTING FLOOR OR CEILING MATERIAL FOR REPAIR, SALVAGED FROM AREAS WHERE EXISTING MATERIALS ARE REMOVED OR ALL NEW MATERIAL IN A ROOM IF NECESSARY THAT MATCH EXISTING FINISHES. SEE "FINISH SCHEDULE" FOR ANY ROOMS TO RECEIVE NEW PAINT.
 - 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 SHALL REMOVE EXISTING FINISHES AS NECESSARY PRIOR TO INSTALLATION OF NEW FINISHES.
 - ALL FLOORS AND WALLS OF EXISTING AREAS THAT WILL BE AFFECTED BY CONSTRUCTION PROCEDURES INCLUDING DEBRIS REMOVAL SHALL RECEIVE PROTECTION. DUST BARRIERS SHALL BE INSTALLED BETWEEN WORK AREAS, UNDISTURBED AREAS AND OCCUPIED SPACES.
 - PROVIDE TEMPORARY SHORING OF EXISTING STRUCTURE ABOVE AS REQUIRED WHERE ANY EXISTING LOAD BEARING ELEMENTS (OR PORTION OF) ARE TO BE REMOVED AS REQUIRED BY FLOOR PLAN; PROVIDE NEW HEADER/STRUCTURE/INFILL PER NEW FLOOR PLAN, REPAIR/PATCH WALLS/FLOOR/CEILING AS REQUIRED.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, INCLUDING BUT NOT LIMITED TO: TEMPORARY PERMANENT BEAMS AND LINETS; SHORING OF EXISTING CONSTRUCTION; AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY RELATE TO THE WORK OF THIS PROJECT.
 - ALL DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE UNLESS NOTED OTHERWISE.
 - PATCH AND REPAIR TO MATCH EXISTING CEILINGS, FLOORS, OR WALL FINISHES AFFECTED BY DEMOLITION WORK UNLESS OTHERWISE NOTED ON THE PLANS. NEW WORK TO HAVE SMOOTH AND LEVEL TRANSITION WITH THE EXISTING CONSTRUCTION.
 - ANY ABANDONED FLOOR PENETRATIONS SHALL BE PATCHED WITH CONCRETE AND REPAIRED TO MATCH EXISTING CONSTRUCTION AND TO MAINTAIN FLOOR INTEGRITY.
 - ANY ITEMS REMOVED BY CONTRACTOR FROM WALLS TO HAVE THE REMAINING HOLE PATCHED TO MATCH THE EXISTING CONSTRUCTION.
 - ENSURE THAT DEMOLITION WORK DOES NOT INTERFERE WITH OR PROHIBIT THE CONTINUING OCCUPATION OF ADJACENT OPERATIONS WITHIN THE STRUCTURE. THIS INCLUDES BUT IS NOT LIMITED TO THE SELECTIVE DEMOLITION OF PARTITIONS, ELECTRICAL AND MECHANICAL SYSTEMS. INFORM THE OWNER A MINIMUM OF 72 HOURS OF DEMOLITION ACTIVITIES THAT WILL AFFECT NORMAL OPERATION OF THE BUILDING.
 - ALL WORK SHALL BE SCHEDULED IN A MANNER TO MAINTAIN THE OWNERS CONTINUOUS USE OF THE BUILDING.

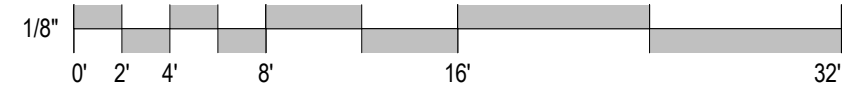
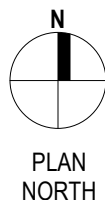


EXISTING BASEMENT FLOOR PLAN

2
D1.01 1/8" = 1'-0"

EXISTING / DEMOLITION FLOOR PLAN

1
D1.01 1/8" = 1'-0"



C:\H06020\00101800 BENT MOUNTAIN COMMUNITY CENTER\Draw 2\Revised\Change0316001800 BENT MOUNTAIN COMMUNITY CENTER AS BUILT.dwg, AT:14



BALZER
& ASSOCIATES

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



EXISTING CEILING NOTES

C01	EXISTING DAMAGED PLASTER CEILING AND POSSIBLE DAMAGE TO INSULATION ABOVE FROM PREVIOUS WATER DAMAGE. PREP FOR REPAIR / NEW CEILING WORK.
C01.1	EXISTING HOLE IN PLASTER CEILING AND DAMAGE TO INSULATION ABOVE FROM PREVIOUS WATER DAMAGE. PREP FOR REPAIR / NEW CEILING WORK.
C02	EXISTING DAMAGED A.C.T. CEILING AND POSSIBLE DAMAGE TO INSULATION ABOVE FROM PREVIOUS WATER DAMAGE. REMOVE AS REQUIRED
C03	TEMPORARILY REMOVE EXISTING ACT GRID AND TILES AS REQUIRED FOR ANY DUCTWORK AND HVAC MODIFICATIONS
C04	REMOVE EXISTING WALL AS REQUIRED FOR NEW HVAC DUCT/GRILLE

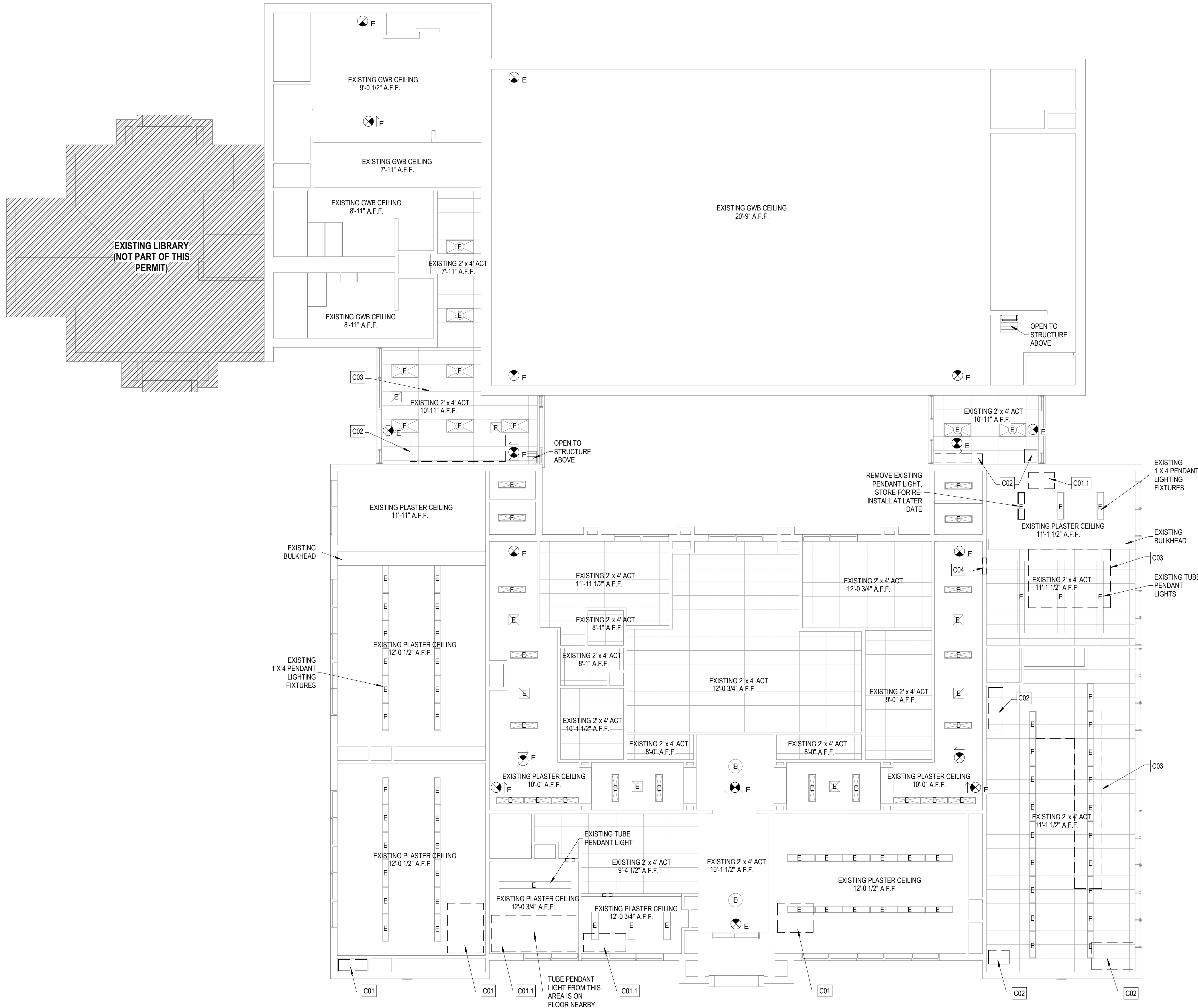
EXISTING CEILING LEGEND

	EXISTING TYPICAL 2' X 4' ACT CEILING GRID SYSTEM
	CEILING OPEN TO STRUCTURAL ABOVE
	EXISTING SUPPLY OR RETURN CEILING UNIT
	2' X 4' LIGHT FIXTURE (RECESSED OR MOUNTED)
	1' X 4' LIGHT FIXTURE (MOUNTED)
	EXISTING TUBE PENDANT LIGHT FIXTURE, REFER TO ELEC DRAWINGS
	EXISTING TYPICAL 1' X 4' LIGHT FIXTURE, REFER TO ELEC DRAWINGS
	EXISTING ROUND PENDANT LIGHT FIXTURE
	EXISTING ILLUMINATED EXIT LIGHT (TIED TO EMERGENCY CIRCUIT, SEE ELEC DRAWINGS)
	EXISTING ILLUMINATED EXIT LIGHT WITH DIRECTIONAL ARROW (TIED TO EMERGENCY CIRCUIT, SEE ELEC DRAWINGS)

FIRE ALARM NOTE: SEE ELECTRICAL DRAWINGS FOR ALL FIRE ALARM SYSTEM DEVICES AND CHANGES.

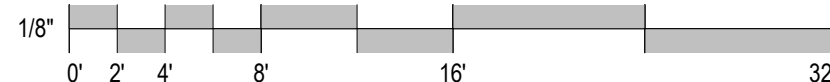
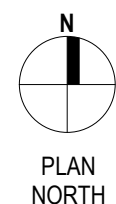
EMERGENCY LIGHTING NOTE: SEE ELECTRICAL DRAWINGS FOR ALL MODIFICATIONS AND ADDITIONS TO EMERGENCY LIGHTING AS REQUIRED TO MEET CODE.

SEE SHEET D1.01 FOR GENERAL NOTES REGARDING EXISTING AND DEMOLITION REQUIREMENTS, INCLUDING NOTES REGARDING ASBESTOS-CONTAINING MATERIALS (ACMS)



1
D1.02 / 1/8" = 1'-0"

EXISTING CEILING PLAN



BENT MOUNTAIN COMMUNITY CENTER

"CHANGE-OF-USE" AND INTERIOR RENOVATIONS

EXISTING / DEMOLITION CEILING PLAN

1048 TINSLEY LANE
BENT MOUNTAIN, VIRGINIA 24059

DRAWN BY MEA
DESIGNED BY XXX
CHECKED BY RWP
DATE 10/06/2020
SCALE As indicated
REVISIONS

D1.02

PROJECT NO 03160018.00



**BALZER
& ASSOCIATES**

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



RENOVATION CEILING NOTES

NC01	REPAIR WATER DAMAGED PLASTER CEILING AND ANY DAMAGED INSULATION IN AREAS SHOWN IN PLAN AND ANY OTHERS NOT NOTED BUT WITH NOTICEABLE DAMAGE
NC02	REPLACE WATER DAMAGED 2' X 4' ACT CEILING TILES AND ANY DAMAGED INSULATION IN AREAS SHOWN IN PLAN AND ANY OTHERS NOT NOTED BUT WITH NOTICEABLE DAMAGE
NC03	RE-INSTALL EXISTING ACT GRID AND TILES

RENOVATION CEILING LEGEND

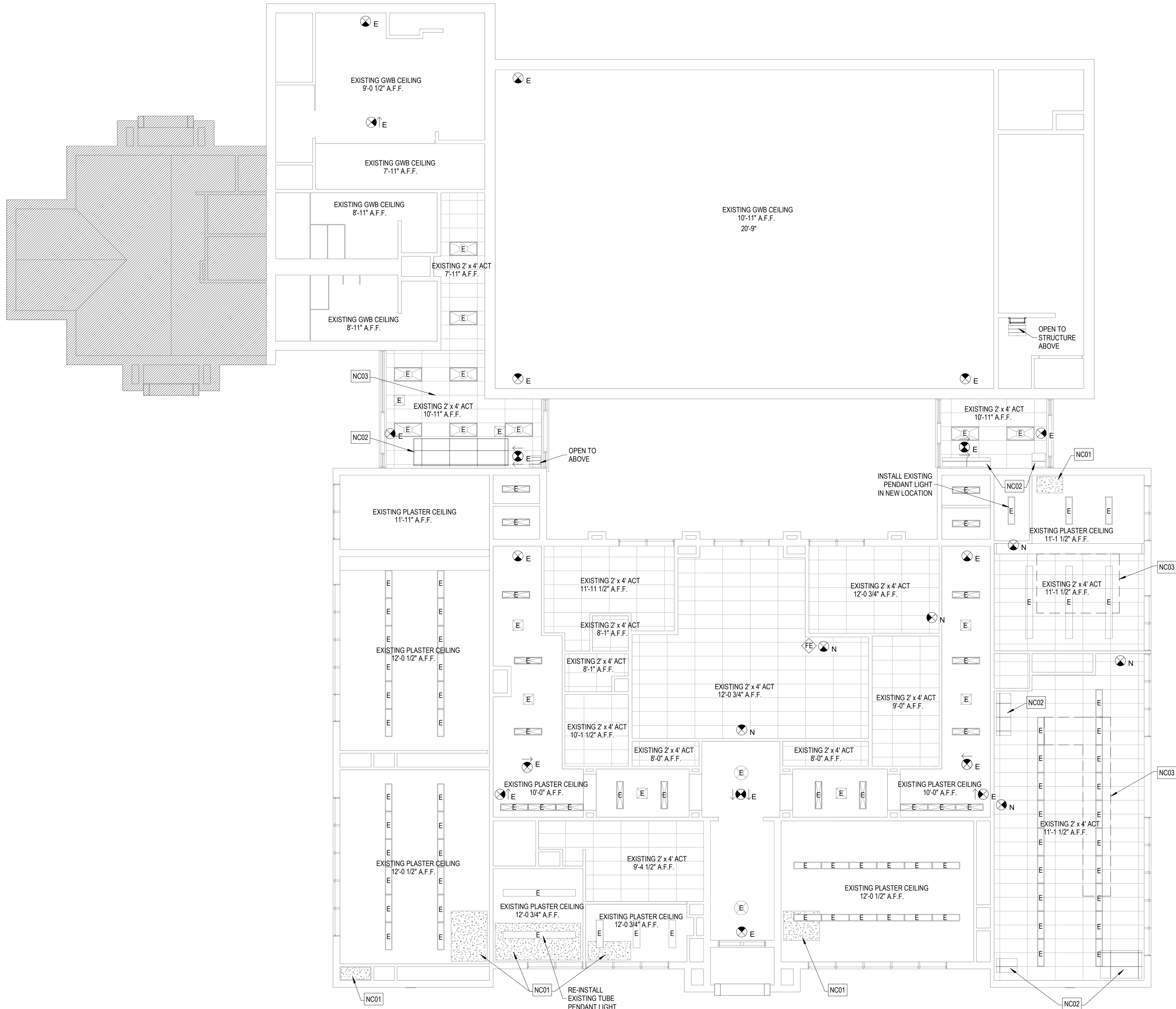
	EXISTING TYPICAL 2' X 4' ACT CEILING GRID SYSTEM
	CEILING OPEN TO STRUCTURAL ABOVE
	SUPPLY OR RETURN CEILING UNIT
	2' X 4' LIGHT FIXTURE (RECESSED)
	1' X 4' LIGHT FIXTURE (MOUNTED)
	TUBE PENDANT LIGHT FIXTURE, REFER TO ELEC DRAWINGS
	TYPICAL 1' X 4' LIGHT FIXTURE, REFER TO ELEC DRAWINGS
	ROUND PENDANT LIGHT FIXTURE
	EXISTING ILLUMINATED EXIT LIGHT (TIED TO EMERGENCY CIRCUIT, SEE ELEC DRAWINGS)
	NEW ILLUMINATED EXIT LIGHT (TIED TO EMERGENCY CIRCUIT, SEE ELEC DRAWINGS)
	EXISTING ILLUMINATED EXIT LIGHT WITH DIRECTIONAL ARROW (TIED TO EMERGENCY CIRCUIT, SEE ELEC DRAWINGS)
	NEW ILLUMINATED EXIT LIGHT WITH DIRECTIONAL ARROW (TIED TO EMERGENCY CIRCUIT, SEE ELEC DRAWINGS)

FIRE ALARM NOTE: SEE ELECTRICAL
DRAWINGS FOR ALL FIRE ALARM SYSTEM
DEVICES AND CHANGES.

EMERGENCY LIGHTING NOTE: SEE
ELECTRICAL DRAWINGS FOR ALL
MODIFICATIONS AND ADDITIONS TO
EMERGENCY LIGHTING AS REQUIRED TO
MEET CODE.

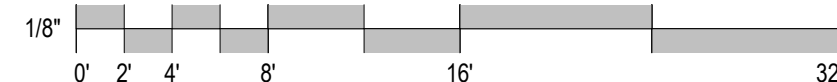
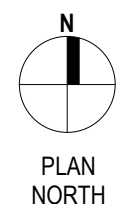
GENERAL REFLECTED CEILING PLAN NOTES

1. CEILING PLAN LAYOUTS SHALL BE
COORDINATED WITH MECHANICAL AND
ELECTRICAL DRAWINGS, AND OWNERS
AUDIOVISUAL SYSTEM REQUIREMENTS.
2. GENERAL CONTRACTOR SHALL COORDINATE
ACCESS PANEL LOCATIONS AND SIZES
REQUIRED IN ANY HARD CEILINGS BASED ON
ANY MECHANICAL OR ELECTRICAL
EQUIPMENT LOCATED ABOVE "HARD"
CEILINGS.
3. REFER TO GENERAL FINISH NOTES AND
FINISH SCHEDULES FOR ADDITIONAL
INFORMATION.
4. OWNER PROVIDED SPEAKER SYSTEM NOT
SHOWN.
5. OWNER PROVIDED SECURITY SYSTEM NOT
SHOWN.



RENOVATION CEILING PLAN

1
A1.02 / 1/8" = 1'-0"



BENT MOUNTAIN COMMUNITY CENTER "CHANGE-OF-USE" AND INTERIOR RENOVATIONS RENOVATION REFLECTED CEILING PLAN

DRAWN BY MEA
DESIGNED BY XXX
CHECKED BY RWP
DATE 10/06/2020
SCALE As indicated
REVISIONS

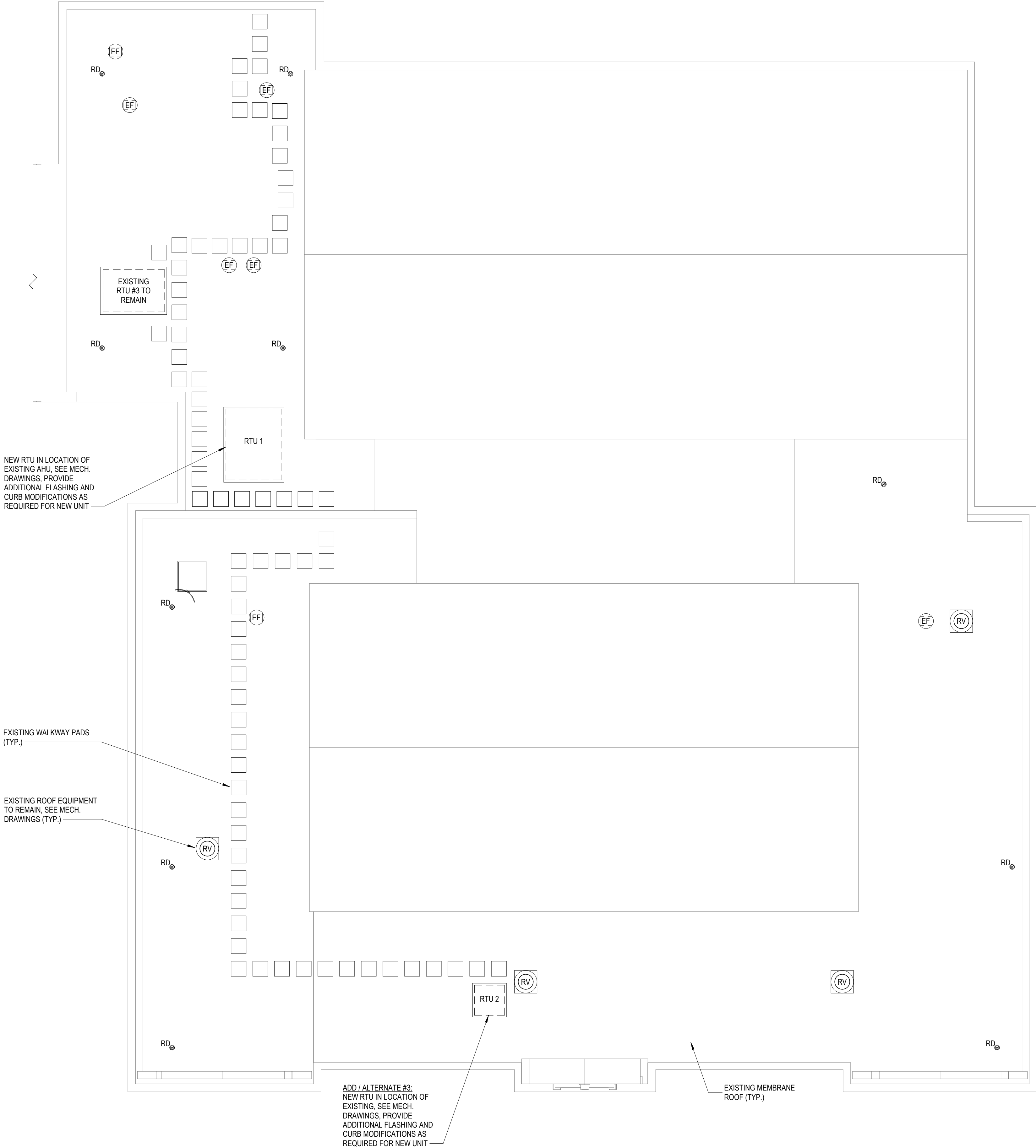
A1.02

PROJECT NO 03160018.00

ROOM FINISH SCHEDULE									
ROOM NO.	ROOM NAME	FLOOR	BASE	WALL		CEILING		COMMENTS	
				MTL.	FINISH	MTL.	FINISH		
100	EXISTING LOBBY		EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 3, 8	
101	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
102	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
103	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
104	VESTIBULE	EXIST.	EXIST.	EXIST./GWB	EXIST./PAINT	EXIST.	EXIST.	NOTE 5	
105	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST./PAINT	EXIST.	EXIST.	NOTE 6	
106	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST./PAINT	EXIST.	EXIST.	NOTE 6	
107	VESTIBULE	EXIST.	EXIST.	EXIST.	EXIST./PAINT	EXIST.	EXIST.	NOTE 3	
108	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
109	CORRIDOOR	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
110	EXISTING ELECTRICAL / MECHANICAL ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
111	CLASSROOM / MEETING ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
112	CLASSROOM / MEETING ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST./GWB	PAINT	NOTE 4, 10	
113	EXISTING OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
114	CLOSET	EXIST.	EXIST.	EXIST.	PAINT	EXIST.	EXIST.	NOTE 7	
115	EXISTING OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
116	EXISTING RESTROOM	EXIST.	EXIST.	EXIST.	PAINT	EXIST.	EXIST.	NOTE 7	
117	EXISTING OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 8	
118	EXISTING OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST./GWB	PAINT	NOTE 4, 10	
119	EXISTING OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST./GWB	PAINT	NOTE 4, 10	
120	EXISTING CLOSET	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
121	MEETING ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 8	
122	CLASSROOM / MEETING ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST./GWB	PAINT	NOTE 4, 10	
123	CLASSROOM / MEETING ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 3, 6, 8	
124	CLASSROOM / MEETING ROOM	EXIST.	EXIST.	EXIST./GWB	EXIST./PAINT	EXIST./ACT/GWB	EXIST./PAINT	NOTE 2, 3, 4, 6, 8, 10	
125	EXISTING OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 8	
126	OPEN OFFICE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 6, 8	
127	EXISTING MECHANICAL	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
128	UTILITY ROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
129	EXISTING GYM-CAFETORIUM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
130	EXISTING MEN'S BATHROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 9	
131	EXISTING WOMEN'S BATHROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	NOTE 9	
132	EXISTING KITCHEN	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
133	KITCHEN RESTROOM	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
134	KITCHEN STORAGE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		
135	KITCHEN STORAGE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		

GENERAL FINISH NOTES

- FINISHES SHOWN HEREIN ARE SCHEMATIC. CONSULT WITH OWNER FOR ALL REQUIRED FINISH COLORS/TEXTURES. OWNER SHALL HAVE CHOICE OF COLOR FROM MANUFACTURER. FULL RANGE OF COLORS FOR ALL FINISHES SPECIFIED.
- DAMAGED INTERIOR WALLS SHALL BE PAINTED TO MATCH EXISTING WALLS, CONSISTING OF (1) COAT OF INTERIOR LATEX PRIMER AND (2) COATS OF INTERIOR FINISH LATEX.
- DAMAGED ACT SHALL BE REPLACED WITH NEW CEILING TILES TO MATCH EXISTING. SEE CEILING PLAN KEYNOTES.
- DAMAGED PLASTER CEILING SHALL BE REPAIRED AND PAINTED TO MATCH EXISTING, CONSISTING OF (1) COAT OF INTERIOR LATEX PRIMER AND (2) COATS OF INTERIOR FINISH LATEX. PAINT ENTIRE CEILING IN ROOM.
- SEE KEYNOTES FOR WALL OPENING INFILL WITH GWB, PAINT ENTIRE WALL AT INFILL FROM CORNER TO CORNER.
- PATCH PAINT AT NEW DOOR(S) / FRAME(S), BLEND PAINT WITH EXISTING WALL, OR, IF NOT ABLE TO BLEND, PAINT ENTIRE WALL CORNER TO CORNER.
- PATCH / REPAIR GWB WALLS WHERE PLUMBING FIXTURES REMOVED. PAINT ENTIRE ROOM.
- REPLACE ANY ACT CEILING TILES OR GRID THAT ARE DAMAGED DURING DUCTWORK / HVAC INSTALL.
- PATCH / REPAIR GWB WALL WHERE PLUMBING FIXTURES MOVED. PAINT ENTIRE "WET" WALL BEHIND FIXTURES. (REMOVE AND REINSTALL ANY ACCESSORIES IF REQUIRED.)
- ANY EXISTING PLASTER CEILING REPAIRED WITH GWB SHALL INCLUDE THIN-COATED PLASTER AS REQUIRED TO FINISH TO "LIKE NEW" APPEARANCE.



2
A1.03
1/8" = 1'-0"

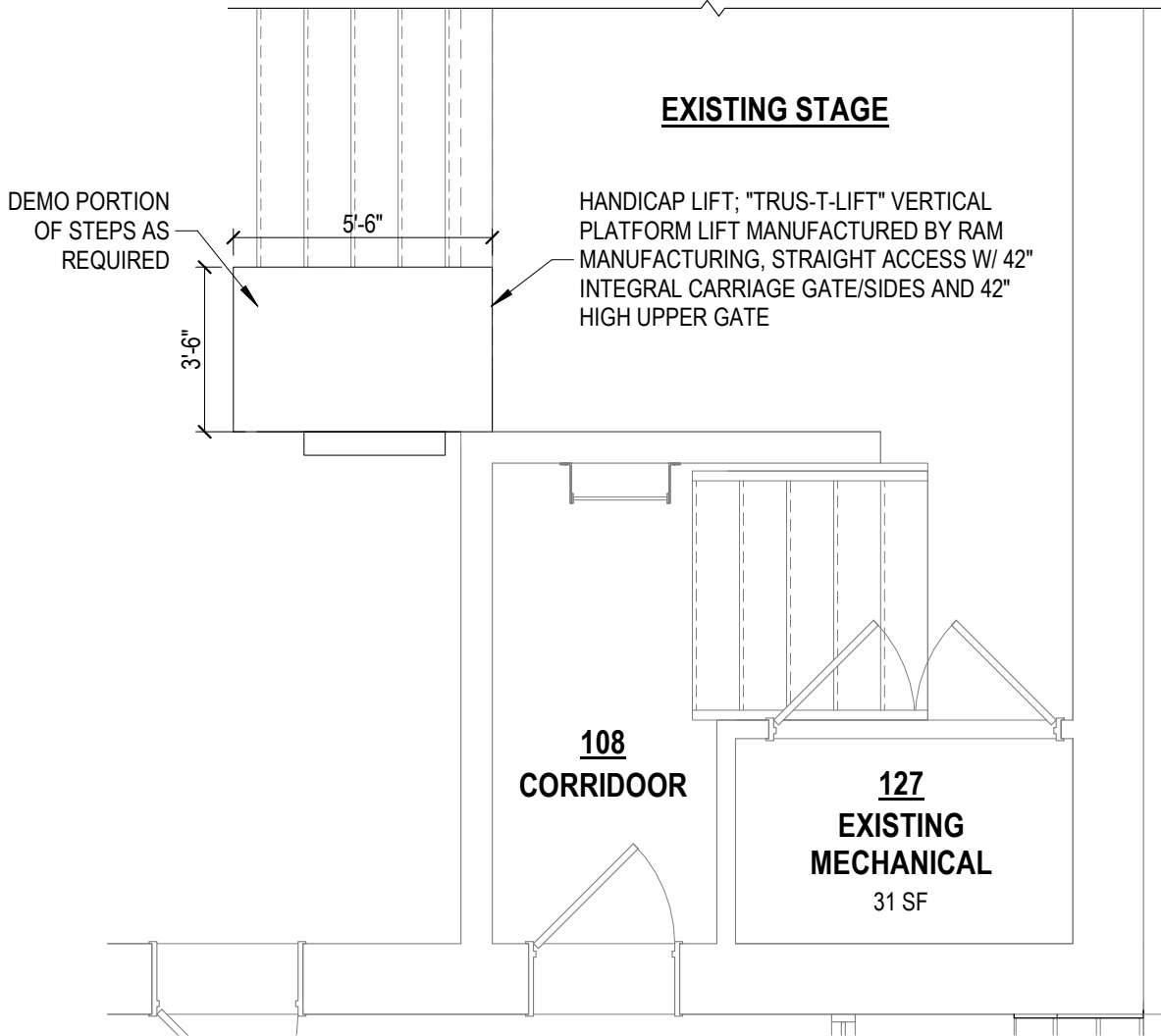
LIST OF ADD/ALTERNATES

THE FOLLOWING LIST INCLUDES ITEMS TO BE BID AS SEPARATE FROM THE BASE BID.

ADD/ALTERNATE #1: INSTALL OF NEW ACCESSIBLE LIFT FOR GYM STAGE, AS SHOWN ON SHEET A1.03, INCLUDING NEW POWER FEED SPECIFICALLY SHOWN IN ELECTRICAL DRAWINGS.

ADD/ALTERNATE #2: RE-LAMP ALL EXISTING LIGHT FIXTURES AS NOTED ON ELECTRICAL SHEETS E2.1 (SHEET SPECIFIC NOTE 7) AND E3.1 (GENERAL NOTE 1).

ADD/ALTERNATE #3: REMOVE AND REPLACE RTU #3 AS NOTED IN MECHANICAL DRAWINGS.



1
A1.03
1/4" = 1'-0"



BALZER & ASSOCIATES

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



BENT MOUNTAIN COMMUNITY CENTER

"CHANGE-OF-USE" AND INTERIOR RENOVATIONS

SCHEDULES AND DETAILS

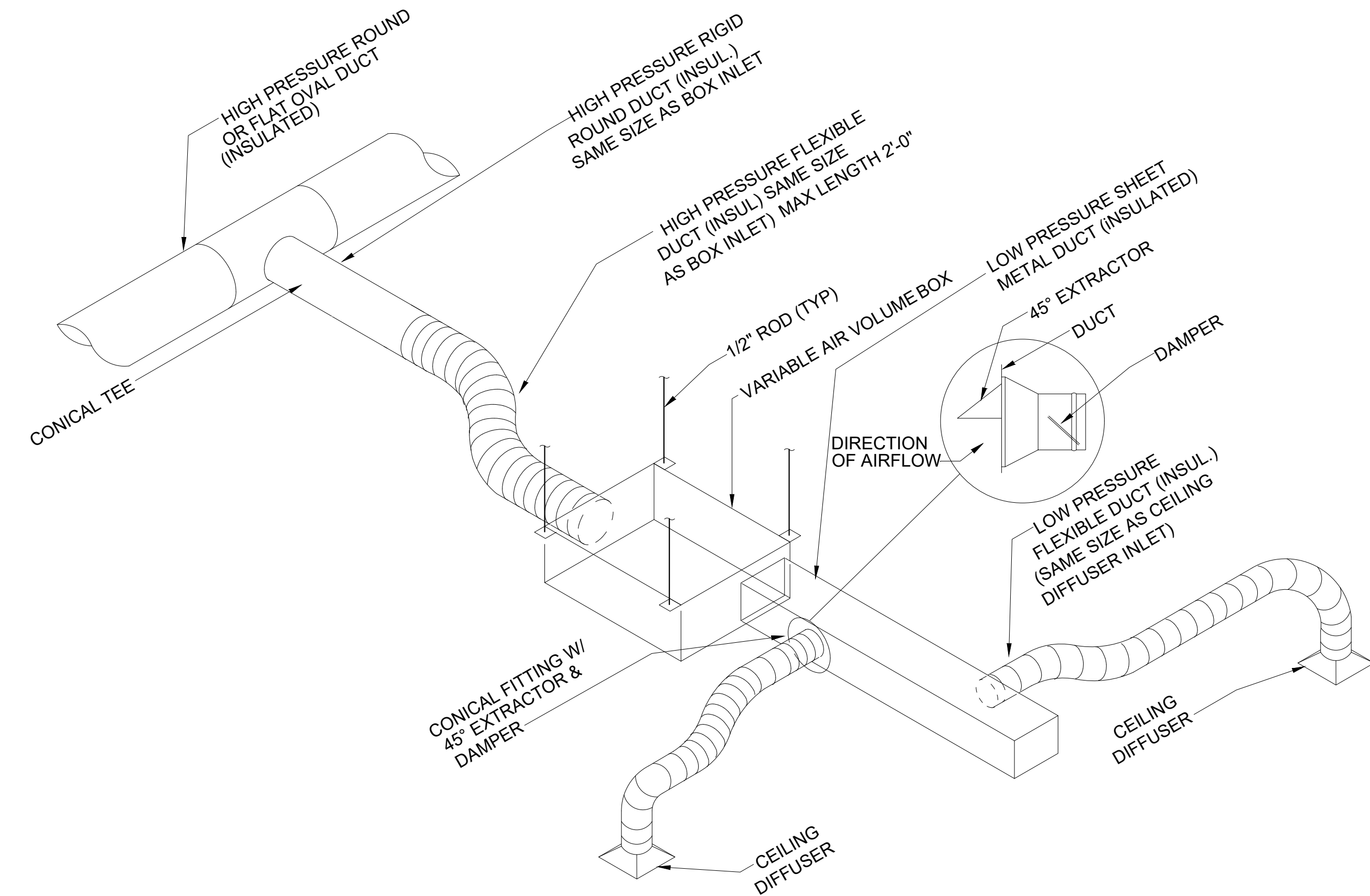
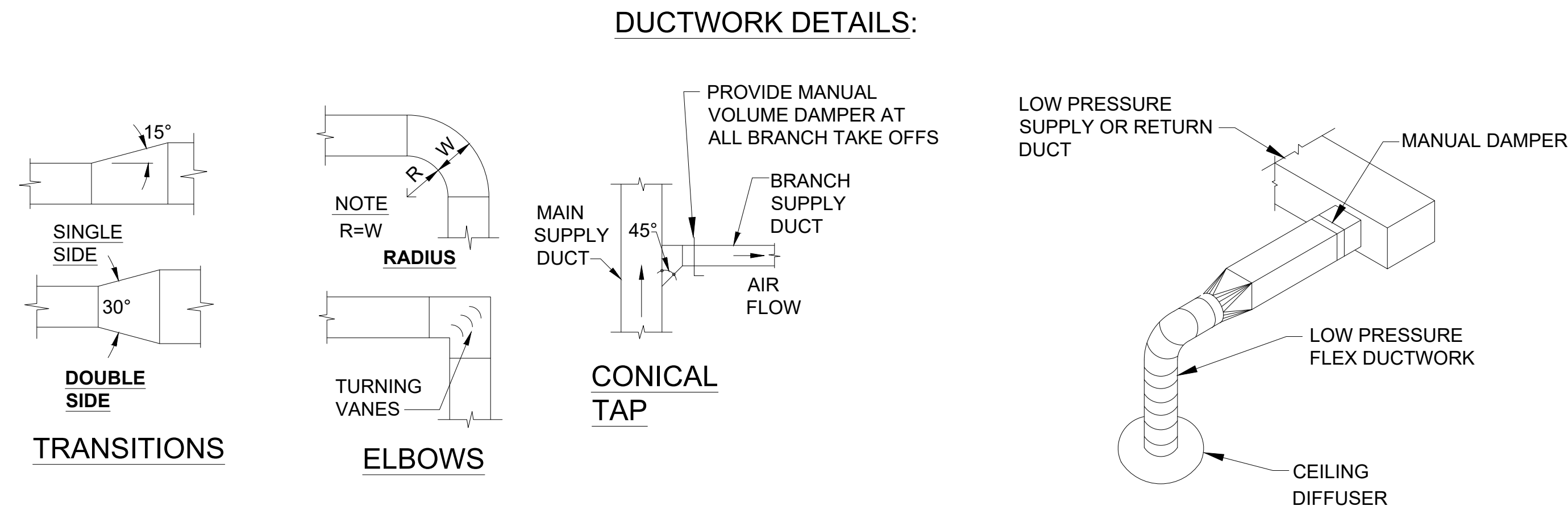
1048 TINGLEY LANE
BENT MOUNTAIN, VIRGINIA 24069

DRAWN BY MEA
DESIGNED BY XXX
CHECKED BY RWP
DATE 10/06/2020
SCALE As indicated
REVISIONS

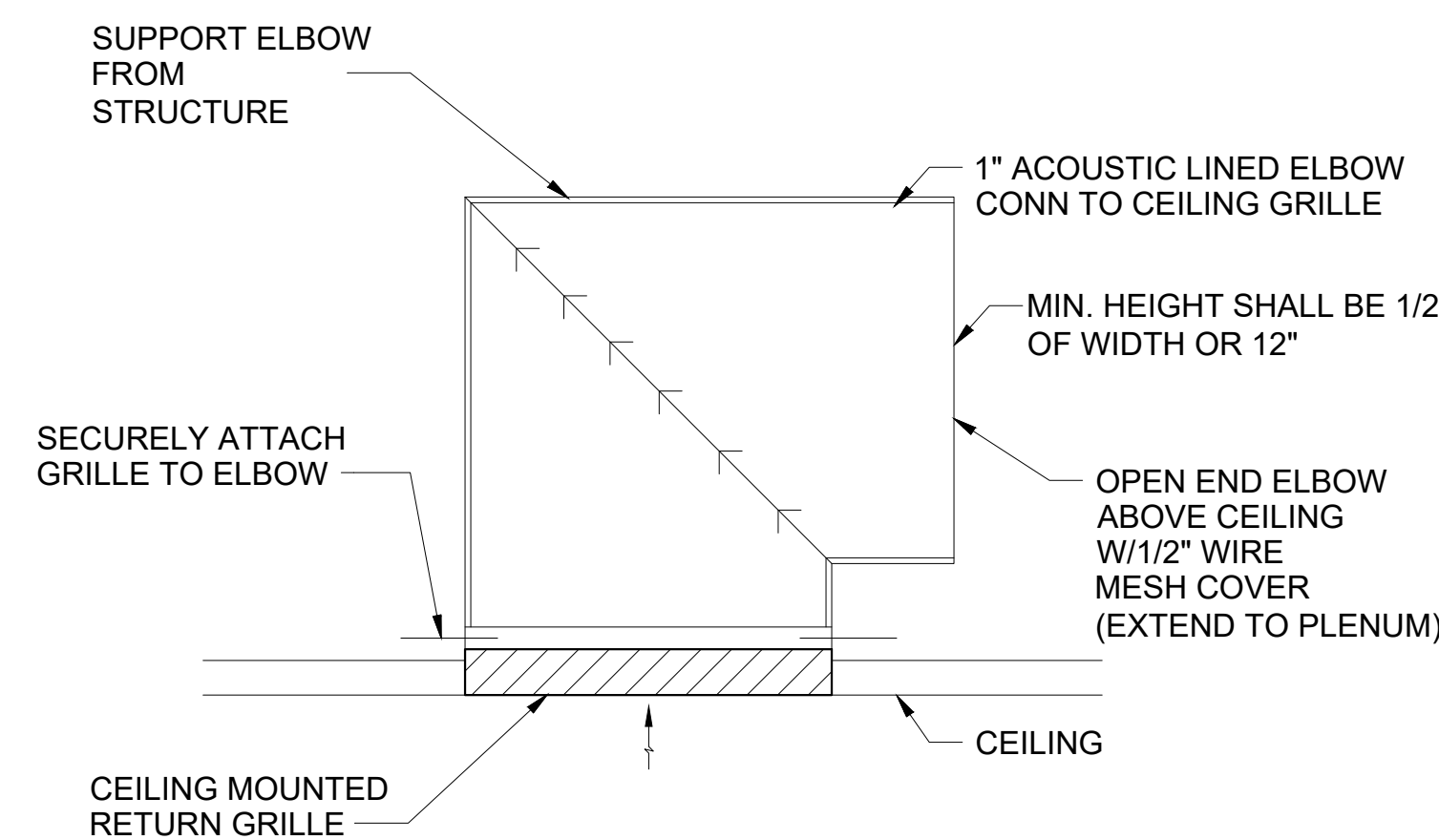
A1.03

PROJECT NO

03160018.00



VAV BOX DUCTWORK CONNECTION DETAIL:



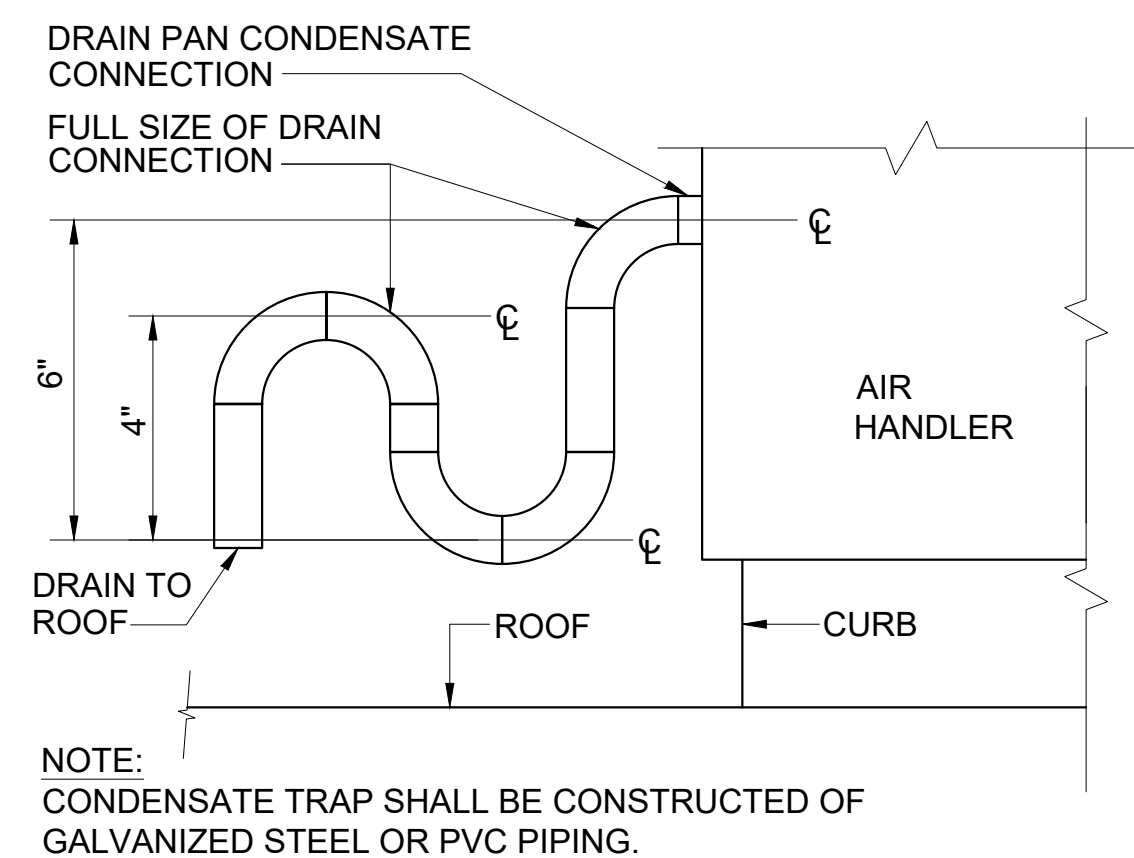
NOTE ;

1. OVER-SIZE DUCTWORK WHEN REQUIRED TO MAINTAIN MINIMUM 4" CLEAR INSIDE LINING.

RETURN GRILLE DETAIL:

GENERAL MECHANICAL NOTES AND SPECIFICATIONS:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT 2015 UNIFIED VIRGINIA BUILDING CODE, ALL FEDERAL, STATE, AND CITY CODES, ORDINANCES, AND STANDARDS.
2. PROVIDE OPERATION AND MAINTENANCE MANUALS FOR ALL NEW EQUIPMENT TO OWNER.
3. ALL WORK PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED WITH A 1-YEAR WARRANTY.
4. IT IS THE INTENT OF THESE DOCUMENTS THAT THE CONTRACTOR PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES AND CONTROLS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.
5. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. NOT ALL FITTINGS, OFFSETS, VENTS, OR DRAINS ARE SHOWN. THE CONTRACTOR SHALL INCLUDE ALL OFFSETS, VENTS, AND DRAINS AS REQUIRED FOR A FULLY FUNCTIONING SYSTEM.
6. IN AREAS WITH UNFINISHED CEILINGS, DUCTWORK AND PIPING SHALL BE ROUTED AS TIGHT TO THE STRUCTURE AS POSSIBLE.
7. ENSURE MECHANICAL EQUIPMENT IS INSTALLED TO PROVIDE SUFFICIENT CLEARANCE FOR COIL PULL, AND MINIMUM MANUFACTURER RECOMMENDED MAINTENANCE ACCESS TO EQUIPMENT.
8. ALL SUPPLY AIR DIFFUSERS, RETURN, AND EXHAUST GRILLES SHALL BE INSTALLED WITH BALANCING DAMPER LOCATED IN DUCT RUN OUT. DIFFUSERS AND GRILLES SHALL HAVE AN OPPOSED BLADE DAMPER ONLY WHEN DUCT DAMPERS ARE INACCESSIBLE.
9. ALL PIPING SHALL BE LABELED FOR ITS USAGE. ALL EQUIPMENT SHALL BE PROVIDED WITH AN ENGRAVED EQUIPMENT TAG.
11. DUCT INSULATION SHALL BE IN COMPLIANCE WITH THE 2015 IECC STANDARDS AND SHALL BE FIBERGLASS INSULATION, 1.0 LB. DENSITY, 0.27 BTUIN./SQ.FT./"F/HR. MAXIMUM "K" VALUE AT 75°F, WITH FACTORY APPLIED REINFORCED ALUMINUM FOIL VAPOR BARRIER. ALL SUPPLY DUCTWORK SHALL BE INSULATED AS WELL AS OUTSIDE AIR AND EXHAUST DUCTWORK FROM LOUVER TO ERV.
12. PROVIDE CAULKED SEAL AROUND ALL DUCT AND/OR PIPING PENETRATIONS THROUGH NON RATED FULL HEIGHT WALLS TO MINIMIZE SOUND TRANSFER.
13. FOR THE AIR CONDITIONING, HEATING AND VENTILATION SYSTEMS THE CONTRACTOR SHALL PROVIDE ALL SERVICES FOR TOTAL SYSTEM AIR TESTING AND BALANCING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING CHANGES IN PULLEYS, BELTS AND DAMPERS WHERE NECESSARY TO OBTAIN THE REQUIRED AIR VOLUME. THE CONTRACTOR SHALL PROVIDE ALL LABOR, ENGINEERING AND TEST EQUIPMENT REQUIRED TO ADJUST, TEST AND BALANCE ALL HEATING, VENTILATING, AIR CONDITIONING AND EXHAUST SYSTEMS. ALL PERSONNEL INVOLVED IN THE WORK SHALL BE EXPERIENCED AND TRAINED SPECIFICALLY IN THE TOTAL BALANCING OF MECHANICAL SYSTEMS. PROVIDE TYPED REPORT TO OWNER/ENGINEER FOR APPROVAL.
14. ALL NEW DUCTWORK AND EXISTING SUPPLY AND RETURN DUCTWORK SHALL BE MECHANICALLY CLEANED FROM THE DUCT INTERIOR TO REMOVE ALL VISIBLE CONTAMINANTS.



CONDENSATE DRAIN DETAIL:

HVAC LEGEND	
DUCTWORK	
	SUPPLY AIR DUCT, (RECTANGULAR)
	RETURN AIR DUCT, (RECTANGULAR)
	THERMOSTAT - 7 DAY PROGRAMMABLE
	TEMPERATURE SENSOR
	HUMIDITY SENSOR
	RECTANGULAR DUCTWORK (1ST FIG. SIDE SHOWN, 2ND SIDE NOT SHOWN)
	ROUND DUCTWORK
	FLEXIBLE DUCT, (ROUND)
	CEILING DIFFUSER (RECTANGULAR)
	DUCT TRANSITION, RECTANGULAR OR ROUND
AIR DEVICE TAG	
	AIRFLOW (CFM)
	INLET SIZE - TAG - # OF THROW DIRECTIONS
	INLET SIZE - TAG (RETURN ONLY)
EQUIPMENT TAG	
	EQUIPMENT TYPE ABBREVIATION
	UNIT MARK #
EQUIPMENT TAG	
	EQUIPMENT TYPE ABBREVIATION
	UNIT MARK #
	MVD, MANUAL VOLUME DAMPER
	MOTORIZED CONTROL DAMPER
	CONNECT TO EXISTING
	EXTENT OF DEMOLITION

STOTTSBERG
ENGINEERING

www.stottsberegeng.com
540-216-0331
Project #20029



BALZER
& ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle
Roanoke, VA 24018
540.772.9580



BENT MOUNTAIN COMMUNITY CENTER
RENOVATION
MECHANICAL GENERAL NOTES & DETAILS

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE AS INDICATED
REVISIONS

M1.01
PROJECT NO UNKNOWN

EXHAUST FAN SCHEDULE						
MARK	AIR FLOW (CFM)	ESP	NOM HP (WATTS)	DRIVE TYPE	V/FREQ./PH	BASIS OF DESIGN
F-5	155	0.25"	1/15	DIRECT	115/60/1	GREENHECK, G-060-VG

NOTES:
1. INTERLOCK FAN WITH RTU-1 OCCUPANCY SCHEDULE.
2. ROOF MOUNTED FANS SHALL BE PROVIDED WITH 12" ROOF CURB (REPLACE EXISTING CURB AS REQUIRED AND RE-SEAL ROOF AS REQUIRED).
3. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.

AIR DEVICE SCHEDULE			
MARK	SERVICE	FINISH	BASIS OF DESIGN
A	SUPPLY	WHITE	PRICE, SCD - SQUARE CODE DIFFUSER
B	RETURN	WHITE	PRICE, 80 - EGG CRATE GRILLE
C	RETURN	WHITE	PRICE, 630 SERIES

MARK	UNIT SIZE	INLET SIZE (IN.)	PRIMARY AIR		UNIT FAN					ELECTRIC REHEAT COIL				BASIS OF DESIGN (MANUFACTURER,MODEL#)
			MAX CFM	MIN CFM	DESIGN CFM	S.P. (IN H2O)	FAN HP	V/HZ/PH	MOTOR FLA	EATLAT (°F)	V/HZ/PH	KW	MCA / MOP	
FPU-1	30	10	1,310	440	1,460	0.25	1/2	208/60/3	4.5	65.5/91.5	208/60/3	12.0	47.3/50.0	PRICE FDC
FPU-2	30	10	1,310	440	1,460	0.25	1/2	208/60/3	4.5	65.5/91.5	208/60/3	12.0	47.3/50.0	PRICE FDC
FPU-3	10	5	280	85	280	0.25	1/4	208/60/3	2.9	65.5/93.7	208/60/3	2.5	12.3/15.0	PRICE FDC
FPU-4	10	5	280	85	280	0.25	1/4	208/60/3	2.9	65.5/93.7	208/60/3	2.5	12.3/15.0	PRICE FDC
FPU-5	10	10	600	240	800	0.25	1/4	208/60/3	2.9	65.5/91.2	208/60/3	6.5	26.3/30.0	PRICE FDC
FPU-6	10	10	600	240	800	0.25	1/4	208/60/3	2.9	65.5/91.2	208/60/3	6.5	26.3/30.0	PRICE FDC
FPU-7	10	6	450	135	450	0.25	1/4	208/60/3	2.9	65.5/93.6	208/60/3	4.0	17.5/20.0	PRICE FDC
FPU-8	30	10	1,350	440	1,460	0.25	1/2	208/60/3	4.5	65.5/91.5	208/60/3	12.0	47.3/50.0	PRICE FDC
FPU-9	10	6	330	100	330	0.25	1/4	208/60/3	2.9	65.5/94.2	208/60/3	3.0	14.0/15.0	PRICE FDC
FPU-10	10	6	350	105	350	0.25	1/4	208/60/3	2.9	65.5/92.6	208/60/3	3.0	14.0/15.0	PRICE FDC
FPU-11	50	12	1,900	650	2,160	0.25	1	208/60/3	9.6	65.5/85.7	208/60/3	13.8	59.9/60.0	PRICE FDC
FPU-12	30	10	1,000	330	1,090	0.25	1/2	208/60/3	4.5	65.5/91.6	208/60/3	9.0	36.0/40.0	PRICE FDC

NOTES:
1. DUCT RUNOUT MAY DIFFER FROM INLET SIZE. TRANSITIONS MAY BE REQUIRED.
2. PROVIDE HIGH EFFICIENT ELECTRONICALLY COMMUTATED (ECM) FAN MOTORS.
3. PROVIDE WITH NON-FUSED TOGGLE DISCONNECT.
4. ELECTRIC REHEAT SHALL BE LOCATED ON THE DISCHARGE.
5. ELECTRIC REHEAT ELEMENTS SHALL HAVE SCR CONTROL.
6. ELECTRIC REHEAT COILS SHALL BE FACTORY MOUNTED AND WIRED TO VAV BOX.
7. INSTALL VAV FAN POWERED BOXES WITH ELECTRICAL CLEARANCES AS REQUIRED BY MANUFACTURER.
8. PROVIDE FACTORY MOUNTED BAS CONTROLS AND ACTUATORS.
9. VAV BOXES SHALL HAVE SINGLE POINT CONNECTION.
10. PROVIDE NEW WALL MOUNTED TEMPERATURE SENSOR FOR EACH NEW FAN POWERED VAV BOX.

VAV ROOFTOP UNIT SCHEDULE																						
				SUPPLY FAN			RETURN FAN			COOLING COIL				ELECTRIC HEATING COIL					ELECTRICAL			
MARK	SUPPLY AIR FLOW (CFM)	OUTDOOR AIR FLOW (CFM)	MIN. AIRFLOW (CFM)	ESP (IN H2O)	FAN HP	FAN QTY.	ESP (IN H2O)	FAN HP	FAN QTY.	EAT DB/WB (°F)	LAT DB/WB (°F)	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	HEATING AIR FLOW (CFM)	TOTAL HEATING CAPACITY (MBH)	TOTAL HEATING CAPACITY (KW)	EAT/LAT DB (°F)	FLA (AMPS)	V / PH	MCA/MOP	BASIS OF DESIGN (MANUFACTURER,MODEL#)	OPERATING WEIGHT (LBS.)
RTU-1	8,650	1,430	3,000	1.5"	10.0	1	0.5"	8.0	1	77.8/64.1	54.2/53.9	254.4	214.3	3,200	102.4	30.0	33.0/64.5	88.3	208 / 3	158/175	DAIKIN DPS020A	3,911

NOTES:
1. PROVIDE SINGLE POINT CONNECTION AND NON-FUSED DISCONNECT PER NEC.
2. PROVIDE WITH CURB ADAPTER TO MATE TO THE EXISTING CURB.
3. PROVIDE UNIT WITH AIR SIDE ECONOMIZER.
4. ROOFTOP UNIT SHALL HAVE FIELD POWERED 115V GFI RECEPTACLE.
5. PROVIDE UNIT WITH DUCT MOUNTED SMOKE DETECTORS.
6. PROVIDE UNIT WITH HAIL GUARDS FOR THE CONDENSER COILS.
7. PROVIDE UNIT WITH BACNET CAPABILITY

PACKAGED ROOFTOP UNIT SCHEDULE																	
MARK	SUPPLY AIR FLOW (CFM)	OUTDOOR AIR FLOW (CFM)	SUPPLY FAN		COOLING PERFORMANCE					ELECTRIC HEAT				ELECTRICAL		BASIS OF DESIGN (MANUFACTURER,MODEL#)	OPERATING WEIGHT (LBS.)
			ESP (IN H2O)	FAN HP	EAT DB/WB (°F)	LAT DB/WB (°F)	EER @ ARI	UNIT NOMINAL COOLING (MBH)	UNIT GROSS SENSIBLE COOLING (MBH)	EAT/LAT (°F)	HEATING INPUT (KW)	FLA (AMPS)	HEATER CONTROL	V / PH	MCA/MOCP (AMP.)		
RTU-2	1,100	120	0.75"	1.3	76.7/63.3	53.3/53.4	12.5	34.7	29.5	61.3/92.9	12.0	33.3	SCR TYPE	208 / 3	45.5 / 50	DAIKIN MODEL #DPS003A	1,304

NOTES:
1. PROVIDE SINGLE POINT CONNECTION AND NON-FUSED DISCONNECT PER NEC.
2. PROVIDE WITH CURB ADAPTER TO MATE TO THE EXISTING CURB.
3. ROOFTOP UNIT SHALL HAVE FIELD POWERED 115V GFI RECEPTACLE.
4. PROVIDE UNIT WITH HAIL GUARDS FOR THE CONDENSER COILS.
5. PROVIDE UNIT WITH BACNET CAPABILITY.
6. PROVIDE WITH HOT GAS REHEAT HUMIDITY CONTROL AND CAPABILITY.
7. WORK ASSOCIATED WITH REPLACING EXISTING RTU AND PROVIDING NEW RTU-2 SHALL BE BROKEN OUT AND PRICED AS AN ADD ALTERNATE FOR OWNER APPROVAL.

GENERAL SPECIFICATIONS

1. SCOPE: PROVIDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR OWNER'S USE COMPLETE SYSTEMS OF HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, FOR THE PROPOSED WORK AND BUILDING RENOVATIONS AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THESE SPECIFICATIONS. VISIT THE SITE TO OBTAIN DIMENSIONS, EXISTING LAYOUTS AND LOCATIONS AND EXISTING CONSTRUCTION DETAILS NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION WITH OTHER DIVISIONS OF WORK FOR THE FULL EXTENT OF THE SCOPE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL ASPECTS, COMPONENTS, SYSTEMS, ETC. AND ACCOMMODATE THE PERFORMANCE INTENT OF THE CONSTRUCTION DOCUMENTS THROUGHOUT THE PROJECT SCOPE.
2. BIDDERS RESPONSIBILITY: EXAMINE THE DRAWINGS AND SPECIFICATIONS AND VISIT THE WORK SITE. BECOME FAMILIAR WITH THE CHARACTER OF THE WORK, THE COORDINATION WITH OTHER TRADES REQUIRED, AND ANY OTHER CONDITIONS THAT AFFECT THE COMPLETION OF THIS WORK. GENERAL CONTRACTOR SHALL BE REQUIRED TO COORDINATE WORK WITH TENANT FINISH CONTRACTOR IN A SIDE BY SIDE SCENARIO.
3. PERMITS, CODES AND LAWS: APPLY FOR ALL PERMITS AND PAY ALL FEES. ALL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF THE FOLLOWING RULES AND REGULATIONS, HEREIN REFERRED TO AS "CODES":
THE LATEST OR ADOPTED EDITION OF THE APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING, MECHANICAL, SANITATION, PLUMBING, ETC. CODES.
UNDERWRITER'S LABORATORIES, INC. (U.L) NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.)
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A)
WHERE ANY OF THESE CODES ARE AT VARIANCE WITH THE DRAWINGS AND SPECIFICATIONS, THEIR REQUIREMENTS SHALL TAKE PRECEDENCE, UNLESS THE DRAWINGS AND SPECIFICATIONS REQUIREMENTS EXCEED THESE CODES. INCLUDE ANY COST NECESSARY TO MEET THESE CODES IN THE BID PRICE.
4. MECHANICAL PLANS: THE MECHANICAL PLANS ARE DIAGRAMMATIC AND BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED. INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.
5. QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS: BIDDERS SHALL NOT RELY ON ANY ORAL CLARIFICATION OF THE DRAWINGS OR SPECIFICATIONS. ANY QUESTIONS OR CLARIFICATIONS SHALL BE REFERRED IN WRITING TO THE ARCHITECT.
6. GUARANTEES: ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. WARRANTIES SHALL BE IN WRITING AND SHALL INCLUDE FACTORY WARRANTIES FOR EACH PIECE OF EQUIPMENT. PROVIDE A CERTIFICATE FOR EACH PIECE OF EQUIPMENT. CLEARLY INDICATE ON EACH WARRANTY CERTIFICATE THE MODEL NO., SERIAL NO., LOCATION, AND OWNER'S NAME.
7. COMPLETE SYSTEM: ALL PRODUCTS, MATERIALS AND ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE.
8. WORKMANSHIP: ALL WORK SHALL BE PERFORMED BY COMPETENT MECHANICS USING PROPER TOOLS AND EQUIPMENT TO PRODUCE FIRST QUALITY WORK. ALL WORK SHALL BE NEATLY INSTALLED, ACCESSIBLE FOR MAINTENANCE, AND COMPLETE WITH ALL ACCESSORIES REQUIRED.
9. ACCESSIBILITY: INSTALL ALL EQUIPMENT AND THEIR APPURTENANCES SUCH AS, BUT NOT LIMITED TO, VALVES, COILS, DRAIN PANS, DRAINS, DAMPERS, CONTROLS, MOTORS, CONTROLLERS, ETC., SO THAT THEY CAN BE SERVICED, RESET, REPLACED OR RECALIBRATED, ETC. INSTALL ALL NECESSARY ACCESS PANELS AND BUILDING ACCESS DOORS, AS BELOW, WHERE REQUIRED TO ACCOMPLISH THIS. IF ANY EQUIPMENT OR COMPONENTS DO NOT FIT WHERE INTENDED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING, REQUESTING FURTHER GUIDANCE. PROVIDE BUILDING ACCESS DOORS FOR ALL MECHANICAL EQUIPMENT REQUIRING SERVICE, INCLUDING BUT NOT LIMITED TO, AHU'S, FANS, DAMPERS, DUCT ACCESS PANELS, CONTROLS, PIPING, VALVES, REGULATORS, TRAPS, ETC., INSTALLED ABOVE HARD CEILINGS, BEHIND WALLS, AND BELOW FLOORS, FOR INSTALLATION BY OTHER DIVISIONS OF THE WORK. BUILDING ACCESS DOORS ARE NOT REQUIRED WHERE THE MECHANICAL EQUIPMENT IS INSTALLED ABOVE LAY-IN CEILINGS. SIZE THE BUILDING ACCESS DOORS FOR THE USE INTENDED, BUT NOT LESS THAN 12 INCHES BY 12 INCHES. WHERE HUMAN ACCESS IS REQUIRED, PROVIDE 24 INCHES BY 24 INCHES, OR LARGER. PROVIDE FIRE RATED DOORS FOR ALL FIRE RATED WALLS, PARTITIONS, AND CEILINGS.
10. WORK BY OTHER TRADES: FURNISH ALL SLEEVE FRAMES, BUILDING ACCESS DOORS, PREFABRICATED EQUIPMENT CURBS, ROOF CURBS, ETC. FOR INSTALLATION BY OTHER TRADES. INSTALL ALL MOTORS AND FURNISH THE STARTING EQUIPMENT AND DISCONNECTS TO THE DIVISION 16000 SUBCONTRACTOR FOR INSTALLATION. CONTROL WIRING, INCLUDING SWITCHES, THERMOSTATS, INTERLOCKS, ETC. SHALL BE FURNISHED BY THE CONTROLS CONTRACTOR. ENSURE THAT THE ELECTRICAL EQUIPMENT MOUNTED NEAR THE MECHANICAL EQUIPMENT DOES NOT BLOCK ACCESS TO SERVICE AREAS OF THE MECHANICAL EQUIPMENT. DO NOT ALLOW ANY EQUIPMENT TO BE INSTALLED ON THE HVAC EQUIPMENT ENCLOSURES.
11. FIRE STOPPING: ALL PENETRATIONS OF FLOORS AND OTHER FIRE-RATED ASSEMBLIES SHALL BE FIRE AND SMOKE-STOPPED IN STRICT ACCORDANCE WITH THE APPLICABLE CODES.
12. FOUNDATIONS AND SPECIAL SUPPORTS: FURNISH AND INSTALL ALL SPECIAL FOUNDATIONS AND SUPPORTS REQUIRED FOR EQUIPMENT INSTALLED UNDER THIS SECTION, UNLESS THEY ARE A PART OF THE BUILDING STRUCTURE AND ARE SHOWN IN OTHER SECTIONS.
13. CLEANING AND PAINTING: THOROUGHLY CLEAN ALL EQUIPMENT AND REMOVE ALL TRASH, CARTONS, ETC. MAKE ANY NECESSARY CORRECTIONS OR REPAIR/REPLACE ANY DAMAGED MATERIALS OR EQUIPMENT. LEAVE THE ENTIRE SYSTEM IN A THOROUGHLY CLEAN AND ORDERLY MANNER. ANY FINISHED SURFACES THAT HAVE BEEN SCRATCHED OR DISCOLORED SHALL BE TOUCHED-UP OR REPAINTED BREAK TO BREAK WITH PAINT TO MATCH THE ORIGINAL COLOR. TOUCH UP PAINTED SURFACES OR REPAINT THE ENTIRE PAINTED SURFACE IF TOUCH UP IS UNACCEPTABLE. SEE ARCHITECTURAL PAINTING SPECIFICATIONS. ALL METAL ITEMS SUBJECT TO RUSTING, INSIDE OR EXPOSED TO WEATHER SHALL BE GIVEN ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER AS SOON AS INSTALLED. APPLY TWO FINISH COATS WITH COLOR TO BE SELECTED BY THE ARCHITECT. FOR ALL INTERIOR OR EXTERIOR STRUCTURAL GALVANIZED STEEL, COLD GALVANIZE ALL EXPOSED METAL CUT ENDS, HOLES, WELDS, SCRATCHES, ETC., OR HOT DIP GALVANIZE THE ENTIRE STRUCTURE OR FRAME AFTER FABRICATION AND MOUNTING HOLES ARE CUT. UPON COMPLETION OF THE INSTALLATION, BUT NOT BEFORE, AND BEFORE ACCEPTANCE, THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, PIPING, DUCTWORK, INSULATION JACKETS, ETC., REMOVING ALL STICKERS, LABELS, MARKING, WRITING, FABRICATION MARKINGS, IDENTIFICATION, ADHESIVE, SEALER, GLUE, RUST, CORROSION, ETC., FROM THEIR EXTERIOR SURFACES. THE CLEANLINESS AND PAINTING ACCEPTABILITY IS AT THE SOLE DISCRETION OF THE ARCHITECT AND MAY REQUIRE ADDITIONAL CLEANING AND COATS OF PAINT BEFORE ANY SURFACE IS ACCEPTED.
14. SUBMITTAL AND SHOP DRAWINGS: SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. SUBMIT DIGITAL PDF COPIES OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT. TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS. WHERE TWO OR MORE MANUFACTURERS OR MATERIALS ARE NAMED, THE CONTRACTOR MAY SUBMIT ANY OF THOSE NAMES, PROVIDED THEY CONFORM TO THE SPECIFICATIONS AND DESIGN INTENT. CONTRACTOR SHALL INCLUDE WITH THE SUBMITTAL A LIST OF ALL COMPARATIVE FEATURES INDICATING COMPLIANCE WITH THE SPECIFICATIONS. THE ARCHITECT AND/OR ENGINEER MAY REQUIRE THE SUBMISSION OF SAMPLES, PARTICULARLY WHEREVER EQUIPMENT OR APPLIANCES ARE VISIBLE IN FINISHED AREAS, SUCH AS CEILINGS, INTERIOR AND EXTERIOR WALLS. THE CONTRACTOR AND SUPPLIER SHALL ARRANGE FOR DEMONSTRATIONS OF THE INSTALLATION OF ANY OF THESE PRODUCTS AND THEIR ABILITY TO PERFORM AS SPECIFIED, IF REQUIRED. REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.

THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.

15. AS-BUILT DRAWINGS: MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

16. OPERATION AND MAINTENANCE MANUALS: UPON COMPLETION OF THE PROJECT, SUBMIT THREE COPIES OF ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.

17. PROJECT COMPLETION: BEFORE STARTING AND TESTING ANY SYSTEM, HVAC, OR PLUMBING, TO PREVENT INADVERTENT OPERATION OF THE MECHANICAL EQUIPMENT BEFORE THE MANUFACTURER'S INSPECTION AND TESTING, THE CONTRACTOR SHALL:

VERIFY THAT ALL ELECTRICAL POWER IS OFF TO ALL MECHANICAL EQUIPMENT
LOCK OUT EACH SYSTEM; "DO NOT OPERATE" LOCK ON LOCKOUT TAGS, OR EQUIVALENT. INSTALL LOCKOUT TAGS AT EACH PIECE OF EQUIPMENT, ELECTRICAL DISCONNECTS, STARTERS, SWITCHES, ETC.
REMOVE THESE TAGS ONLY WHEN THE MANUFACTURER APPROVES OF THE EQUIPMENT INSTALLATION.
EACH MANUFACTURER OR THEIR REPRESENTATIVE SHALL INSPECT THEIR EQUIPMENT FOR COMPLIANCE TO THEIR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS.
IN ADDITION, THE COMPRESSOR MANUFACTURER SHALL INSPECT EACH REFRIGERANT PIPING INSTALLATION FOR ADHERENCE TO THE APPROVED REFRIGERANT PIPING DIAGRAMS, ROUTING.
EACH MANUFACTURER SHALL PREPARE A PUNCH LIST OF ALL DEFICIENCIES, IN WRITING WITH COPIES TO THE ARCHITECT AND CONTRACTOR.
EACH MANUFACTURER SHALL REINSPECT THE EQUIPMENT AFTER THE CONTRACTOR HAS CORRECTED ALL DEFICIENCIES.

WHEN THE MANUFACTURER HAS GIVEN THEIR WRITTEN APPROVAL WITH COPIES TO THE ARCHITECT AND CONTRACTOR, THE CONTRACTOR MAY REMOVE THE LOCKOUT TAGS, SAFELY START, AND TEST THE EQUIPMENT, AS REQUIRED HEREIN. CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY DRILLING OF WALL STUDS, CEILING JOISTS, PLATES, FINISHES, ETC. TO ACCOMMODATE ROUTING AND INSTALLATION OF ALL PIPING, DUCT, ETC. HVAC EQUIPMENT, METHODS AND MATERIALS

18. DUCTWORK GENERAL: DUCT SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS AND DO NOT TAKE INTO ACCOUNT LINING THICKNESS. DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH GAUGES, CONSTRUCTION DETAILS AND INSTALLATION ACCORDING TO N.F.P.A. STANDARD 90A, ASHRAE, AND SMACNA DUCT CONSTRUCTION MANUALS AND REQUIREMENTS. PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS AND FANS. PROVIDE SINGLE THICKNESS TURNING VANES IN ELBOWS. PAINT DUCTS, SLEEVES, PLENUMS, ETC., INTERIORS VISIBLE THROUGH AIR DEVICES WITH A MINIMUM OF ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER, SUITABLE FOR GALVANIZED STEEL, AND TWO FINISH COATS OF FLAT BLACK PAINT.

19. DUCT CONSTRUCTION MATERIALS: RECTANGULAR SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST: LINED GALVANIZED SHEET METAL. ROUND DUCT AND RUN-OUTS: EXTERNALLY INSULATED GALVANIZED SHEET METAL DUCTS WITH SPIRAL LOCK SEAMS. FLEXIBLE DUCT: PRE-INSULATED FLEXIBLE DUCT. NO FLEXIBLE DUCT RUNS LONGER THAN 5 FEET.

20. FABRICATION, ERECTION, AND SUPPORT: ALL DUCTWORK SHALL BE FABRICATED, ERECTED, BRACED, AND SUPPORTED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE REQUIREMENTS.

21. ACOUSTIC LINED DUCTWORK: ACOUSTICALLY AND THERMALLY LINE 10' OF RECTANGULAR SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST DUCT AND PLENUMS WITH 1" THICK, 1 1/2 PCF FIBERGLASS DUCT LINER, APPLIED PER THE MANUFACTURER'S AND NAIMA REQUIREMENTS. DUCT LINER SHALL MEET AND/OR EXCEED ASHRAE'S I.A.Q. STANDARD 62. USE WELDED STICK CLIPS, IN LIEU OF ADHESIVE TYPE FASTENERS AND FULL COVERAGE ADHESIVE. PROVIDE EDGE NOSINGS WHERE REQUIRED. COAT ALL EXPOSED FIBERGLASS WITH HARDCAST "LAG-GRIP 671".

22. JOINT SEALING: SEAL ALL DUCT JOINTS AND SEAMS (LONGITUDINAL AND TRANSVERSE) WITH HIGH PRESSURE DUCT SEALER, HARDCAST "IRON-GRIP 601" OR APPROVED EQUIVALENT. REINFORCED FOIL BACKED TAPES, CLOTH OR PLASTIC BACKED TAPES (DUCT TAPE) ARE NOT ACCEPTABLE.

23. FLEXIBLE AIR DUCT: DUCT SHALL BE UL LISTED UL-181, CLASS I AIR DUCT MATERIAL AND SHALL COMPLY WITH N.F.P.A 90A AND 90B AND ALL LOCAL REQUIREMENTS. DUCT SHALL HAVE AN OPERATING AIR PRESSURE OF 6 INCHES WG POSITIVE AND 4 INCHES WG NEGATIVE, ACOUSTICAL DOUBLE LAMINATED INNER FABRIC BONDED TO A STEEL HELIX WIRE. OUTER JACKET FIRE RETARDANT REINFORCED ALUMINUM MYLAR WITH FIBERGLASS INSULATION. FLEXMASTER TYPE "8M" ACOUSTICAL INSULATED OR EQUIVALENT. MAKE ALL FLEXIBLE DUCT CONNECTIONS TO HARD DUCT USING STAINLESS STEEL SCREW CLAMPING BANDS AND SEALED AIR TIGHT WITH HIGH PRESSURE DUCT SEALER. PLASTIC BANDS ARE NOT ACCEPTABLE. SEAL FLEXIBLE DUCT VAPOR BARRIER TO HARD DUCT AND/OR ADJACENT INSULATION. NO EXPOSED FIBERGLASS SHALL BE VISIBLE.

24. AIR DISTRIBUTION DEVICES: COORDINATE THE EXACT LOCATIONS OF ALL AIR DEVICE NEEDS WITH THE ARCHITECTURAL AND ELECTRICAL DRAWINGS PRIOR TO INSTALLATION. COORDINATE THE EXACT LOCATION OF EACH OUTLET WITH THE ARCHITECT WITH REGARD TO CEILING AND WALL SPACING, CENTERING ALONG SOFFITS, WALLS, ETC. FURNISH AND INSTALL WHERE SHOWN ON THE DRAWINGS ALL DIFFUSERS, GRILLES, AND REGISTERS OF THE SIZE, TYPE, AND CAPACITY AS INDICATED IN THE AIR DEVICE SCHEDULE.

25. ELBOWS: TURNING VANES AND SMOOTH RADIUS ELBOW (WITHOUT VANES):
AT ALL DUCT TURNS OF 45 DEGREES OR MORE, PROVIDE SINGLE THICKNESS TURNING VANES PER SMACNA REQUIREMENTS. ALTERNATIVELY, USE SMOOTH RADIUS ELBOW (R/W = 1.5).

26. BRANCH TAKEOFF FITTINGS: AT ALL MAIN TO BRANCH DUCT TAPS, TAKEOFFS, OR RUN-OUTS, PROVIDE 45 DEGREE ENTRANCE TAPS, AS DETAILED BY SMACNA STANDARDS.

27. DUCT MOUNTED ACCESS PANELS, INSTALL AS FOLLOWS:
AT INLET OF EACH DUCT MOUNTED FIRE AND MOTORIZED DAMPER.
FOR DUCT MOUNTED CONTROLS.
AS REQUIRED AND DIRECTED BY THE TEST AND BALANCE CONTRACTOR.
WHERE REQUIRED FOR DUCT INSPECTION, MAINTENANCE, AND CLEANING.

ACCESS PANELS SHALL BE 18 INCHES X 18 INCHES OR LARGEST DUCT WILL ALLOW. NORMALLY CENTER THE ACCESS PANEL IN THE BOTTOM OF THE DUCT AS CLOSE AS POSSIBLE TO THE DUCT MOUNTED DEVICE. ACCESS PANELS MAY BE INSTALLED ON THE SIDE OF THE DUCT, WHERE NECESSARY. ACCESS PANELS SHALL BE DOUBLE WALL INSULATED HINGED WITH NEOPRENE GASKETS AND CAM LOCKS ON EACH UNHINGED SIDE. WHERE REQUIRED BECAUSE OF PANEL OPENING CLEARANCE, SUBSTITUTE UNHINGED ACCESS PANELS WITH CAM LOCKS ON EACH SIDE AND CAPTIVE CHAIN. ACCESS PANELS SHALL BE FLEXMASTER "TBSM-TAB DOOR" GREENHECK MODEL "HAD-10", OR EQUIVALENT.

28. GENERAL:
THIS SECTION APPLIES TO ALL MECHANICAL WORK.
ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ASHRAE STANDARDS AND ALL LOCAL AND STATE ENERGY CODES. THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE WORK USING MECHANICS SKILLED IN THE TRADE.
INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH, ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD

RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE.

HVAC PIPING:
INSULATE REFRIGERANT SUCTION LINES AND ALL CONDENSATE DRAIN LINES WITH 1" THICK CLOSE CELLED ELASTOMERIC INSULATION INSTALLED PER THE MANUFACTURERS REQUIREMENTS. PAINT EXTERIOR INSULATION WITH TWO COATS OF PAINT AS REQUIRED BY THE INSULATION MANUFACTURER.
EXTERNALLY INSULATED DUCTS:
EXTERNALLY INSULATE ALL ROUND SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST DUCTWORK WITH 1 1/2" THICK (3/4 LBS/CU. FT. DENSITY) DUCT WRAP WITH ALUMINUM ALL SERVICE JACKET, VAPOR BARRIER, EXCEPT PRE-INSULATED FLEXIBLE DUCT.

29. EQUIPMENT:
CAPACITY, PERFORMANCE AND CHARACTERISTICS OF EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED OR IMPLIED HEREIN. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCREASED COST TO HIMSELF OR OTHERS FOR EQUIPMENT WHICH DEVIATES FROM THAT SCHEDULED OR IMPLIED HEREIN. REGARDLESS OF COST AFFECT, THE ARCHITECT MUST APPROVE ANY DEVIATION FROM THE DRAWINGS AND THE SPECIFICATION.

30. MOTORS AND STARTERS:
ALL ELECTRIC MOTORS SHALL BE HIGH EFFICIENCY TYPE WITH MAXIMUM OF 1750 RPM WITH OPEN DRIP PROOF OR TEFC ENCLOSURES, UNLESS OTHERWISE NOTED. MOTORS LOCATED ON AIR HANDLING UNITS SHALL BE MOUNTED IN RUBBER SUPPORTS OR THE FAN SHALL BE INDEPENDENTLY SUPPORTED ON SPRING ISOLATORS. MOTORS LOCATED IN THE CONDITIONED SPACE SHALL BE SELECTED FOR QUIET OPERATION AND SHALL NOT PRODUCE AN OBJECTIONABLE "MOTOR NOISE" IN THE SPACE.
ELECTRICAL CHARACTERISTICS SHALL BE VERIFIED FROM THE ELECTRICAL DRAWINGS, PRIOR TO BIDDING, AND VERIFIED ON THE JOB WITH THE ELECTRICAL SUB-CONTRACTOR. IF A CONFLICT ARISES, THE ELECTRICAL DRAWINGS SHALL BE THE AUTHORITY. PROVIDE MOTOR STARTERS AND PROPER HEATER ELEMENTS SIZED IN ACCORDANCE WITH NFPA 70. STARTERS SHALL BE SQUARE-D OR EQUIVALENT WITH OVERLOAD TRIP ELEMENT IN EACH PHASE. LARGER MOTORS AND THEIR STARTERS SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY AS TO INRUSH ALLOWABLE AND THE TYPE OF STARTING PERMITTED. SHOULD ANY MECHANICAL EQUIPMENT REQUIRE EXTRA WORK BY OTHER TRADES, FOR PROPER INSTALLATION, THIS CONTRACTOR SHALL BEAR ALL COSTS, SUCH AS INCREASED ELECTRICAL, STRUCTURAL, ROOFING, ETC.

31. SYSTEMS TEST AND BALANCE:
THE REQUIRED TEST & BALANCE OF THE HVAC SYSTEM SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING AGENCY AS SPECIFIED BELOW.
AGENCY QUALIFICATIONS:
TEST & BALANCE AGENCY (TBA) SHALL BE PERFORMED BY AN INDEPENDENT AGENCY ENGAGED SOLELY IN TEST AND BALANCE WORK. AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) AND NATIONAL ENVIRONMENTAL BALANCING BUREAU, (NEBB).

SUBMIT A WRITTEN REPORT WITHIN 30 DAYS OF COMMENCING WORK, WITH ANY RECOMMENDED CHANGES TO INSURE BALANCING CAPABILITY.

SUBMIT A DETAILED TEST PLAN TO THE ARCHITECT ILLUSTRATING ALL FORMATS, DRAWINGS, AND TEST PROCEDURE TO BE USED FOR TESTING THE COMPLETED SYSTEM. THE APPROVED PLAN WILL BE USED FOR TESTING THE SYSTEMS. PROCEDURES SHALL INCLUDE REQUIREMENTS LISTED IN AABC/NEBB STANDARDS, LATEST EDITION AND ANY SPECIAL REQUIREMENTS FOR THIS PROJECT. MAKE PROJECT VISITS AS REQUIRED DURING CONSTRUCTION PERIOD INSPECTING FOR PROPER INSTALLATION OF THE SYSTEM AND RELATED BALANCING DEVICES.

CONTRACTORS REQUIREMENTS PRIOR TO TEST & BALANCE:
THE CONTRACTOR SHALL PERFORM ALL REQUIRED PRELIMINARY TESTS AND OTHER PREPARATORY WORK, INCLUDING BUT NOT LIMITED TO:
MAKE SURE ALL FANS ARE OPERATING, CHECK ROTATION, RPM, AND AMPS. CHECK ALL DAMPERS FOR OPERATION.
PUT ALL HVAC EQUIPMENT IN FULL OPERATION INCLUDING AIR UNITS, ACCU'S AND FANS.
MAKE SURE ALL HVAC CONTROLS ARE INSTALLED AND FULLY OPERATIONAL.
CLEAN/REPLACE FILTERS JUST PRIOR TO TESTING.
PROVIDE ALL BALANCING DEVICES AND DRIVE CHANGES THAT ARE DEEMED NECESSARY BY T&B AGENCY FOR BALANCE AT NO ADDITIONAL COST TO THE OWNER.
TEST & BALANCE AGENCY SHALL BALANCE ALL AIR SYSTEMS FOR OPERATION WITHIN DESIGN CRITERIA. PRIME AIR MOVERS SHALL BE WITHIN 5% OF DESIGN AND TERMINALS WITHIN 10% OF DESIGN.
AIR SYSTEMS SHALL BE BALANCED AS DESCRIBED HEREIN.

TEST REPORT:
THE TBA SHALL PREPARE DIGITAL PDF COPIES OF A FINAL COMPREHENSIVE TEST REPORT.
TABLE OF CONTENTS SHALL LIST ALL REPORTS.
ALL AIR OUTLETS SHALL BE LOCATED ON CODED DRAWINGS PREPARED BY THE T&B AGENCY. AIR OUTLETS FORMS SHALL BE PREPARED AND CORRELATED TO THE CODED DRAWINGS.
TEST SUMMARY SHALL DESCRIBE FINAL TEST PROCEDURES AND SPECIAL CONDITIONS DURING TESTS (SUCH AS THERMOSTAT OUTSIDE/RETURN AIR RELATIONSHIP), AND DUCT STATIC PRESSURE.
DESCRIBE OTHER DATA THAT MAY ASSIST OPERATING PERSONNEL IN THE CONTINUING OPERATION OF THE SYSTEM.
T&B CONTRACTOR SHALL TAKE AND RECORD ALL NECESSARY READINGS AT THE FINAL BALANCE POINTS, SUCH AS BUT NOT LIMITED TO: AIR QUANTITIES, PRESSURES, SETPOINTS, ENTERING AND LEAVING COIL TEMPERATURES, SPACE INDOOR AND OUTSIDE WET AND DRY BULB TEMPERATURES, OUTDOOR WEATHER CONDITIONS, ELECTRICAL READINGS OF ALL NEW AND EXISTING MOTORS, COMPRESSORS, ETC.
TEST REPORT SHALL CONTAIN TBA CERTIFICATION OF TEST DATA AND SYSTEM CONDITIONS. SUBMIT THE TEST REPORTS, FOR REVIEW, BEFORE SUBSTANTIAL COMPLETION.

END OF MECHANICAL SPECIFICATIONS.



STOTTSBERG
ENGINEERING

www.stottsbergeng.com
540-216-0331
Project #20029



BALZER
& ASSOCIATES

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



BENT MOUNTAIN COMMUNITY CENTER

RENOVATION

MECHANICAL SPECIFICATIONS

10145 TINSLEY LANE
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE AS INDICATED
REVISIONS

M1.03
PROJECT NO UNKNOWN



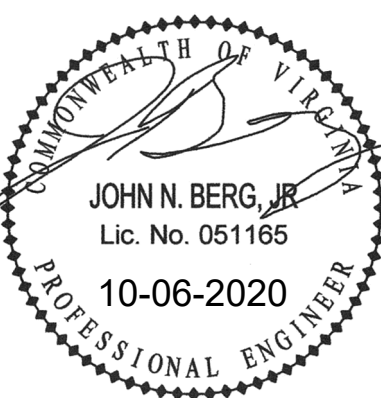
**BALZER
& ASSOCIATES**

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle
Roanoke, VA 24018
540.772.9580



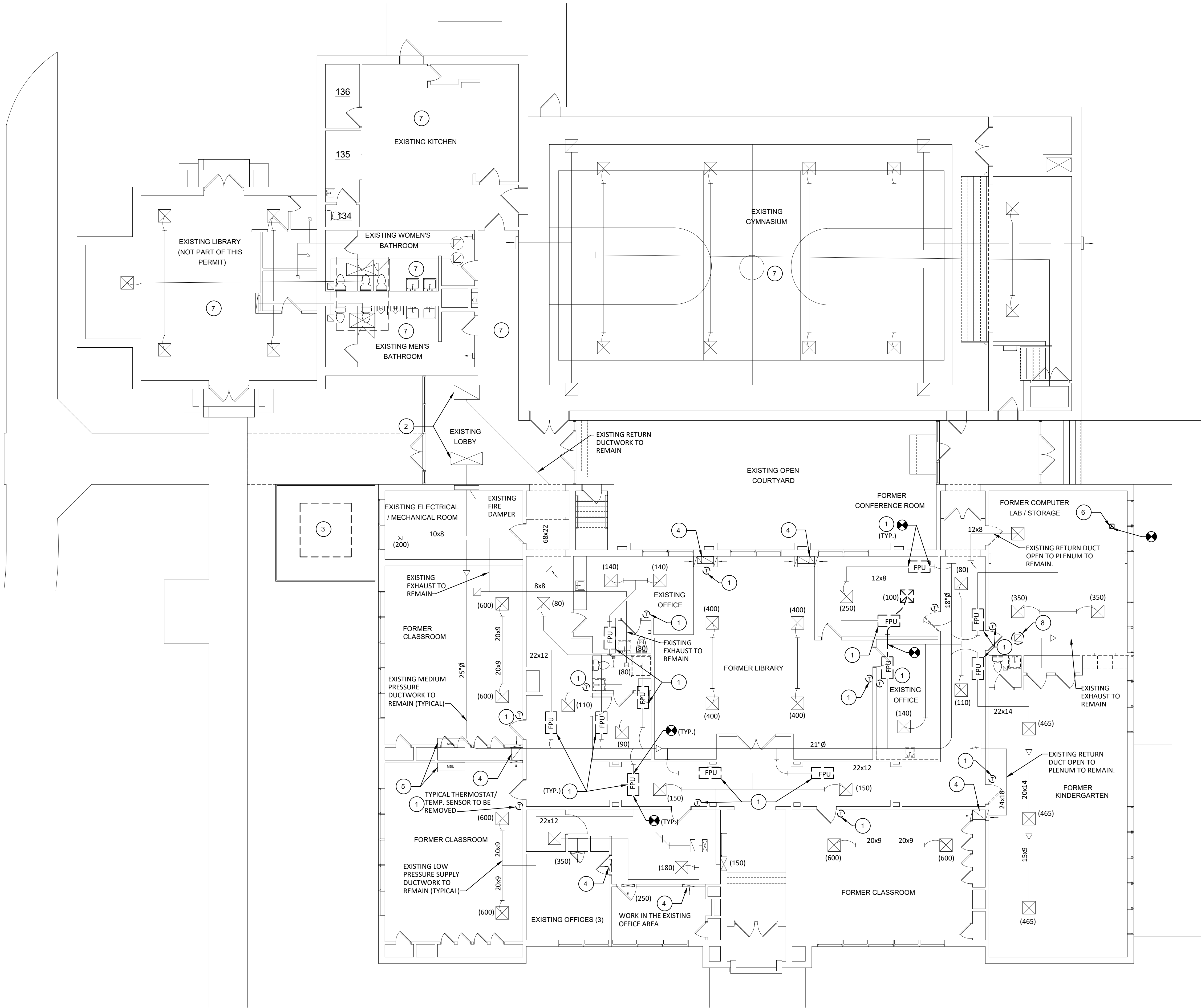
BENT MOUNTAIN COMMUNITY CENTER

RENOVATION
MECHANICAL DEMOLITION PLAN

10145 TINSLEY LANE,
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE 1/8" = 1'-0"
REVISIONS

M2.01
PROJECT NO UNKNOWN



MECHANICAL DEMOLITION PLAN
SCALE = 1/8"=1'-0"

**STOTTSBERG
ENGINEERING**
www.stottsbergeng.com
540-216-0331
Project #20029



- GENERAL NOTES:**
1. CONTRACTOR TO VERIFY EXISTING PRIOR TO BIDDING.
 2. PROVIDE ADD ALTERNATE PRICING TO OWNER FOR APPROVAL FOR WORK ASSOCIATED WITH REMOVING EXISTING ROOFTOP UNIT SEE KEYED NOTE #2 BELOW AND ON PLAN.
- DEMOLITION KEYED NOTES:**
1. EXISTING ROOFTOP TO BE REMOVED IN ITS ENTIRETY ALONG WITH ASSOCIATED REMOTE CONDENSER ON GRADE. REMOVE ALL ASSOCIATED CONTROLS AND REFRIGERANT PIPING. EXISTING ROOFTOP UNIT CURB SHALL REMAIN.
 2. EXISTING ROOFTOP UNIT TO BE REMOVED IN ITS ENTIRETY ALONG WITH ALL ASSOCIATED CONTROLS. EXISTING CURB SHALL BE REMOVED. PROVIDE ADD ALTERNATE PRICING FOR WORK ASSOCIATED WITH REPLACING THIS ROOFTOP UNIT.
 3. EXISTING ROOFTOP UNIT TO REMAIN.
 4. EXISTING SPLIT SYSTEM CONDENSER UNIT TO REMAIN.
 5. EXISTING ROOFTOP FAN/RELIEF VENT TO REMAIN.
 6. EXISTING ROOF MOUNTED EXHAUST FAN (F-5) TO BE REMOVED AND REPLACED.

MECHANICAL DEMOLITION PLAN - ROOF



**BALZER
& ASSOCIATES**

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



BENT MOUNTAIN COMMUNITY CENTER

RENOVATION

MECHANICAL NEW WORK PLAN

10148 TINSLEY LANE,
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE 1/8" = 1'-0"
REVISIONS

M3.01
PROJECT NO UNKNOWN

**STOTTSBERG
ENGINEERING**

www.stottsbergeng.com
540-216-0331
Project #20029

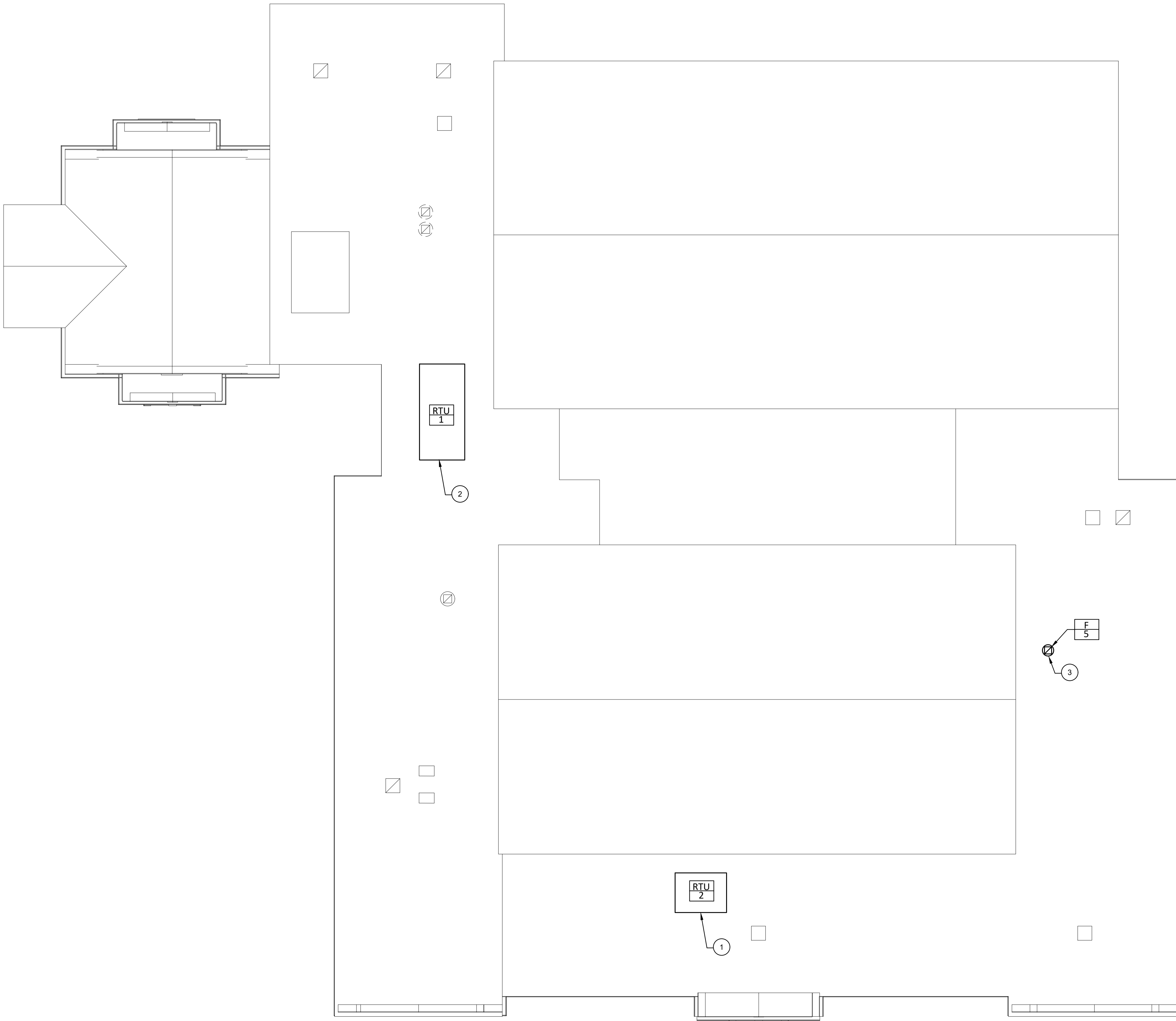
MECHANICAL NEW WORK PLAN
SCALE = 1/8"=1'-0"

GENERAL NOTES:

1. FOR EACH BRANCH DUCT AND AIR DEVICE BEING ALTERED IN THIS PROJECT, THE CONTRACTOR SHALL PROVIDE A MANUAL BALANCING VALVE TO ACHIEVE DESIRED AIRFLOW RATES INDICATED ON THE DRAWINGS.
2. AIR FLOW FOR EXISTING DEVICES IS SHOWN FOR REFERENCE. BALANCE EXISTING OUTLETS TO AIRFLOWS SHOWN.

NEW WORK KEYED NOTES:

1. BALANCE EXISTING SUPPLY/RETURN AIR DEVICE TO AIRFLOW INDICATED (CFM).
2. EXISTING EXHAUST GRILLE RELOCATED TO NEW LOCATION SHOWN. BALANCE TO AIRFLOW INDICATED (CFM).
3. EXISTING 24x10 SUPPLY AND NEW 22x10 RETURN DOWN FROM RTU-2 (EXISTING). WORK ASSOCIATED WITH REPLACING RTU-2 SHALL BE AN ADD ALTERNATE.
4. NEW TEMPERATURE SENSOR FOR ASSOCIATED VAV BOX (TYPICAL FOR ALL NEW FAN POWERED VAV BOXES).
5. WORK IN THE EXISTING OFFICE AREA SHALL BE ASSOCIATED WITH THE ADD ALTERNATE INCLUDING PROVIDING A NEW THERMOSTAT FOR THE ROOFTOP UNIT AND AIR BALANCE WORK.
6. EXTEND RETURN DUCTWORK FROM GRILLE TO RETURN AIR PLENUM. REFER TO RETURN GRILLE DETAIL FOR ADDITIONAL INFO.



GENERAL NOTES:

1. PROVIDE ADD ALTERNATE PRICING FOR WORK ASSOCIATED WITH REPLACING EXISTING RTU AND PROVIDING NEW RTU-S.

NEW WORK KEYED NOTES:

1. NEW ROOFTOP UNIT SHALL BE PROVIDED WITH NEW 14" INSULATED ROOF CURB. CONNECT UNIT TO EXISTING SUPPLY AND RETURN DUCTWORK BELOW, PROVIDE NEW FLEXIBLE DUCT CONNECTIONS AND DUCT TRANSITIONS AS REQUIRED.
2. UNIT SHALL BE PROVIDED WITH CURB ADAPTER TO FIT EXISTING ROOF CURB. CONNECT UNIT TO EXISTING SUPPLY AND RETURN DUCTWORK BELOW, PROVIDE NEW FLEXIBLE DUCT CONNECTIONS AND DUCT TRANSITIONS AS REQUIRED.
3. NEW ROOF MOUNTED EXHAUST FAN SHALL BE PROVIDED WITH NEW 14" INSULATED ROOF CURB. CONNECT UNIT TO EXISTING DUCTWORK BELOW, PROVIDE NEW DUCT TRANSITIONS AS REQUIRED.

MECHANICAL NEW WORK PLAN - ROOF

1
M3.02
SCALE = 1/8"=1'-0"

**STOTTSBERG
ENGINEERING**

www.stottsbergeng.com
540-216-0331
Project #20029



**BALZER
& ASSOCIATES**

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

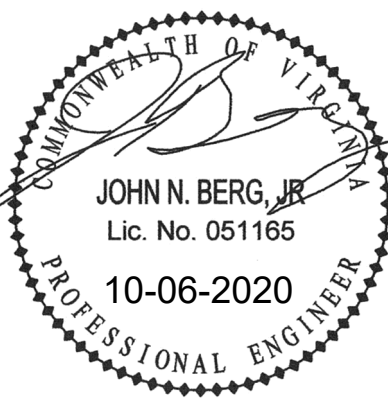
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle

Roanoke, VA 24018

540.772.9580



BENT MOUNTAIN COMMUNITY CENTER

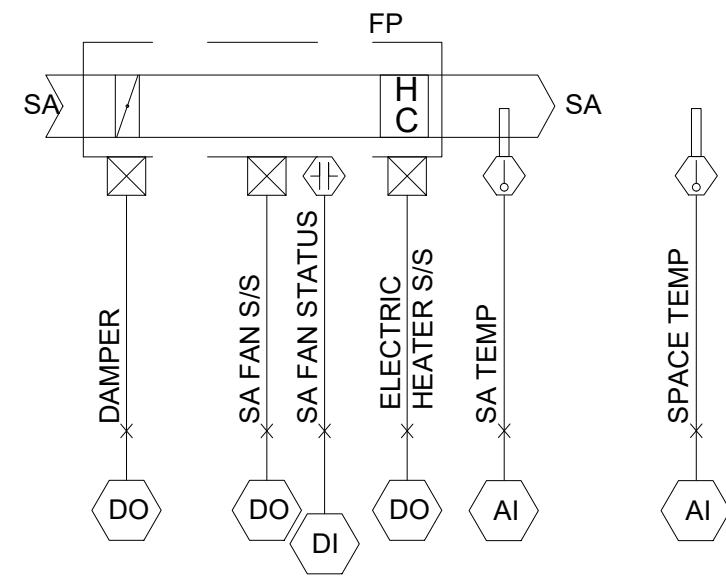
RENOVATION

MECHANICAL NEW WORK PLAN - ROOF

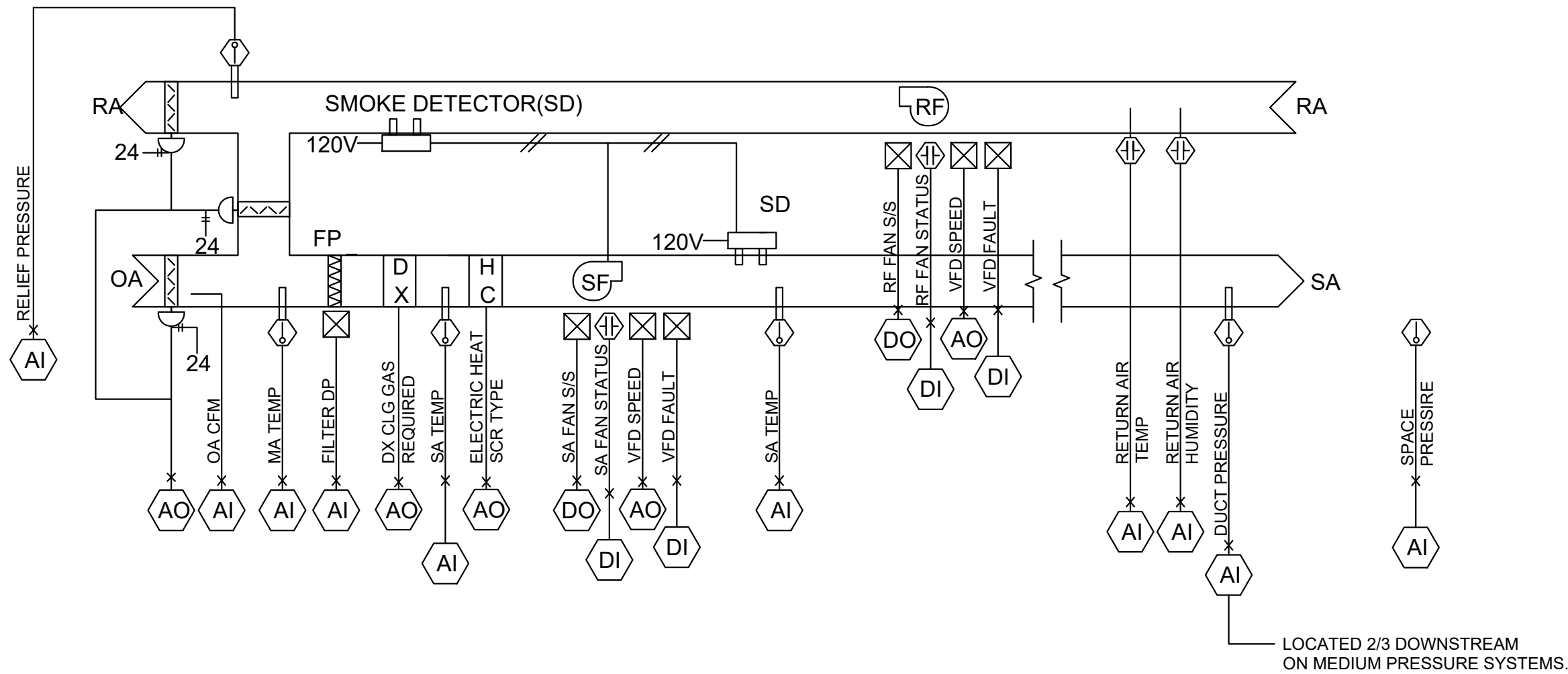
10145 TINSLEY LANE,
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE 1/8" = 1'-0"
REVISIONS

M3.02
PROJECT NO UNKNOWN



VAV BOX CONTROLS (FPU)



DX ROOFTOP AIR HANDLING UNIT CONTROL: RTU-1

SCOPE OF WORK FOR CONTROLS:

THE BUILDINGS EXISTING FRONT END CONTROLS SHALL BE EXPANDED TO ACCOMMODATE AND GAIN FULL CONTROL OF ALL NEW MECHANICAL EQUIPMENT BEING ADDED IN THIS PROJECT INCLUDING ALL WORK IN AREAS BEING RENOVATED. THE CONTROLS CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE DIRECT DIGITAL TEMPERATURE CONTROL SYSTEMS (DDC). THE DIRECT DIGITAL CONTROL SYSTEM SHALL BE COMPRISED OF A NETWORK OF VARIOUS INDEPENDENT, STAND-ALONE DIGITAL CONTROLLERS, TOGETHER WITH CENTRALIZED CONTROL STATIONS, AND CENTRALIZED HOST STATIONS AS SPECIFIED TO PROVIDE CENTRALIZED ACCESS AND FACILITY WIDE CONTROL FUNCTIONS. THE STAND-ALONE DIGITAL CONTROLLERS SHALL BE INTERCONNECTED IN A COMMUNICATING NETWORK TO PROVIDE FACILITY WIDE ACCESS AND SHARING OF INFORMATION. A LOCAL AREA NETWORK (LAN) SHALL BE PROVIDED TO INTERCONNECT THE STAND-ALONE DIGITAL CONTROLLERS FOR HIGH-SPEED DATA TRANSMISSION WITHIN EACH BUILDING.

SEQUENCE OF OPERATION:

VAV AIR HANDLER - RTU-1:

- MORNING WARM-UP/COOL-DOWN: AT A PREDETERMINED OPTIMAL TIME CALCULATED BY THE DDC, THE DDC SHALL ENERGIZE THE UNIT SUPPLY FANS. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, RETURN AIR DAMPER SHALL REMAIN OPEN, AND ASSOCIATED BUILDING EXHAUST FANS SHALL REMAIN OFF.
- OCCUPIED CONTROL: DURING OCCUPANCY THE OUTSIDE AIR DAMPER SHALL BE OPENED TO ITS MINIMUM POSITION (AS REQUIRED TO MAINTAIN MINIMUM OUTDOOR AIR FLOW) AND THE INTERLOCKED BUILDING EXHAUST FANS SHALL BE ENERGIZED.
- TEMPERATURE CONTROL: ON A RISE IN UNIT DISCHARGE AIR TEMPERATURE ABOVE 55F (ADJUSTABLE) AS SENSED BY THE SUPPLY AIR TEMPERATURE SENSOR, THE DDC SHALL MODULATE THE OUTDOOR AIR DAMPER OPEN WHILE PROPORTIONATELY CLOSING THE RETURN AIR DAMPER. ON A FURTHER RISE IN DISCHARGE AIR TEMPERATURE, THE DDC SHALL MODULATE DX COOLING ON AS REQUIRED. ON A FALL IN DISCHARGE AIR TEMPERATURE, THE REVERSE SHALL OCCUR. ON A FURTHER FALL IN DISCHARGE AIR TEMPERATURE THE DDC SHALL MODULATE THE ELECTRIC HEAT ON AS REQUIRED. AT ANY TIME THE OUTSIDE AIR ENTHALPY, AS SENSED BY THE DDC, EXCEEDS THE RETURN AIR ENTHALPY, THE DDC SHALL CLOSE THE OUTDOOR AIR DAMPER TO ITS MINIMUM POSITION, AND OPEN THE RETURN AIR DAMPER.
- CARBON DIOXIDE CONTROL: WHEN SPACE CARBON DIOXIDE LEVEL EXCEEDS THE SETPOINT, AS SENSED BY THE SPACE CO2 SENSOR, THE DDC SHALL MODULATE THE OUTSIDE AIR DAMPER OPEN TO ITS HIGH MINIMUM POSITION WHILE PROPORTIONALLY OPENING THE RELIEF AIR DAMPER AND PROPORTIONALLY CLOSING THE RETURN AIR DAMPER TO MAINTAIN CO2 LEVELS BELOW 1000 PPM (ADJUSTABLE). IF AFTER 8 CONSECUTIVE HOURS, THE SPACE CO2 LEVEL REMAINS 10% (ADJUSTABLE) OR MORE ABOVE SETPOINT, THE AIR HANDLER SHALL ALARM THE DDC. THE DDC SHALL MONITOR RETURN AIR CO2 SENSOR AND SHALL ALARM THE DDC WHEN THE VALUE EXCEEDS ±15% (ADJUSTABLE). THE DDC SHALL NOT ALLOW THE OUTSIDE AIR DAMPER TO OPEN TO A POSITION THAT EXCEEDS THE HIGH MINIMUM POSITION UNLESS ECONOMIZER CONDITIONS PREVAIL.
- SUPPLY FAN CONTROL: WHEN UNIT SUPPLY FAN IS STARTED, THE DDC SHALL SLOWLY RAMP UP THE SPEED OF THE SUPPLY FAN THROUGH ITS VFD AND CONTROL TO MAINTAIN A CONSTANT STATIC PRESSURE AS SENSED BY THE STATIC PRESSURE TRANSMITTER LOCATED 2/3 DOWNSTREAM OF SUPPLY TRUNK DUCT. THE DUCT PRESSURE SENSOR LOCATED AT FAN DISCHARGE SHALL PROVIDE HIGH LIMIT STATIC PRESSURE OVERRIDE.
- RELIEF FAN AND RELIEF DAMPER CONTROL: WHEN THE UNIT RELIEF FAN IS STARTED, THE DDC SHALL SLOWLY RAMP UP THE SPEED TO THE RELIEF FAN THROUGH ITS VFD AND OPEN THE RELIEF AIR DAMPER PROPORTIONALLY TO MAINTAIN A 0.05 IN. W.C. (ADJUSTABLE) POSITIVE PRESSURE IN THE SPACE AS SENSED BY THE SPACE PRESSURE SENSOR.
- AIRFLOW MEASURING: THE DDC SHALL VERIFY MINIMUM OUTSIDE AIR FLOWS AS SENSED BY THE RTU'S AIRFLOW MEASURING STATION AND MODULATE THE OUTDOOR AIR DAMPER AS NECESSARY TO MAINTAIN THE MINIMUM OUTSIDE AIR SETPOINT AS INDICATED ON THE DRAWINGS.
- DUCT SMOKE DETECTORS: WHEN PRODUCTS OF COMBUSTION ARE SENSED BY A DUCT SMOKE DETECTORS AS INDICATED ON THE DRAWINGS, THE UNIT FAN SHALL BE DEENERGIZED.
- SYSTEM MONITORING: IN ADDITION TO ALL POINTS LISTED ABOVE, THE DDC SHALL MONITOR RETURN AIR TEMPERATURE; MIXED AIR TEMPERATURE; RETURN AIR HUMIDITY THROUGH; AND VFD ALARMS.

SERIES FAN POWERED VARIABLE VOLUME W/ELECTRIC HEATING BOX:

THE FAN SHALL BE ENERGIZED DURING OCCUPIED PERIODS. ON A FALL IN SPACE TEMPERATURE AS SENSED BY THE SPACE TEMPERATURE SENSOR, THE BOX DAMPER SHALL MODULATE CLOSED TO ITS MINIMUM POSITION. ON A FURTHER FALL IN SPACE TEMPERATURE, THE ELECTRIC REHEAT SHALL MODULATE ON AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SET POINT. ON A RISE IN TEMPERATURE THE REVERSE SHALL OCCUR. DURING NIGHT OPERATION, THE FAN SHALL BE CYCLED AND THE SPACE TEMPERATURE SENSOR SHALL BE INDEXED TO MAINTAIN A REDUCED NIGHT TEMPERATURE.

CONTROLS LEGEND

H

S

S

S

H

C

T

S

⊗

C1

CR

DI

DO

AI

AO

AOP

EA

SA

RA

SF

EF

CC

HC

FS

MA

FP

DDC

HUMIDISTAT

WALL SWITCH

TIMER

SENSOR

HUMIDISTAT

CO2 SENSOR

THERMOSTAT

SWITCH

CONTACTOR

CURRENT TRANSFORMER

CIRCUIT RELAY

DIGITAL IN

DIGITAL OUT

ANALOG IN

ANALOG OUT

ANALOG OUT PNEUMATIC

EXHAUST AIR

SUPPLY AIR

RETURN AIR

SUPPLY FAN

EXHAUST FAN

COOLING COIL

HEATING COIL

FLOW SWITCH

MIXED AIR

FREEZE PROTECTION

DIRECT DIGITAL CONTROLS SYSTEM

T

M

P

MD

BACKDRAFT DAMPER

MOTORIZED VALVE (ELECTRIC ACTUATOR) (TWO POSITION, TWO WAY)

MOTORIZED VALVE (ELECTRIC ACTUATOR) (TWO POSITION, THREE WAY)

C1

CARBON MONOXIDE SENSOR

AQUASTAT

MOTORIZED DAMPER (ELECTRIC ACTUATOR)

PUMP

MANUAL DAMPER

BALZER
& ASSOCIATES

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle
Roanoke, VA 24018
540.772.9580

BENT MOUNTAIN COMMUNITY CENTER

RENOVATION
MECHANICAL CONTROLS

10148 TINSLEY LANE,
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE 1/8" = 1'-0"
REVISIONS

www.stottsbergeng.com
540-216-0331
Project #20029

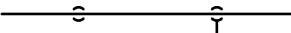
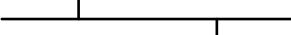
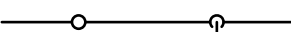
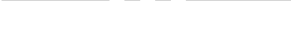
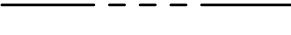
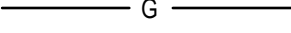
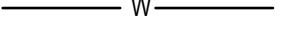
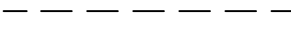
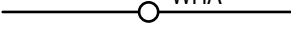
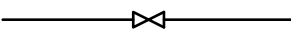
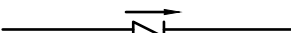
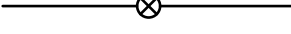
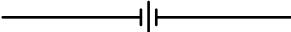
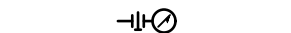
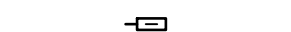
M4.01
PROJECT NO UNKNOWN

GENERAL PLUMBING NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 VIRGINIA UNIFORM STATEWIDE BUILDING CODE, ALL FEDERAL, STATE, AND CITY CODES, ORDINANCES, AND STANDARDS.
- PROVIDE SHOP DRAWINGS FOR APPROVAL FOR ALL NEW EQUIPMENT.
- PROVIDE OPERATION AND MAINTENANCE MANUALS FOR ALL NEW EQUIPMENT TO OWNER.
- IT IS THE INTENT OF THESE DOCUMENTS THAT THE CONTRACTOR PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES AND CONTROLS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.
- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. NOT ALL FITTINGS, OFFSETS, VENTS, OR DRAINS ARE SHOWN. THE CONTRACTOR SHALL INCLUDE ALL OFFSETS, VENTS, AND DRAINS AS REQUIRED FOR A FULLY FUNCTIONING SYSTEM.
- ALL PIPING SHALL BE LABELED FOR ITS USAGE.
- PROVIDE UL RATED FIRE STOPPING AROUND ALL PIPES THAT PENETRATE RATED WALL AND/OR FLOORS. PROVIDE CAULKED SEAL AROUND ALL DUCT AND/OR PIPING PENETRATIONS THROUGH NON RATED FULL HEIGHT WALLS TO MINIMIZE SOUND TRANSFER.
- MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION LOCAL UTILITY REGULATIONS AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
- PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS. COORDINATE INSTALLATION OF PIPES WITH ELECTRICAL PANELS WHEN SHOWN NEAR PANELS OR OVER ELECTRICAL ROOMS.
- WHERE PIPE CONNECTIONS ARE SHOWN CONNECTING TO EXISTING, CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND CONNECTION SIZES BY FIELD VERIFICATION PRIOR TO INSTALLATION. SLOPES AND INVERT ELEVATIONS OF EXISTING SEWER AND STORM SHALL BE ESTABLISHED AND VERIFIED BY CONTRACTOR BEFORE ANY NEW PIPING IS INSTALLED IN ORDER THAT PROPER SLOPE WILL BE MAINTAINED AND NECESSARY INVERT ELEVATIONS OBTAINED.
- ALL PIPING, FIXTURES AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
- ALL PIPING MATERIALS LOCATED IN RETURN AIR PLENUMS SHALL BE RATED FOR SUCH USAGE IN ACCORDANCE WITH THE VIRGINIA BUILDING CODE.
- PROVIDE DRIP LEGS AS REQUIRED BY CODE FOR ALL CHANGES IN ELEVATION OF GAS PIPING.

PLUMBING FIXTURE SCHEDULE:

EW-1	ELECTRIC WATER COOLER, ELKAY EZH2O BOTTLE FILLER STATION WITH FILTERED BI-LEVEL COOLER. MODEL LZSTL8WS(VR)SP WITH HI/LO CONFIGURATION. UNIT SHALL DELIVER 8 GPH OF 50°F OF DRINKING WATER AT 90°F AMBIENT AND 80°F INLET WATER. PUSH BAR ACTIVATION. BOTTLE FILLING UNITS SHALL INCLUDE AN ELECTRONIC SENSOR FOR TOUCHLESS ACTIVATION WITH AN AUTOMATIC 20-SECOND SHUT-OFF TIMER. LED LIGHT ILLUMINATING THE WATER DISPENSING AREA, BRIGHTENING AS WATER IS BEING DISPENSED. SHALL INCLUDE A GREEN TICKER™ DISPLAYING COUNT OF PLASTIC BOTTLES SAVED FROM WASTE. BOTTLE FILLER SHALL PROVIDE A 1.1 GPM FLOW RATE WITH LAMINAR FLOW TO MINIMIZE SPLASHING. SHALL INCLUDE THE WATERSENTRY® PLUS 3000-GALLON CAPACITY FILTER, CERTIFIED TO NSF/ANSI 42 & 53, WITH VISUAL FILTER MONITOR TO INDICATE WHEN REPLACEMENT IS NECESSARY. UNIT SHALL AUTOMATICALLY DETECT A NEW FILTER AND RESET VISUAL FILTER MONITOR ACCORDINGLY. UNIT SHALL HAVE THE ABILITY TO TURN OFF REFRIGERATION SYSTEM AS NEEDED. UNIT SHALL MEET ADA GUIDELINES.
------	---

LEGEND	ABBREVIATIONS
	AAV AIR ADMITTANCE VALVE
	ABV ABOVE
	AFF ABOVE FINISHED FLOOR
	BFF BELOW FINISHED FLOOR
	BTU BRITISH THERMAL UNIT
	BEL BELOW
	CLG CEILING
	CO CLEANOUT
	CONN CONNECT, CONNECTION
	CW COLD WATER
	CONT CONTINUED
	DN DOWN
	EA EACH
	ELEV ELEVATION
	EW-1 ELECTRIC WATER COOLER
	(e) EXISTING
	F DEGREES FAHRENHEIT
	FD FLOOR DRAIN
	FIN FINISHED
	FLR FLOOR
	FR FROM
	FT FEET
	GPH GALLONS PER HOUR
	GPM GALLONS PER MINUTE
	HB HOSE BIBB
	HC HANDICAPPED ACCESSIBLE
	HW HOT WATER
	HP HORSEPOWER
	IN INCH, INCHES
	INV INVERT
	MAX MAXIMUM
	MBH THOUSAND BTU PER HOUR
	MIN MINIMUM
	SH SHEET
	TYP TYPICAL
	V SANITARY VENT
	VTR VENT THRU ROOF
	W SANITARY WASTE
	WCO WALL CLEANOUT
	WH WALL HYDRANT
	WHA WATER HAMMER ARRESTER



**BALZER
& ASSOCIATES**

PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle
Roanoke, VA 24018
540.772.9580



BENT MOUNTAIN COMMUNITY CENTER

RENOVATION
PLUMBING GENERAL NOTES AND
LEGEND

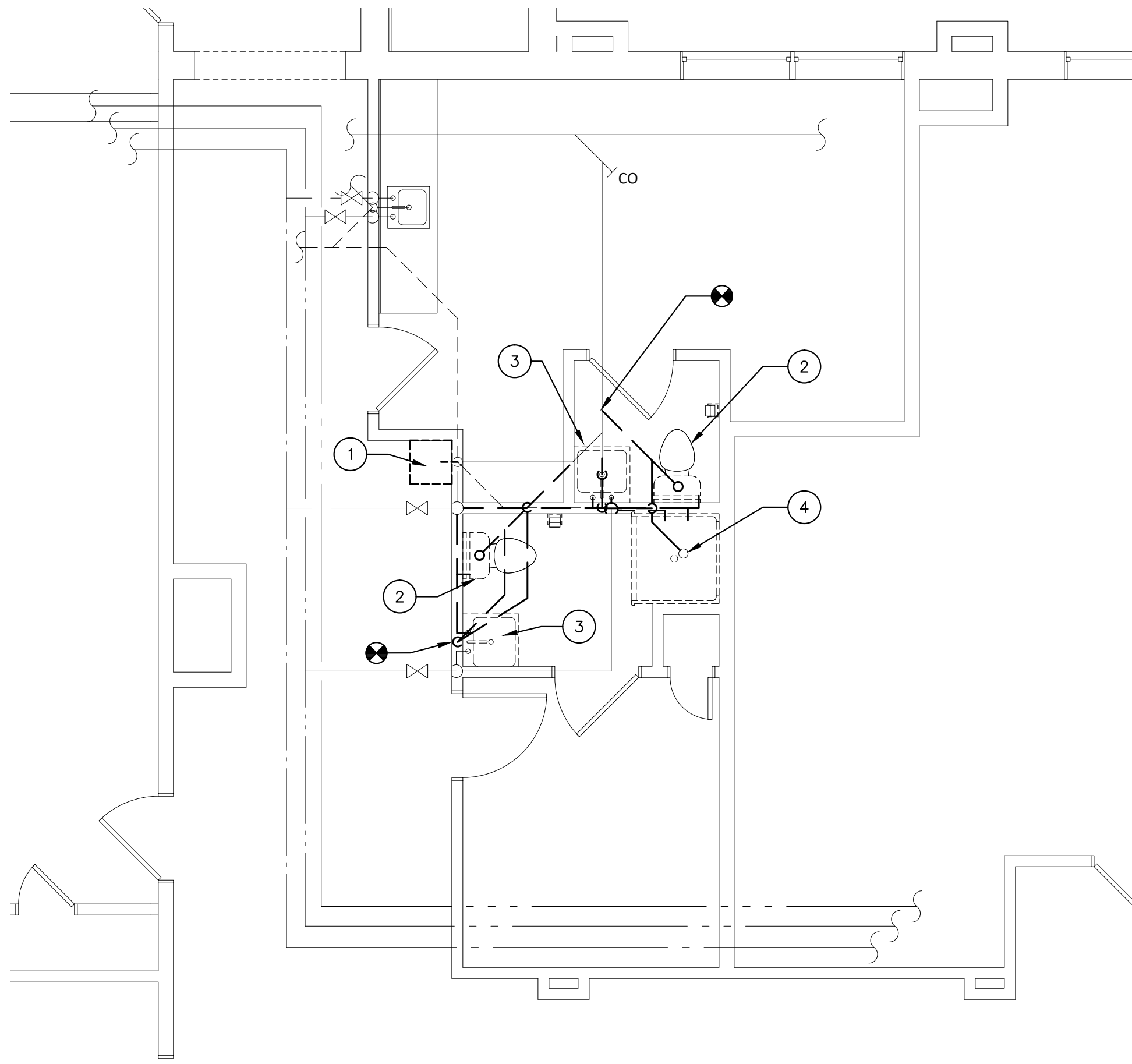
10145 TINSLEY LANE
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE AS INDICATED
REVISIONS



www.stottsbergeng.com
540-216-0331
Project #20029

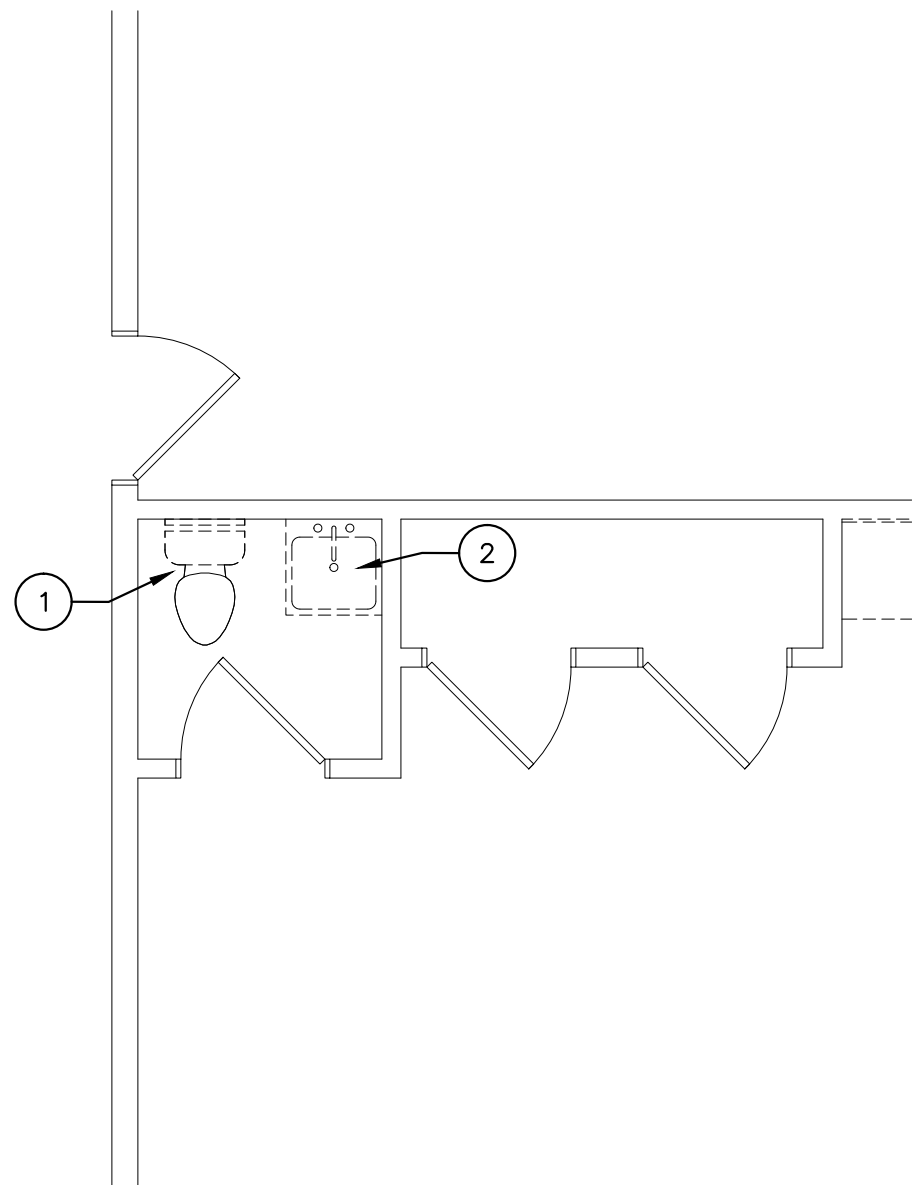
P1.01
PROJECT NO UNKNOWN



1
P2.01 **PLUMBING DEMOLITION PLAN**
SCALE = 1/4"=1'-0"

DEMO KEYED NOTES:

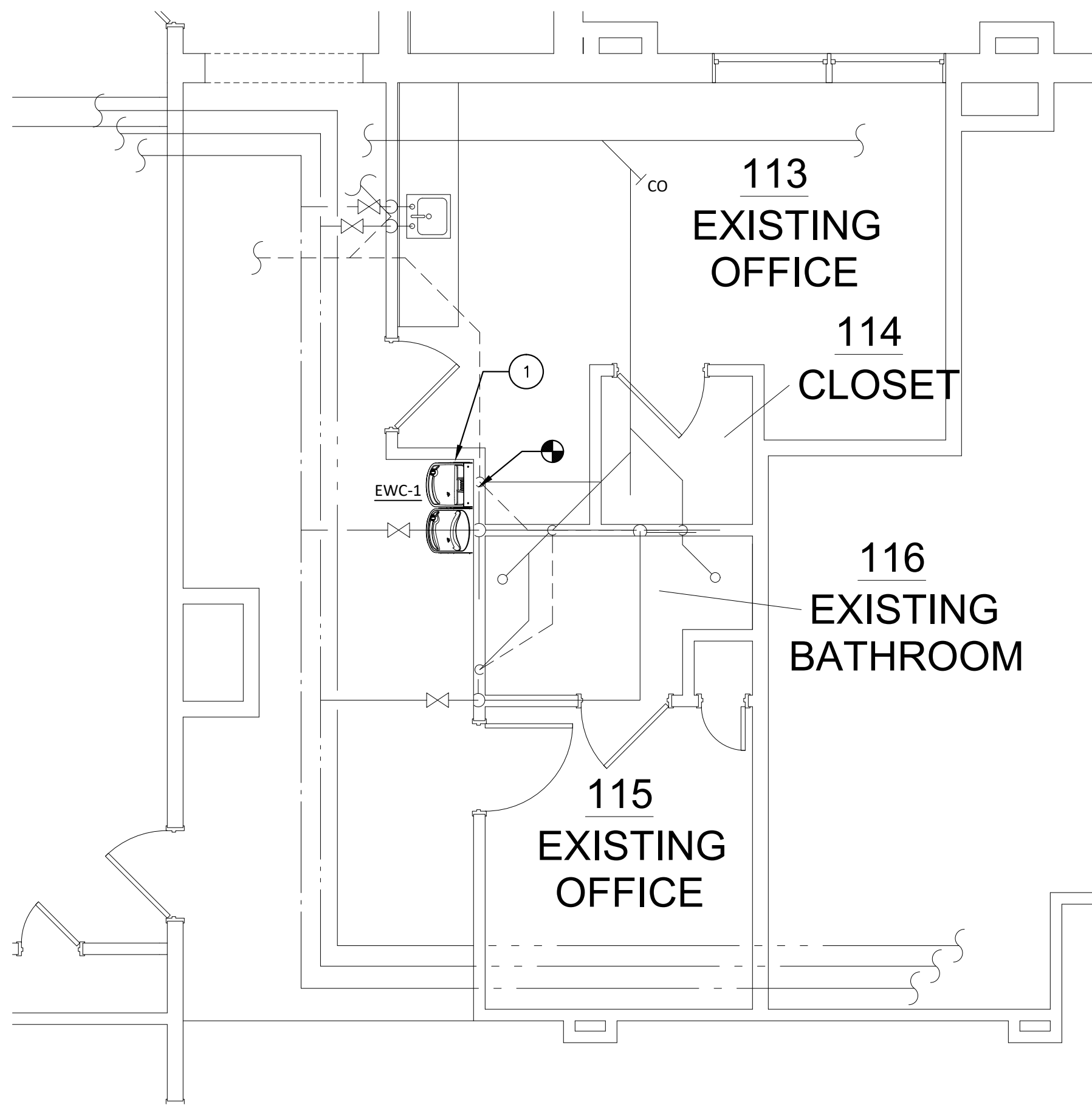
1. DEMO ELECTRIC WATER COOLER AND REMOVE WASTE AND WATER PIPING BACK TO STUB-OUT AT WALL TO PREPARE FOR NEW FIXTURE.
2. REMOVE WATER CLOSET IN ITS ENTIRETY. DEMO WASTE PIPING AND WATER PIPING TO MAIN AND CAP.
3. REMOVE SINK IN ITS ENTIRETY. DEMO WATER, WASTE AND VENT PIPING BACK TO RESPECTIVE MAINS AND CAP.
4. REMOVE SHOWER IN ITS ENTIRETY. DEMO WASTE PIPING AND WATER PIPING TO MAIN AND CAP.



3
P2.01 **PLUMBING DEMOLITION PLAN**
SCALE = 1/4"=1'-0"

DEMO KEYED NOTES:

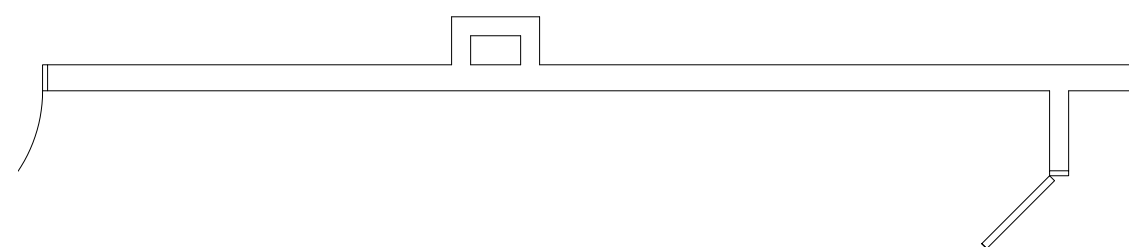
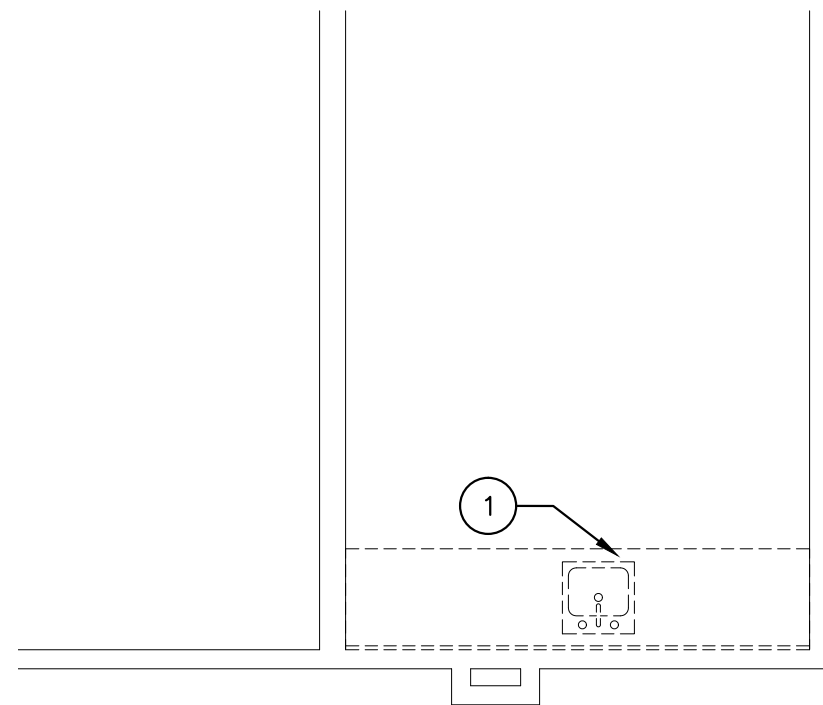
1. REMOVE WATER CLOSET IN ITS ENTIRETY. DEMO WASTE PIPING AND WATER PIPING TO MAIN AND CAP.
2. REMOVE SINK IN ITS ENTIRETY. DEMO WATER, WASTE AND VENT PIPING BACK TO RESPECTIVE MAINS AND CAP.



2
P2.01 **PLUMBING PLAN**
SCALE = 1/4"=1'-0"

KEYED NOTES:

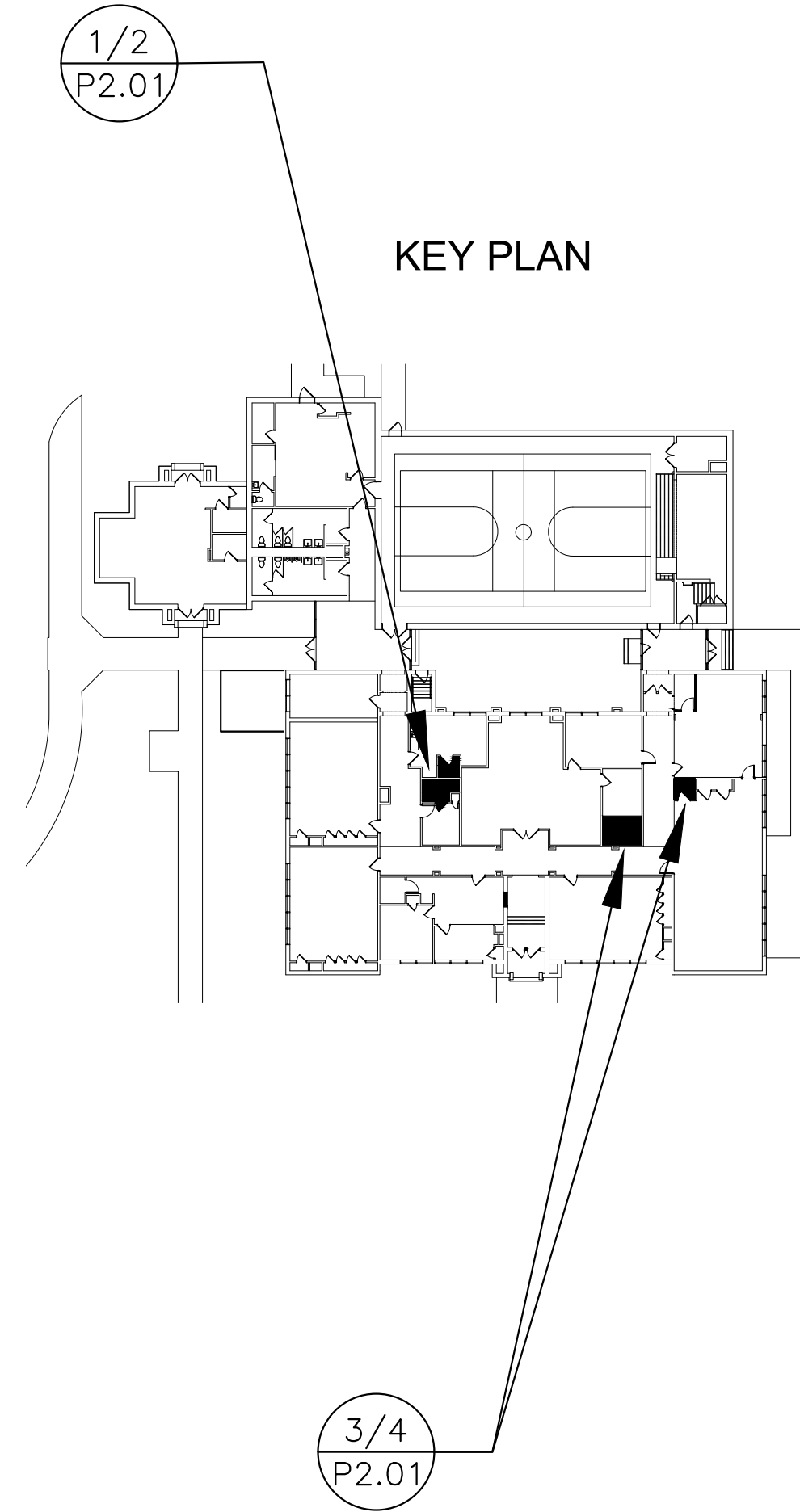
1. INSTALL NEW ELECTRIC WATER COOLER, EWC-1, AS INDICATED. CONNECT TO EXISTING WATER AND WASTE FROM REMOVED WATER COOLER IN WALL. IF WATER HAS BEEN PREVIOUSLY REMOVED OR DISCONNECTED, ROUTE NEW 1/2" CW LINE FROM CAPPED MAIN IN BASEMENT BELOW TO NEW FIXTURE. NEW WATER LINES SHALL BE COPPER.



4
P2.01 **PLUMBING DEMOLITION PLAN**
SCALE = 1/4"=1'-0"

DEMO KEYED NOTES:

1. REMOVE SINK IN ITS ENTIRETY. DEMO WATER, WASTE AND VENT PIPING BACK TO RESPECTIVE MAINS AND CAP.



**BALZER
& ASSOCIATES**
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

www.balzer.cc

1208 Corporate Circle
Roanoke, VA 24018
540.772.9580



BENT MOUNTAIN COMMUNITY CENTER

RENOVATION

PLUMBING PARTIAL PLANS

10145 TINSLEY LANE
BENT MOUNTAIN, VA 24059

DRAWN BY GTL
DESIGNED BY GTL
CHECKED BY JNB
DATE 10-06-2020
SCALE AS INDICATED
REVISIONS



www.stottsbergeng.com
540-216-0331
Project #20029

P2.01
PROJECT NO UNKNOWN

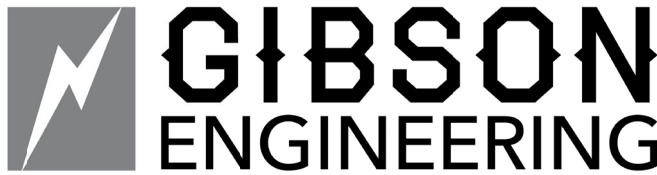
GENERAL NOTES
1. MECHANICAL EQUIPMENT IS SHOWN IN APPROXIMATE LOCATIONS. FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT AND PIPING, SEE MECHANICAL DRAWINGS. SOME MECHANICAL EQUIPMENT IS LOCATED ON THE ROOF. VERIFY LOCATION WITH MECHANICAL AND PROVIDE ALL CONDUIT AND WIRING TO OUTDOOR EQUIPMENT.
2. WHERE LIGHT SWITCHES ARE INDICATED TO BE MOUNTED BEHIND DOOR, MOUNT SUCH SWITCHES A MINIMUM OF 3'-9" FROM HINGED SIDE.
3. REVISE PANELBOARD SCHEDULES ON PANEL DIRECTORIES TO REFLECT FINAL INSTALLATION CONDITIONS.
4. LOCATE ALL RACEWAYS TO AVOID INTERFERENCE WITH DUCTS, PIPES, MECHANICAL EQUIPMENT, WITH REMOVAL OF CEILING TILES, OR WITH ACCESS TO EQUIPMENT WHICH REQUIRES PERIODIC ADJUSTMENT OR MAINTENANCE.
5. PROVIDE NAMEPLATES ON THE EXTERIOR OF ALL ELECTRICAL PANELS AND ENCLOSURES WITH THE DEVICE ID, RATING, POWER SOURCE AND INSTALLATION DATE AND BY WHICH SWITCH OR STARTER.
6. COUNTER AND TOILET RECEPTACLES TO BE GFI AND COUNTER HEIGHT EXCEPT WHERE NOTED. REFRIGERATOR RECEPTACLE TO BE 36" AFF.
7. LIGHT FIXTURE TYPE IS SHOWN ONLY ONCE AS TYPICAL FOR THE ENTIRE ROOM UNLESS SPECIFICALLY INDICATED OTHERWISE.
8. UNLESS INDICATED OTHERWISE, SIZE CONDUITS IN ACCORDANCE WITH NFPA 70.
9. COORDINATE WITH THE MECHANICAL CONTRACTOR TO ENSURE ALL WORKING CLEARANCE AND DEDICATED WORKING SPACE OF PANELBOARDS.
10. COORDINATE ELECTRICAL INSTALLATION WITH ALL CASEWORK TO BE INSTALLED. PROVIDE THE NECESSARY JUNCTION BOXES FOR ALL POWER AND DATA CONNECTIONS INDICATED.
11. GROUNDING CONDUCTORS ARE NOT INDICATED IN BRANCH CIRCUIT RACEWAYS. PROVIDE GROUND CONDUCTORS AS REQUIRED BY NEC.
12. OCCUPANCY SENSORS SHOULD CONTROL ALL LIGHTING IN ROOMS, BOTH INBOARD AND OUTBOARD SWITCHING WHERE APPLICABLE, UNLESS INDICATED OTHERWISE.
13. PROVIDE PLASTIC BUSHING ON THE END OF ALL CONDUIT.
14. PROVIDE LABELS ON ALL WHIP PLACES AND RECEPTACLES INDICATING PANEL AND CIRCUIT FEEDING EACH DEVICE OR WHIP.
15. COORDINATE WITH OWNER TO PROVIDE DATA DROPS AS REQUIRED AND TO LOCATION EXACT LOCATION OF DESIRED DROPS. PROVIDE PULL CORDS WITH ALL DATA BOXES.
SCOPE NOTES:
1. PROVIDE ADDITIONAL FIRE ALARM DEVICES INDICATED ON DRAWINGS WITH DARK LINES FOR CHANGE OF USE. 2. PROVIDE ADDITIONAL EMERGENCY LIGHTING INDICATED ON DRAWINGS WITH DARK LINES FOR CHANGE OF USE. 3. EXISTING WIRING IS MEETS CURRENT CODE. 4. PROVIDE NEW ELECTRICAL FEEDS FOR NEW MECHANICAL EQUIPMENT. 5. ADD A BOX EXTENSION AND BLANK COVER FOR EXPOSED SPLICES. 6. VERIFY EXISTING ELECTRICAL CLEARANCE IS MAINTAINED IN FRONT OF ELECTRICAL PANEL. 7. REMOVE EXISTING SERVICE TAP AT SWITCHBOARD.
ADD ALTERNATE:
1. RE-LAMP EXISTING LIGHTS: PROVIDE NEW LAMPS TO REPLACE ALL EXISTING LAMPS IN THE BUILDING. CLEAN FIXTURES AND INSTALL LAMPS. 2. ALL WORK ASSOCIATED WITH RTU-2 IS TO BE CONSIDERED ADD/ALTERNATE. SEE ONE LINE DIAGRAM. 3. PROVIDE BREAKER, CONDUIT AND WIRING FOR HANDICAP LIFT TO THE STAGE.

ELECTRICAL LEGEND	
	LED LIGHTING FIXTURE, RECESSED, SURFACE OR PENDANT CEILING MOUNTED, 'E' INDICATES LIGHT FIXTURE TYPE.
	JUNCTION BOX FOR POWER
	QUAD- PLEX WALL RECEPTACLE
	DUPLEX WALL RECEPTACLE, MOUNTING HEIGHT = 1'-6", EXCEPT 'C' SUBSCRIPT INDICATES MOUNTING IN CASEWORK(TYP). 'GFI' SUBSCRIPT INDICATES GROUND FAULT, 'WP' SUBSCRIPT INDICATES WEATHERPROOF, 'EWC' SUBSCRIPT INDICATES BEHIND ELECTRIC WATER COOLER. '*' INDICATES MOUNTED HEIGHT = 8" ABOVE COUNTER(TYP). (TYP)
	OCCUPANCY SENSOR, DUAL TECHNOLOGY
	SMOKE DETECTOR
	EMERGENCY REMOTE HEAD
	DUCT SMOKE DETECTOR
	FIRE ALARM STROBE
	FIRE ALARM HORN STROBE
	FIRE ALARM PULL STATION
	FIRE ALARM CONTROL PANEL
	FIXTURE TYPE
	CONDUCTORS IN CONDUIT CONCEALED IN CEILING OR WALL.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD. NOTATION INDICATES PANELBOARD & BRANCH CIRCUIT CONNECTION.
	CONDUCTORS IN CONDUIT CONCEALED IN SLAB OR BELOW GRADE.
	CONDUCTORS IN CONDUIT TURNED UP.
	CONDUCTORS IN CONDUIT TURNED DOWN.
	SINGLE-POLE SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP. LOWER CASE SUBSCRIPT WHEN USED, INDICATES FIXTURES CONTROLLED (TYP).
	THREE-WAY SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
	FOUR-WAY SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
	INTEGRAL OCCUPANCY SENSOR SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
	COMBINATION PHONE OUTLET AND DATA OUTLET. DATA SYSTEM OUTLET, MOUNTING HEIGHT = 1'-6" UNLESS INDICATED OTHERWISE. PROVIDE 1' CONDUIT FROM BOX TO ABOVE ACCESSIBLE CEILING. WHERE MOUNTED BESIDE COUNTER RECEPTACLE: MOUNT SAME HEIGHT AS RECEPTACLE. PROVIDE 4 DATA CABLES FROM DROP BACK TO EQUIPMENT ROOM COORDINATE DATA CABLING REQUIREMENTS WITH OWNER, INCLUDING TYPE
	PANELBOARD, 208Y/120-VOLT, 3-PHASE, 4-WIRE, MOUNTING HEIGHT=6'-0" TO TOP. SEE PANELBOARD SCHEDULES.
	DISCONNECT SWITCH, EXTERNALLY OPERATED, 600V, 3 Ø UNLESS OTHERWISE NOTED. NOTATION INDICATES NUMBER OF POLES AND AMPERAGE CAPACITY. 'NF' SUBSCRIPT INDICATES NON FUSED.
	<u>LEGEND NOTES:</u> 1. ALL MOUNTING HEIGHTS ARE TO TOP OF DEVICE UNLESS INDICATED OTHERWISE.
EXISTING/DEMO/NEW SCHEDULE	
	1. LINE WORK FOR EXISTING, NEW AND TO BE DEMOLISHED USES THE NOMENCLATURE BELOW.
	2. EXISTING LIGHTS SHOWN ON SHEET E2.1 ARE SHOWN AS SOLID DARK LINES FOR CLARITY. SEE ADD ALTERNATE NOTES THIS SHEET.
	EXISTING TO REMAIN
	EXISTING TO BE DEMOLISHED
	NEW

LIGHTING FIXTURE SCHEDULE (NOTE 7)					
FIXTURE TYPE	DESCRIPTION		LAMPS QTY AND TYPE	MOUNTING	REMARKS
	MANUFACTURER	CATALOG NUMBER			
1	LITHONIA	2SPGC240FWA12.125-120ES	(2)F40	RECESSED	
2	LITHONIA	2SPGC340FWA12.125-120ES	(3)F40	RECESSED	
3	LITHONIA	AW240A-120ES	(2)F40	SURFACE	
4	LITHONIA	AW240A-120-ES-EL	(2)F40	SURFACE	
5	LITHONIA	AW340A-120-ES	(3)F40	SURFACE	
6	LITHONIA	AW340A-120-ES-EL	(3)F40	SURFACE	
7	MILLER	VS-2332-04-120	(2)F48/HO	PENDENT	PROVIDE WITH CAT. NO. CX39820 STEM HANGERS
8	LINEAR	F9360	(3)F40	PENDANT	FINISH TO BE SELECTED BY ARCHITECT. PROVIDE WITH 2'-0" STEM HANGERS NOTE 3
9	LINEAR	LWL-248-ES	(2)F40	SURFACE	FINISH TO BE SELECTED BY ARCHITECT. PROVIDE WITH ENERGY SAVING BALLASTS. NOTES 1 AND 4.
10	LINEAR	LWL-224	(2)F20	SURFACE	FINISH TO BE SELECTED BY ARCHITECT. PROVIDE WITH ENERGY SAVING BALLASTS. NOTES 1 AND 4.
11	LITHONIA	C240-120ES	(2)F40	AS INDICATED	
12	LITHONIA	C240-120ES-EL	(2)F40	AS INDICATED	
13	REJUVENATION LAMP & FIXTURE COMPANY	CL6 W/CAT. NO. 0010P SHADE	(1)150W A-21	PENDANT	PROVIDE WITH STD LENGTH PENDANT
14	BENJAMIN	DW-73251-120	(1)400W MH	SURFACE	
15	SPI	SFH1501	(1)250W MH	PENDANT	PROVIDE WITH 3'-0" STEM FINISH TO BE SELECTED BY ARCHITECT
16	SPI	SFH2601	(1)400W MH	PENDANT	PROVIDE WITH 4'-0" STEM. NOTE 5. FINISH TO BE SELECTED BY ARCHITECT
17	LITHONIA	D6AC	(1)150W PAR38	RECESSED	
18	SILTRON	R02P9-EM	(2)F9TT/27K	AS INDICATED	PROVIDE WITH WET LABEL WALL MTD UNIT SHALL BE 8'-0" AFF
19	LITHONIA	W240-120-A-ES	(2)F40	SURFACE	MH=6'-9" AFF, U.N.O.
20	LITHONIA	LP/RL-1	(1)75W A-19	RECESSED	
21	MARCO	FMX711-HPF120-2/7W-106P	(2)F7TT/27K	RECESSED	PROVIDE WITH 300INE CAT. NO. B113 EMERGENCY BALLAST
22	LITHONIA	SPF240FWA12.125ES-120	(2)F40	RECESSED	
23	LITHONIA	2SPF340FW12.125ES-120	(3)F40	RECESSED	
24	LITHONIA	A8C-AR	(1)300W PS-25	RECESSED	
25	MARCO	N1P	(1)100W A-19	SURFACE	MH=7'-6" AFF.
26	LITHONIA	2SPGC240FW12.125-120-ES-EL	(2)F40	RECESSED	
27	LITHONIA	AF13TT7MB-120-HPF	(2)F13TT/27K	RECESSED	
28	SILTRON	R02P9	(2)F9TT/27K	SURFACE	MH=8'-0" AFF
29	MARCO	FMX-711-HPF120-2/7W-106P	(2)F7TT/27K	RECESSED	
30	HI-TEK	TW100S-120	(1)100W HPS	SURFACE	MOUNT 15'-6" ABV FINISHED FIRST FL. FINISH TO BE SELECTED BY ARCHITECT
31	DUAL-LITE	ML751-120	INCLUDED	SURFACE	MH=15'-0" UNLESS OTHERWISE NOTED PROVIDE WITH WIRE GUARD IN RM 129
32	LITHONIA	2SPF340FWA12.125-120-ES-EL	(3)F40	RECESSED	
33	HI-TEK	TW150S-120	(1)150W HPS	SURFACE	MOUNT 13'-6" ABV FINISHED FIRST FL. FINISH TO BE SELECTED BY ARCHITECT
X1	LITHONIA	F2ESW-120	INCLUDED	UNIVERSAL	NOTE 2
X2	LITHONIA	F2ESW2-120	INCLUDED	UNIVERSAL	NOTE 2

NOTES (LIGHTING FIXTURE SCHEDULE):
1. PROVIDE WITH CONTINUOUS, ONE-PIECE FACIA.
2. EXIT SIGNS SHALL HAVE IVORY WHITE HOUSING WITH LETTER COLOR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. WALL MOUNTED EXIT SIGNS SHALL BE MOUNTED 96" AFF.
3. PROVIDE WITH SEAMLESS HOUSING.
4. FOR MOUNTING INFORMATION, SEE SHT. A5.1, DETAIL 15.
5. PROVIDE WITH ASSYMETRICAL KIT CAT. NO. SAX23, WHERE REQUIRED.

LIGHTING SCHEDULE NOTES:
1. SCHEDULE IS IMAGE OF SCHEDULE FROM ORIGINAL DRAWINGS FOR BENT MOUNTAIN ELEMENTARY, BY SFCS., 1989.

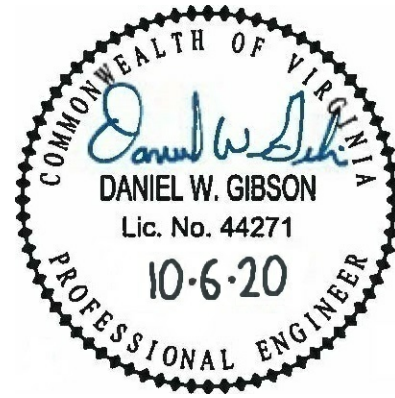


2100 LUENA DR.
CHRISTIANSBURG VA 24073
P. 540.998.6069



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc



BENT MOUNTAIN COMMUNITY CENTER
RENOVATION
LEGEND, GENERAL NOTES & SCHEDULES

1048 TINSLEY AVE.
BENT MOUNTAIN, VA 24059

DRAWN BY DWG
DESIGNED BY DWG
CHECKED BY DWG
DATE 10/06/20
SCALE 1/8"=1'0"
REVISIONS

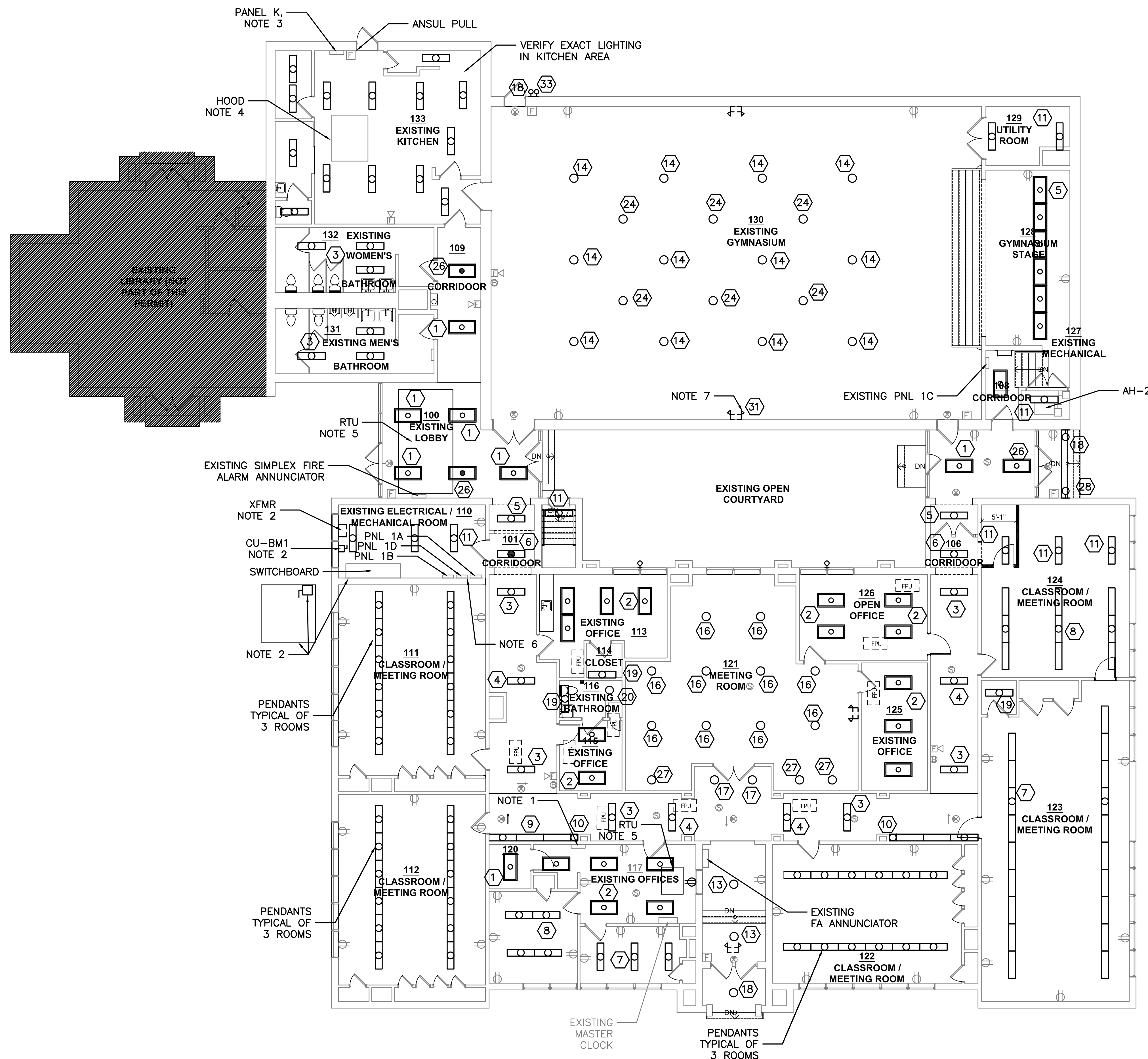
E1.1
PROJECT NO 03190085.00

GENERAL NOTES:

1. ALL EXISTING DEVICES INDICATED ARE EXISTING TO REMAIN UNLESS INDICATED OTHER WISE.
2. REMOVE EXISTING ELECTRICAL FEEDS TO MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. RETAIN EXISTING PANEL AND BREAKERS FOR NEW WORK. SEE NEW WORK FOR NEW LAYOUT.
3. PROVIDE EXTENSION RING AND NEW BLANK FACE PLACE FOR ALL EXISTING EXPOSED SPLICES IN EXISTING BOXES. COORDINATE EXACT LOCATION OF ISSUES WITH FIELD WORK.
4. ALL PANELBOARD INDICATED ARE EXISTING TO REMAIN.
5. COORDINATE WITH MECHANICAL SHEETS FOR DEMOLITION. REMOVE ELECTRICAL ASSOCIATED WITH MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. RETAIN CIRCUIT FOR EQUIPMENT SCHEDULED TO BE REPLACED IN KIND. (F-5). SEE NEW WORK PLAN FOR ADDITIONAL NOTES.

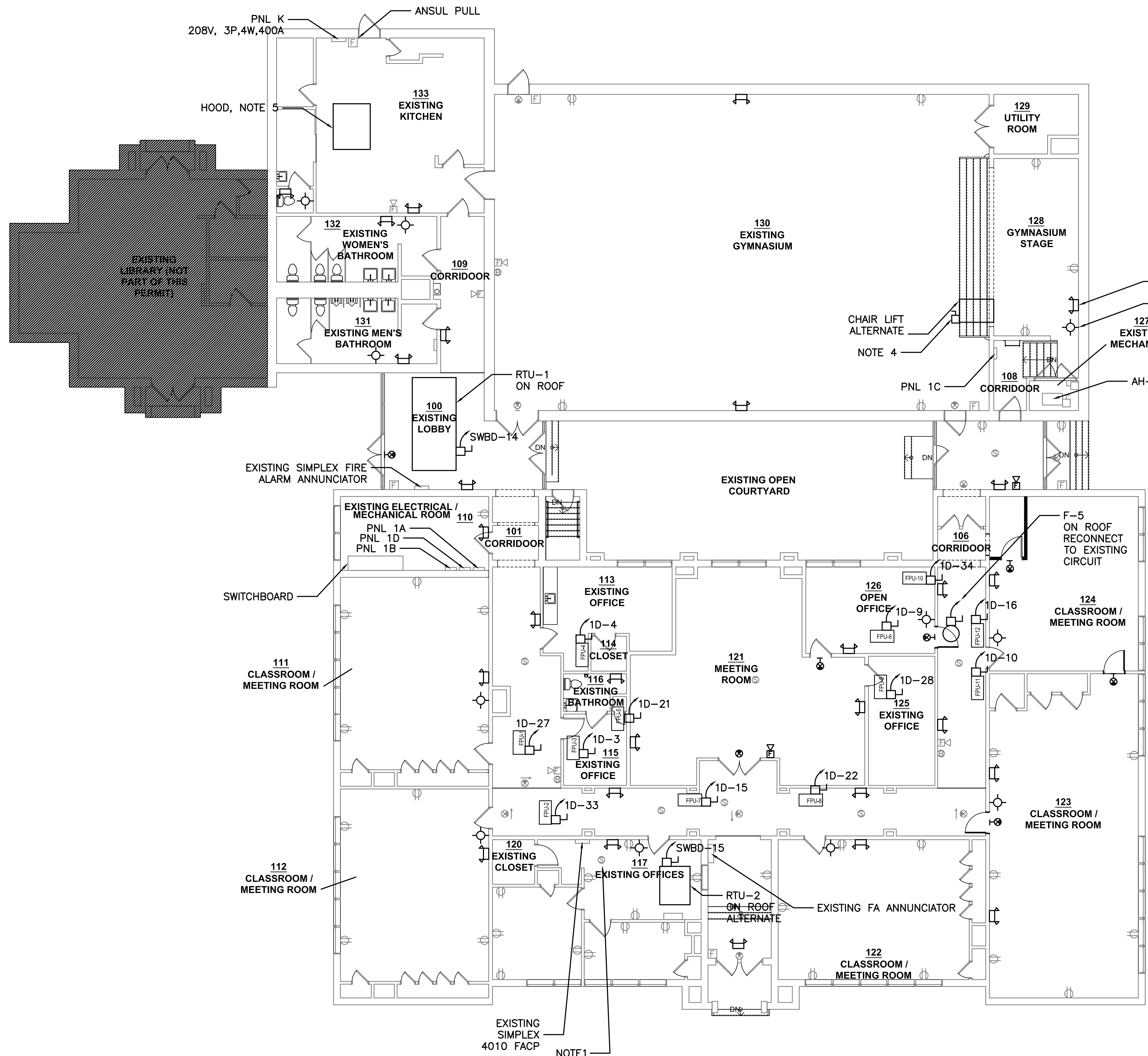
NOTES THIS SHEET:

1. EXISTING SIMPLEX 4100 FIRE ALARM CONTROL PANEL.
2. REMOVE EXISTING EXTERIOR UNITS INDICATED IN THIS AREA. REMOVE ALL CONDUIT AND WIRING BACK TO SOURCE. REMOVE EXISTING TRANSFORMER AND SERVICE DISCONNECT ON INTERIOR OF BUILDING. REMOVE ALL CONDUIT AND WIRING BACK TO SWITCHBOARD. REMOVE EXISTING TAP FROM SWITCHBOARD.
3. RELOCATE EXISTING EQUIPMENT AS REQUIRED IN FRONT OF PANEL FOR CLEARANCE.
4. REPLACE EXISTING CIRCUITS UNDER HOOD WITH SHUNT TRIP BREAKER. CURRENTLY 2 EXISTING CIRCUITS UNDER HOOD. CONNECT BREAKER TO EXISTING FIRE ALARM SYSTEM FOR SHUNT TRIP.
5. REMOVE EXISTING ROOF TOP UNIT AND CONNECTED ELECTRICAL. REMOVE EXISTING CONDUIT AND WIRING BACK TO PANELBOARD.
6. SEE NEW WORK PLAN AND PROVIDE NEW BREAKER IN PANEL 1D FOR NEW LAYOUT OF EQUIPMENT. REMOVE EXISTING FEEDS AND EXISTING BREAKERS.
7. REPLACE ALL EXISTING EMERGENCY BATTERY UNITS. VERIFY EXISTING UNITS ARE CONNECTED TO LOCAL LIGHTING CIRCUIT. TYPICAL, EXISTING FIXTURES ARE SHOWN TO BE DEMOLISHED. RECONNECT NEW EMERGENCY BATTERY UNITS TO LOCAL LIGHTING CIRCUIT.



DEMOLITION PLAN

1/8" = 1'-0"



GENERAL NOTES:

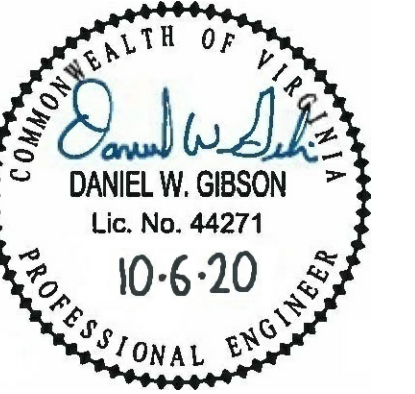
1. ALTERNATE: RE-LAMP ALL EXISTING FIXTURES. ALL EXISTING LAMPS. SEE SHEET E2.1 FOR EXISTING FIXTURE TYPES

NOTES THIS SHEET:

1. RELOCATE EXISTING SMOKE DETECTOR TO BE NEAR FIRE ALARM CONTROL PANEL.
2. PROVIDE NEW EMERGENCY BATTERY UNITS INDICATED.
3. PROVIDE NEW FIRE ALARM VISUALS AND HORN/STROBES INDICATED. CONNECT TO EXISTING FIRE ALARM CONTROL PANEL.
4. PROVIDE A SINGLE POLE, 15 AMP, 120 VOLT, FUSED DISCONNECT AND A 15 AMP BREAKER IN EXISTING PANEL TO FEED HANDICAP LIFT FOR THE STAGE. PROVIDE #12 WIRE AND #12 GROUND TO COMPLETE CIRCUIT. PROVIDE POWER FROM PANEL 1C. COORDINATE WITH INSTALLATION INSTRUCTIONS FOR LOCATION OF DISCONNECT. SEE ADD ALTERNATE INFORMATION ON SHEET E1.1.
5. REPLACE EXISTING CIRCUITS UNDER HOOD WITH SHUNT TRIP BREAKERS. CURRENTLY THERE ARE 2 EXISTING RECEPTACLES UNDER THE HOOD TO REPLACE CIRCUITS WITH SHUNT TRIP BREAKERS. PROVIDE ADDITIONAL RELAYS AS REQUIRED WITH FIRE ALARM CONTROL PANEL, AND ANSUL SYSTEM AND HOOD TO SHUNT TRIP BREAKERS.



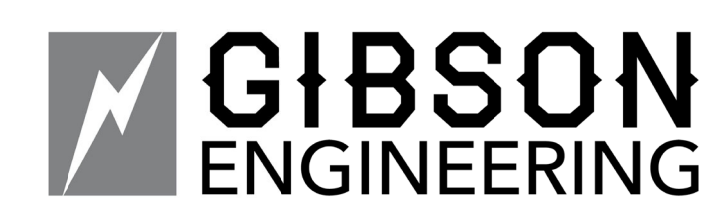
BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc



BENT MOUNTAIN COMMUNITY CENTER
RENOVATION
ELECTRICAL NEW WORK

1048 TINSLEY AVE.
BENT MOUNTAIN, VA 24059

DRAWN BY	DWG
DESIGNED BY	DWG
CHECKED BY	DWG
DATE	10/06/20
SCALE	1/8"=1'-0"
REVISIONS	



2100 LUENA DR.
CHRISTIANSBURG VA 24073
P. 540.998.6069

ELECTRICAL NEW WORK PLAN

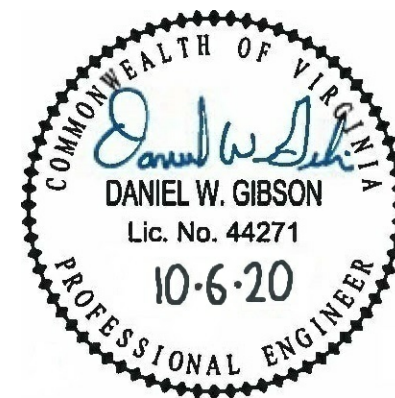
1/8" = 1'-0"

E3.1
PROJECT NO 03190085.00



**BALZER
& ASSOCIATES**
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc



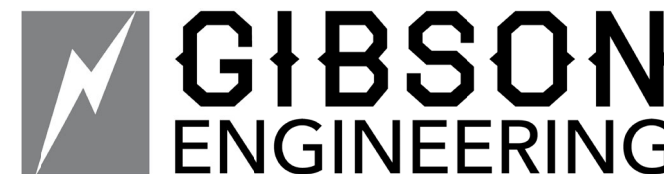
BENT MOUNTAIN COMMUNITY CENTER

RENOVATION

EXISTING PANEL SCHEDULES

1048 TINSLEY AVE.
BENT MOUNTAIN, VA 24059

DRAWN BY DWG
DESIGNED BY DWG
CHECKED BY DWG
DATE 10/06/20
SCALE 1/8"=1'0"
REVISIONS



2100 LUENA DR.
CHRISTIANSBURG VA 24073
P. 540.998.6069

E4.1
PROJECT NO 03190085.00

EXISTING SWITCHBOARD MDP																									
VOLTAGE: 208Y/120				PHASE: 3				BUS AMPS: 1600A				☒ SURFACE MOUNTED				KAIC RATING: 65,000									
				WIRE: 4				MAIN BREAKER AMPS: 1600A				☐ FLUSH MOUNTED													
CKT NO.	BRKR	AMPS	WIRE NO	SZ	*	CIRCUIT DESCRIPTION	LOAD - KVA				CKT NO.	BRKR	AMPS	WIRE NO	SZ	*	CIRCUIT DESCRIPTION	LOAD - KVA							
							PHA	PHB	PHC	3 PH								PHA	PHB	PHC	3 PH				
	3	70				1 AHU-1																			
	3	225				1 PNL 1A																			
	3	225				1 PNL 1C																			
	3	400				1 PNL 1B																			
	3	400				1 PNL 1D																			
	3	400				1 PNL K																			
	3					1 AHU-2																			
TOTAL LEFT SIDE							0.0	0.0	0.0	0.0	TOTAL RIGHT SIDE							0.0	0.0	0.0	0.0				
TOTAL RIGHT SIDE							0.0	0.0	0.0	0.0	TOTAL CONNECTED LOAD										0.0				
TOTAL							0.0	0.0	0.0	0.0															
* NOTES																									
1. EXISTING LOADS.																									

EXISTING PANEL 1C																										
VOLTAGE: 208Y/120						PHASE: 3						BUS AMPS: 225A						☒ SURFACE MOUNTED			KAIC RATING: 22,000					
						WIRE: 4						MAIN BREAKER AMPS: 400						☐ FLUSH MOUNTED								
CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION			LOAD - KVA				CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION			LOAD - KVA										
NO.	P	AMPS	NO	SZ	*	PHA	PHB	PHC	3 PH	NO.	P	AMPS	NO	SZ	*	PHA	PHB	PHC	3 PH							
1	1	20				LIGHTING				2	1	20				EXIT LIGHT S										
3	1	20				LIGHTING				4	1	20				LIGHTING										
5	1	20				LIGHTING				6	1	20				LIGHTING										
7	1	20				LIGHTING				8	1	20				LIGHTING										
9	1	20				LIGHTING				10	1	20				LIGHTING										
11	1	20				SOUND SYSTEM				12	1	20				LIGHTING-GYM										
13	1	20				MECH CNTRL S				14	1	20				LIGHTING-GYM										
15	1	20				RCPTS				16	1	20				LIGHTING-GYM										
17	1	20				RCPTS-COMPUTERS				18	1	20				LIGHTING-GYM										
19	1	20				RCPTS				20	1	20				RCPTS										
21	1	20				RCPTS				22	1	20				RCPTS RM 4										
23	1	20				FAN #5				24	1	20				RCPTS RM 3										
25										26	1	20														
27	3					CABINET HEATER #2				28	3					WALL HEATER #4										
29										30	1															
31	1	20								32	1					SPACE										
33	1	20								34	1					SPACE										
35	1	20								36	1					SPACE										
37	1					SPACE				38	1					SPACE										
39	1					SPACE				40	1					SPACE										
41	1					SPACE				42	1					SPACE										
TOTAL LEFT SIDE						0.0	0.0	0.0	0.0	TOTAL RIGHT SIDE						0.0	0.0	0.0	0.0							
TOTAL RIGHT SIDE						0.0	0.0	0.0	0.0	TOTAL CONNECTED LOAD						0.0										
TOTAL						0.0	0.0	0.0	0.0																	
* NOTES																										

EXISTING PANEL 1A																										
VOLTAGE: 208Y/120						PHASE: 3						BUS AMPS: 225A						☒ SURFACE MOUNTED			KAIC RATING: 22,000					
						WIRE: 4						MAIN BREAKER AMPS: 400						☐ FLUSH MOUNTED								
CKT	BRKR	WIRE				CIRCUIT		LOAD - KVA				CKT	BRKR	WIRE				CIRCUIT		LOAD - KVA						
NO.	P	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH	NO.	P	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH					
1	1	20				LIGHTING					2	1	20				LIGHTING									
3	1	20				LIGHTING					4	1	20				LIGHTING									
5	1	20				LIGHTING					6	1	20				LIGHTING									
7	1	20				LIGHTING					8	1	20				LIGHTING									
9	1	20				LIGHTING					10	1	20				LIGHTING									
11	1	20				LIGHTING					12	1	20				LIGHTING									
13	1	20				LIGHTING					14	1	20				EXT LTS FRONT									
15	1	20				LIGHTING					16	1	20				LIGHTING									
17	1	20				LIGHTING					18	1	20				EXIT LTS									
19	1	20				LIGHTING					20	1	20				EXT LTS BACK									
21	1	20				RCPT S					22	1	20				RCPT-LOUNGE/LIB/INTERNET									
23	1	20				ELEC WATER COOLER					24	1	20				ELEC WATER COOLER									
25	1	20				ROOF MNTD RCPT					26	1	20				RCPT-LONGE RR/VENDING									
27	1	20				RCPT S					28	1	20				RCPT-MAIN OFFICE/COMP									
29	1	20				FACP					30	1	20				ROOF MNTD RCPT									
31	1	20				FACP					32	1	20				RCPTS									
33	1	20				INTERCOM SYS					34	1	20				TELEPHONE PNL									
35	1	20				SUMP PUMP BASEMENT					36	1	20				HYDRO TANK CNTRL PNL									
37	1	20				RCPT S					38	2	20				WELL PUMP									
39	1	20				SUMP-WELL HOUSE					40		20													
41	1	20				COMP CKT RM 1					42	1	20				VIDEO/SURVEQPT									
TOTAL LEFT SIDE							0.0	0.0	0.0	0.0	TOTAL RIGHT SIDE							0.0	0.0	0.0	0.0					
TOTAL RIGHT SIDE							0.0	0.0	0.0	0.0	TOTAL CONNECTED LOAD											0.0				
TOTAL							0.0	0.0	0.0	0.0																
* NOTES																										

EXISTING PANEL 1B																			
VOLTAGE: 208Y/120				PHASE: 3				BUS AMPS: 400A				☒ SURFACE MOUNTED				KAIC RATING: 22,000			
				WIRE: 4				MAIN BREAKER AMPS: 400				☒ FLUSH MOUNTED							
CKT NO.	BRKR P	WIRE		*	CIRCUIT DESCRIPTION	LOAD - KVA				CKT NO.	BRKR P	WIRE		*	CIRCUIT DESCRIPTION	LOAD - KVA			
		NO.	SIZE			PHA	PHB	PHC	3 PH			NO.	SIZE			PHA	PHB	PHC	3 PH
1	1	20			DRAFT AREA HTR #1					2	1	20			FAN 4				
3	1	20			DRAFT AREA HTR #1					4	1	20			FANS 2 & 3				
5	2	20			DRAFT AREA HTR #2					6	2	20			WALL HTR (GILR RR)				
7		20								8		20							
9	2	20			DRAFT AREA HTR #3					10	2	20			WALL HTR (BOY RR)				
11		20								12		20							
13										14									
15	3	30			CABINET HTR #1					16	3	50			HEAT PUMP #1				
17					FRONT DOOR					18					(OFFICE)				
19										20									
21	3	20			CABINET HTR #2					22	3	20			CABINET HTR #3				
23										24									
25										26									
27	3	30			WATER HTR #1					28	3	30			DUPLEX AIR COMPR				
29					BATH RMS					30									
31	1	20			MECH TIME CLOCK					32	1	20			LBRY COMP CKT				
33	1	20			NEW COMP CKT					34	1	20			RCPT ACTIVE BOARD LIBRARY RM 5				
35	1	20			NEW COMP CKT					36	2	20			DUCTLESS				
37	1				SPACE					38					SPLIT #1				
39	1				SPACE					40	2	20			DUCTLESS				
41	1				SPACE					42					SPLIT #2				
TOTAL LEFT SIDE						0.0	0.0	0.0	0.0	TOTAL RIGHT SIDE						0.0	0.0	0.0	0.0
TOTAL RIGHT SIDE						0.0	0.0	0.0	0.0	TOTAL									
TOTAL						0.0	0.0	0.0	0.0	TOTAL CONNECTED LOAD									0.0
DRAFT AREA HTR #																			
* NOTES																			

ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

Provide new lighting, power, data and low voltage systems as indicated on the plans. Project is a renovation of existing building.

1.2 QUALITY ASSURANCE

A. General

- Comply with IEEE C2, "National Electrical Safety Code".
- IEEE Compliance: Comply with applicable Institute of Electrical and Electronics Engineers, Inc. standards pertaining to generator construction.
- NEC Compliance: Comply with NFPA 70, "National Electrical Code" as applicable to construction and installation of products required in this specification.
- UL and NEMA Compliance and Labeling: Provide products which have been labeled by Underwriters Laboratories and have been certified to comply with UL requirements.
- IEEE Compliance: Comply with STD 241, "IEEE Recommended Practice for Electrical Power Systems in Commercial Buildings" pertaining to communication systems.

B. MOTOR CONTROLLERS

- UL and NEMA Compliance and Labeling: Provide products which have been labeled by Underwriters' Laboratories and have been certified to comply with UL and NEMA.

C. LIGHTING

- NEMA Compliance: Comply with applicable requirements of NEMA Stds. Pub/No.'s LE 1 and LE 2 pertaining to lighting equipment.
- UL Compliance: Comply with UL standards, including UL 486A and B, pertaining to lighting fixtures. Provide lighting fixtures and components which are UL_listed and labeled. Provide exterior fixtures with "Suitable for Wet Location" label.
- CBM Labels: Provide fluorescent lamp ballasts which comply with Certified Ballast Manufacturers Association standards and carry the CBM label.

1.3 COORDINATION OF ELECTRICAL WORK

- General: Refer to the division sections for general coordination requirements applicable to the entire work. It is recognized that the contract documents are diagrammatic in showing certain physical relationships which must be established within the electrical work and in its interface with other work including utilities and mechanical work and that such establishment is the exclusive responsibility of the Contractor.
 - Arrange electrical work in a neat, well organized manner with conduit and similar services running parallel with primary lines of the building construction and with the maximum headroom possible, but a minimum 7'_0" overhead clearance.
 - Locate operating and control equipment properly to provide easy access and arrange entire electrical work with adequate access for operation and maintenance.
 - Advise other trades of openings required in their work for the subsequent move_in of large units of electrical equipment.
 - Coordinate all work, including power outages, with Owner's Schedule of Operation.

- Product Handling: Space at the project for storage of materials and products is limited. Coordinate the deliveries of electrical materials and products with the scheduling and sequencing of the work so that storage requirements at the project are minimized. In general, do not deliver individual items of electrical equipment to the project substantially ahead of the time of installation.

1.3 ELECTRICAL SYSTEM IDENTIFICATION

- Conduit Systems: Provide adequate marking of primary conduits which are exposed or concealed in accessible spaces, to distinguish each run as either a power or signal/communication conduit. Except as otherwise indicated, use orange banding with black lettering. Provide self_adhesive or snap_on type plastic markers. Indicate voltage ratings of conductors where above 240 V. Locate markers at ends of conduit runs, near switches and other control devices and near items of equipment served by the conductors. Switch_leg conduit and short branches for power connections need not be marked, except where conduit is larger than 1 inch. Label all junction boxes with branch circuit numbers terminated within.
- Identification Labels and Warning Signs: Provide engraved plastic_laminate or baked enamel labels on major units of electrical equipment including switchboards, panelboards, motor controllers, disconnect switches, signal and similar systems. Label shall include equipment identification mark and voltage characteristics and shall be melamine plastic, 0.125_inch thick, white with black center core. Provide warning signs where there is hazardous exposure or danger associated with access to or operation of electrical facilities. Provide text of sufficient clarity and lettering of sufficient size, minimum 0.25 inch nominal block style, to convey adequate information at each location; mount permanently in an appropriate and effective location.

1.4 PAINTING ELECTRICAL WORK

- General: Except as otherwise indicated, comply with the applicable provisions of Division 9 for electrical_work painting. Electrical equipment shall have factory_applied painting systems which shall meet the requirements of NEMA ICS6. The work of this article shall include general field painting of electrical work.
 - Coordinate the painting with the painting of other work of a similar nature and comply with indicated color and color matching requirements. Except as otherwise indicated, paint surfaces of electrical work which would normally be painted in the application and exposure indicated.
- Do not paint over nameplates on equipment, sliding/rotating shaft surfaces, non_ferrous hardware/accessories/trim and similar items where painting would normally be omitted.

1.5 ELECTRICAL SYSTEM PERFORMANCE

- General: The overall system performances of electrical work are of even greater importance than the specified individual_unit_of_work performances. Each unit of electrical work has been designed and specified to perform at minimum levels of output and efficiency and is intended to contribute to and be compatible with the entire system. Compatibility of actual performances by electrical system performances is the Contractor's responsibility.
- Adjustments: Where it has been determined that electrical systems do not or will not perform in compliance with the specified performances, adjustments or corrections shall be made to the work as necessary to achieve required performances.

1.6 ELECTRICAL WORK CLOSEOUT

- Additional Service: Perform services within the above 12-month period not classified as routine maintenance or as warranty work as described in Division 1 Section "Warranties and Bonds" when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.
- Closeout Coordination: Coordinate closeout operations with closeout of mechanical systems and other power consuming equipment.
- Record Drawings: Maintain a blue_line set of electrical contract drawings and/or shop drawings in clean, undamaged condition, for indication of major electrical equipment or concealed lines located in position other than that shown on the contract drawings. Mark_up whatever drawings are most capable of showing installed conditions accurately. In general, record every substantive installation of electrical work which previously is either not shown or shown inaccurately, specifically record the following:
 - Work concealed behind or within other work, in a nonaccessible location.
 - Main feeders with switchgear, panelboards, and control devices located, identified and numbered. This information shall be displayed in a glazed, hardwood frame, minimum two (2) feet square, near the main service disconnect.
 - Maintenance procedures and schedules.
 - Testing procedures and acceptable parameters.
- Cleaning and Lubrication: After final testing of each electrical system, clean system both externally and internally. Comply with manufacturer's instructions for lubrication of both power and hand operated equipment. Touch_up minor damage to factory_painted finishes and provide one pint of touch-up paint for each color of major equipment installed.

1.10 SUBMITTALS

A. LIGHTING

- Product Data: Submit manufacturer's product data and installation instructions on each type building lighting fixture photocell, contactor and component.
- Shop Drawings: Submit fixture shop drawings where specifically indicated in booklet form with separate sheet for each fixture, assembled in "luminaire type" alphabetical or numerical order, with proposed fixture and accessories clearly indicated on each sheet.
- Maintenance Data: Submit maintenance data and parts list for each lighting fixture and accessory; including "trouble_shooting" maintenance guide. Include that data, product data, and shop drawings in a maintenance manual.

PART 2 - PRODUCTS

2.1 CABLE AND WIRE

- Provide factory-fabricated wire or cable of the size, rating, material and type as indicated for each service in compliance with NECA - Standard of Installation. Where not indicated, provide proper selection as determined by the work requiring the installation to comply with NEC standards. Conductors shall be rated 600 volt of insulation type THW, THWN, THHN, or USE installed in compliance with National Electrical Code requirements.
- Provide bonding conductors for sizes No. 8 AWG and smaller of solid bare copper per ASTM B 1, and for sizes No. 6 AWG and larger stranded bare copper per ASTM B 8.
- No. 10 AWG and smaller diameter shall be solid copper; No. 8 AWG and larger diameter shall be stranded copper.
- Provide color coding for service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors and white for neutrals; except where neutrals of more than one system are installed in same raceway or box, other neutral shall be white with colored (not green) stripe. Color of ungrounded conductors in different voltage systems shall be as follows:
 - 120/208 volt, 3-phase:
 - Phase A - black.
 - Phase B - red.
 - Phase C - blue.
- Provide the following types of cables in NEC approved locations and applications where indicated. Provide cable UL listed for its intended use.
 - Metal clad cable: Type MC.
- Provide UL 486A, factory-fabricated, solderless, metal connectors of the size, ampacity, rating, material, type and class as indicated for each service. Where not indicated, provide proper selection as determined by the work requiring the installation to comply with NEC standards. Provide insulating tape in compliance with UL 510.

2.2 ELECTRICAL RACEWAYS

- Metal Conduit, Tubing and Fittings: Provide metal conduit, tubing and fittings of type, grade, size and weight indicated for each service. Where type and grade are not indicated, provide proper selection as determined by the work requiring the installation to comply with NEC standards for wiring requirements.
 - Rigid Steel Conduit: ANSI C80.1, UL 6.
 - Intermediate Steel Conduit (Zinc Coated Steel): UL 1242.
 - Rigid Metal Conduit Fittings: UL 514B, cadmium- or zinc- coated threaded type.
 - Electrical Metal Tubing (EMT): ANSI C80.3, UL 797.
 - EMT Fittings: UL 514B, compression or set-screw type
 - Flexible Metal Conduit: Cadmium- or zinc-coated steel.
 - Flexible Metal Conduit Fittings: UL 514B, cadmium- or zinc-coated.
 - Liquid-Tight Flexible Metal Conduit: UL 360, provide liquid-tight flexible metal conduit comprised of single strip, continuous, flexible, interlocked, double-wrapped steel, galvanized inside and outside; forming smooth internal wiring channel; with liquid-tight jacket of flexible polyvinyl chloride.
 - Liquid-Tight Flexible Metal Conduit Fittings: FS W-F-406.
- Wireways: Electrical wireways shall be of types, sizes, and number of channels as indicated. Fittings and accessories including but not limited to couplings, offsets, elbows, expansion joints, adapters, hold-down straps, and end caps shall match and mate with wireway as required for complete system. Where features are not indicated, select to fulfill wiring requirements and comply with applicable provisions of NEC. Wireway covers shall be hinged type.
- Surface Metal Raceways and Fittings: UL 5, two-piece steel, totally enclosed. Snap cover type with wiring devices, sizes and channels as indicated. Wiremold, or approved equal.
 - Type a: Two section, steel, approximately 7/8 inch x 1 1/4 inch wide, with 20 amp, 125V, specification grade grounding surge protection receptacles 2'-6" on centers, alternating circuits. Provide with ivory paintable finish.

2.3 ELECTRICAL OUTLET BOXES AND FITTINGS

- Interior Outlet Boxes: UL 514A, provide galvanized flat rolled sheet steel interior outlet wiring boxes, flush mounted of type, shapes and sizes, including box depths, to suit each respective location and installation; construct with stamped knockouts in back and sides, and with threaded screw holes with corrosion-resistant screws for securing box covers and wiring devices. Provide feraloy cast outlet boxes where surface mounted with threaded conduit hubs to suit each respective location and installation.
- Weatherproof Outlet Boxes: Provide corrosion-resistant cast metal weatherproof outlet wiring boxes, of types, shapes and sizes, with threaded conduit ends, cast metal face plates with spring-hinged waterproof caps suitably configured for each application, including faceplate gaskets and corrosion-resistant fasteners. Weatherproof while in operation.
- Cast-Iron Floor Boxes: Fully adjustable, waterproof, with threaded raceway entrances, adjusting rings, gaskets, and brass floor plates. Provide multi-section boxes with individual screw type brass section covers, barrier between compartments and provide for a duplex receptacle under one or more of the covers. Telephone outlets shall have provisions to accommodate 10-wire telephone terminal block. Provide gaskets where required to ensure watertight installation. Provide trim suitable for floor conditions.

2.4 WIRING DEVICES

- General: Provide factory-fabricated wiring devices, in types, colors and electrical ratings for applications indicated and complying with NEMA Standards Publication No. WD 1. Where types and grades are not indicated, provide proper selection as determined by installer to fulfill wiring requirements, and comply with NEC and NEMA standards for wiring devices. Provide receptacles with isolated ground and/or surge protection where indicated.
- Receptacles:
 - Hospital Grade Duplex: UL 498, provide duplex heavy duty type receptacles, 2-pole, 3-wire grounding, with green hexagonal equipment ground screw, ground terminals and poles internally connected to mounting yoke, 20-amperes, 125 volt, ivory nylon face with metal plaster ears, side wiring, NEMA Configuration 5-20R, unless otherwise indicated.
 - Hospital Grade Ground Fault Receptacle: Provide ground fault protected duplex receptacle
 - Provide with cast aluminum weatherproof cover where indicated to be WP while in operation.
- Switches:
 - Snap: UL 20, provide general duty flush single-pole toggle switches, 20-amperes, 120-277 volts AC only, with mounting yoke insulated from mechanism, equip with plaster ears, ivory switch handle and side wired screw terminals. Single pole, Three-way and Four-way as indicated on drawings.
 - Motion Sensing, Ceiling Mounted: Provide dual technology ultrasonic and passive infrared or microphonic and passive infrared motion detector, manual off switch, 0 to 4800 watt fluorescent switching capacity, 277 volts AC, 360 sensing coverage, six to 15 minute off time delay, LED walk test indicator, bypass switch, suitable for use in classrooms, 5_year warranty, UL listed, Universal Energy Control (UNENCO) Switchomatic Coordinate with connected wattage and type of room light fixtures.
- Wiring Device Accessories:
 - Wall Plates: Provide UL listed, one-piece device plates for outlets and fittings to fit the device installed. For flush-mounted outlets on finished walls, provide white switch and outlet plates of types, sizes and with ganging and cutouts as indicated. Install with metal screws for securing plates to devices; screw heads colored to match finish of plate.
 - For surface mounted boxes, provide feraloy cast outlet plates on all outlet boxes, type suitable for wiring device installed in box.
 - Provide plate with engraved legend where indicated.

2.5 SAFETY AND DISCONNECT SWITCHES

- General: UL 98, NEMA KS1, provide surface-mounted, sheet-steel enclosed switches, of types, sizes and electrical characteristics indicated; 3-blades, 4-wire with amperage rating as required, 60 hertz and visible blades with door in open position. Provide with safety handle which is easily recognizable and is capable of being padlocked in the open position and operating mechanism for quick-make and quick-break. Current carrying parts of high-conductivity copper, with silver-tungsten type switch contacts. Provide NEMA 1 type enclosures indoors and NEMA 3R type enclosures with raintight hubs outdoors.
- Provide General Duty Type: 240 volts AC, Type GD. Heavy Duty Type: 600 volts AC.
- Switches used as motor disconnect means shall be horsepower rated. Fused switches shall utilize Class R fuseholder and fuses unless indicated otherwise or recommended by equipment manufacturer.

2.6 ELECTRICAL GROUNDING AND BONDING EQUIPMENT

- General: UL 467. Provide grounding products of types indicated and of sizes and ratings as required by NEC. Provide all material required including but not necessarily limited to, cable/wire, connectors, terminals (solderless lugs), grounding rods/electrodes, bonding jumper braid and other items and accessories needed for a complete installation. Where more than one type meets indicated requirements, selection is installer's option. Where materials or components are not otherwise indicated, provide products complying with NEC, and established industry standards.

- Electrical Grounding Conductors: Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials except bare or green insulation and sized according to NEC. Equipment grounding conductors shall have green insulation. Solid conductors shall comply with ASTM B-3, stranded conductors with ASTM B-8.

- Grounding Connectors: Provide listed and labeled grounding connectors for the required materials. Provide high-conductivity plated pressure connector units or exothermic welded connections.

2.7 COMBINATION MOTOR CONTROLLERS

- General: Motor circuit protector; molded-case circuit-type breaker type with magnetic-only trip element calibrated to coordinate with the actual locked-rotor current of the connected motor and the controller overload relays. Provide breakers that are factory assembled with the controller, interlocked with unit cover or door, and arranged to disconnect the controller. Provide motor circuit-protectors with field-adjustable trip elements.

2.8 LIGHTING FIXTURES

- Provide lighting fixtures of sizes, types, and ratings indicated in lighting fixture schedule
- Wiring: Provide electrical wiring within fixture suitable for connecting to branch circuit.
 - NEC Type AF for 120 volt, minimum No. 18 AWG.
 - NEC Type SF_2 for 277 volt, minimum No. 18 AWG.

2.9 TIME CONTROLLED SWITCHES

- Provide electrically operated time controlled maintained contact switches with 24_hour dials capable of periodically and automatically switching mechanically held or electrically held contactors ON and OFF. Select switches which permit selection of from 1 to 7 ON_OFF operations each day; with coil ratings of 120 volts, 60 Hz, and with DPDT switch. Provide flush mount enclosure, NEMA Type 1, with side hinged door and lock, mounting holes and knockouts. Provide timing switch with manual circuit by_pass switch, 10 hour reserve power, and separate grounding terminal. Finish enclosure with manufacturer's standard gray finish.

2.10 MOTION DETECTORS

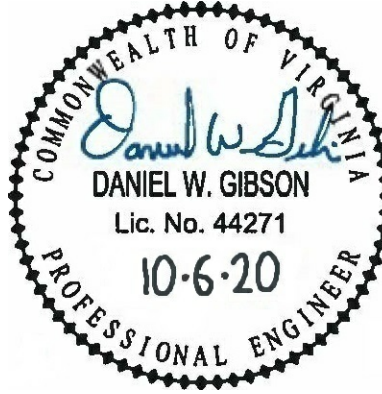
- Indoor Motion Detectors: Provide passive infrared motion sensor to operate lights on detection of occupancy, 120/277 volts, field adjustable.
- Outdoor Motion Detectors: Passive infrared motion sensor in weatherproof enclosure with adjustable digital sensitivity and time delay and isolated SPDT relay contact. Provide unit suitable for operation at temperatures as low as -40F. Provide adjustable mounting bracket.



**BALZER
& ASSOCIATES**
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg

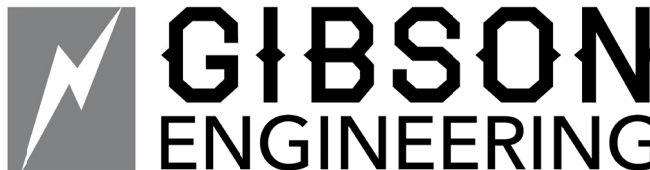
www.balzer.cc



BENT MOUNTAIN COMMUNITY CENTER
RENOVATION
SPECIFICATIONS

1048 TINSLEY AVE.
BENT MOUNTAIN, VA 24059

DRAWN BY	DWG
DESIGNED BY	DWG
CHECKED BY	DWG
DATE	10/06/20
SCALE	1/8"=1'-0"
REVISIONS	



2100 LUENA DR.
CHRISTIANSBURG VA 24073
P. 540.998.6069

E5.1
PROJECT NO 03190085.00

INSTALLATION
PART 3 - INSTALLATION

3.1 General

- A. Verify final locations for rough_in with field measurements and with the requirements of the actual equipment to be connected.
- B. Rough_in for owner furnished equipment to make equipment operate as intended, including providing miscellaneous wiring items.
- C. Adjust operating mechanisms for free mechanical movement. Clean interior and exterior using manufacturer's approved methods and materials.
- D. Touch-up scratched or marred surfaces to match original finish.
- E. In general, perform cutting and patching as necessary. Exercise care where cutting, channeling, chasing or drilling floors, walls, partitions, ceilings or other surfaces for installation of electrical work.
- F. Patch finished surfaces and building components using new materials specified for the original installation and experienced installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.

3.2 CABLE, WIRE AND CONNECTORS

- A. Provide insulated conductors installed in conduit, except where specifically indicated or specified otherwise or required by NEC to be installed otherwise. Provide insulated equipment grounding conductor in feeder and branch circuits, including lighting circuits. Grounding conductor shall be separate from electrical system neutral conductor.
- B. Coordinate cable and wire installation with electrical raceway and equipment installation. Conductor sizes indicated are copper. Pull conductors together where more than one is being installed. Use pulling means and lubricant that will not damage conductor or raceway. Use splice and tap connectors which are compatible with conductor material, and only in accessible junction, pull or outlet boxes.
- C. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A.

3.2 ELECTRICAL RACEWAYS

- A. Provide with complete electrical raceway system before installing conductors within raceways. Provide support as required by NEC but within 1 foot of a change in direction or connection to an enclosure, cover ends of empty conduit to prevent entry of debris during rough-in, provide bonding type locknuts at boxes. Conceal conduit, unless indicated otherwise within finished walls, ceilings and floors. Run exposed conduits parallel or perpendicular to the building structure, close to the ceiling or beams. Keep raceways at least 6 inches away from parallel runs of flues, steam, and hot water pipes.
- B. Use the following wiring methods:
- a. Outdoors:
- i. Intermediate metal conduit
- ii. Rigid metal conduit
- iii. Liquid-tight flexible metal conduit
- b. Indoors:
- i. Electrical metallic tubing
- ii. Flexible metal conduit
- iii. Rigid metal conduit (where exposed and subject to damage)
- C. Use raceway fittings that are of types compatible with the associated raceway and suitable for the use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings except as otherwise indicated.
- D. Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same center line so that the bends are parallel. Factory elbows may be used in banked runs only where they can be installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways be of the same size. In other cases provide field bends for parallel raceways.
- E. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line having not less than 200-lb. tensile strength. Leave not less than 12 inches of slack at each end of the pull wire.
- F. Flexible Connections: Use short length (maximum of 6 ft.) of flexible conduit for recessed and semirecessed lighting fixtures, for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquid-tight flexible conduit in wet locations. Install separate ground conductor across flexible connections.
- G. Surface Metal Raceway: Install to walls, cabinets, and ceilings as recommended by equipment manufacturer with fasteners suitable for the material to which the surface metal raceway is being attached. Install a separate green ground conductor in raceway from the junction box supplying the raceway to receptacle or fixture ground terminals. Provide as an integral part or install wiring devices as indicated. Make cuts and other modifications with factory cuts and other modifications with factory furnished tools specifically designed for the purpose.

3.3 ELECTRICAL BOXES AND FITTINGS

- A. Provide weatherproof outlet boxes for interior and exterior locations exposed to moisture, flush mounted boxes for connection to concealed conduit and pull boxes as required for installation of conductors. Sizes shall be adequate to meet NEC volume requirements, but not smaller than sizes indicated. Remove knockouts only as required and plug unused openings.
- B. Fasten boxes rigidly to substrate or structural surfaces to which they are to be mounted, or solidly embed electrical boxes in concrete or masonry.

3.4 WIRING DEVICES

- A. Install wiring devices in clean outlets after wiring has been installed. Do not install plates and cover installed wiring devices until painting is complete.
- B. Ground all wiring devices unless indicated otherwise. Test wiring devices for correct polarity, proper ground and electrical continuity.
- C. Install covers and device plates with edges in continuous contact with finished wall surfaces without use of mats or similar devices. Plaster or caulking used as a filling to repair openings around outlets shall not be applied without removing the cover or device plate. Plates installed in wet areas shall be gasketed.

3.5 SAFETY AND DISCONNECT SWITCHES

- A. Install disconnect switches used for motor-driven equipment within sight of the controller and motor and not more than 50 feet from the controller and motor unless indicated otherwise.
- B. Provide an electrical ground for all disconnect switches.
- C. Test all switches for proper operation by operating them energized, but without load for six opening/closing cycles. Inspect switch and correct deficiencies, then retest to demonstrate compliance.

3.6 ELECTRICAL GROUNDING EQUIPMENT

- A. Install electrical grounding systems where shown, in accordance with applicable portions of National Electrical Code, **NECA 331-2014 "Standard for Building and Service Entrance Grounding and Bonding,"** and in accordance with recognized industry practices to ensure that products comply with requirements and serve intended functions.
- B. Provide separate grounding conductor with wiring in all raceways.
- C. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing where indicated.
- D. Install clamp-on connectors only on thoroughly cleaned metal contact surfaces, to ensure electrical conductivity and circuit integrity.

3.7 LIGHTING FIXTURES

- A. General: Install lighting fixtures of types indicated, where shown and at indicated heights, in accordance with lighting fixture manufacturer's written instructions and with recognized industry practices. Comply with NEMA standards and requirements of National Electrical Code pertaining to installation of lighting fixtures and with applicable portions of NECA's "Standards of Installation".

- B. Fasten surfaced fluorescent fixtures to suspended ceiling system near corner of each unit. Bolt fixture to main ceiling supports with stud_clips minimum 1/2_20. Support fixtures weighing in excess of 56 pounds directly from the building structure. Recessed and semi_recessed fixtures may be supported from suspended ceiling support system ceiling tees if the ceiling system support wires are provided at a minimum of four wires per fixture and located not more than 6 inches from each corner of each fixture. In addition, provide support clips securely fastened to ceiling grid members at or near corner of each recessed fixture.

- C. Secure pendant mounted fluorescent fixtures via outlet box directly to building structure with approved bolting and clamps. Provide each stem or hanger with an approved swivel joint to ensure a continued plumb installation.

- D. Mounting heights indicated are to bottom of ceiling_mounted fixtures and to center of wall mounted fixtures.

- E. Install parking lighting units complete with poles/standards and products as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC, NESC and NEMA standards, and with recognized industry practices to ensure that roadway and parking area lighting equipment fulfill requirements.

- F. Adjust poles as necessary to provide a permanent plumb vertical position with the bracket arm in proper position for luminaire location. After installation, touch up pole finish with paint furnished by pole manufacturer.

- G. Metal Poles: Provide anchor bases with galvanized steel anchor bolts, threaded at the top end and bent 90 degrees at the bottom end. Provide galvanized nuts, washers, and ornamental covers for anchor bolts. Concrete for anchor bases, polyvinyl chloride (PVC) conduit ells, and ground rods shall be as specified. Thoroughly compact backfill with compacting arranged to prevent any pressure between conductor, jacket, or sheath and the end of the conduit ell.

- H. Install all exit lights lighting units plumb, square and level with walls and ceilings and secure in accordance with manufacturer's written instructions. Mounting heights shall be to bottom of unit.

- I. Clean lighting fixtures of dirt and debris upon completion of installation. Protect installed fixtures from damage during remainder of construction period.

- J. Do not install interior fixture lens until construction is complete or protect lens from accumulation of dust and debris.

- K. Adjust all fixtures with adjustable aiming to meet the Architect/Engineer's approval.

- L. Test all lighting fixtures for compliance with intended purpose. Correct malfunctioning or noisy units, then retest to demonstrate compliance.

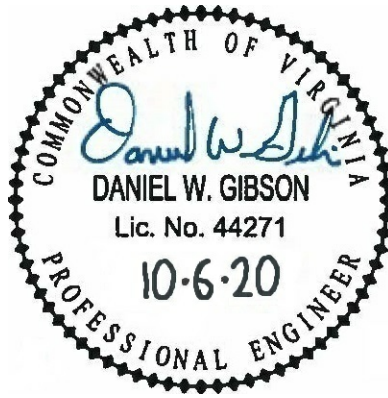
- M. At date of substantial completion, replace all lamps which are observed to be noticeably dimmed as judged by the Architect/Engineer.

- N. Provide tight equipment grounding connections to comply with tightening torques specified in UL 486A for each lighting fixture.



**BALZER
& ASSOCIATES**
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc

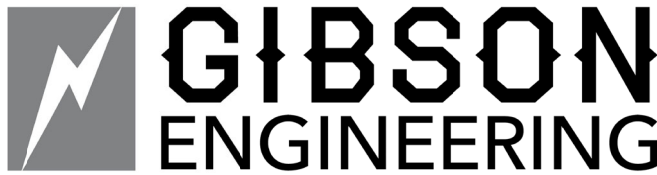


BENT MOUNTAIN COMMUNITY CENTER

RENOVATION
SPECIFICATIONS

1048 TINSLEY AVE.
BENT MOUNTAIN, VA 24059

DRAWN BY	DWG
DESIGNED BY	DWG
CHECKED BY	DWG
DATE	10/06/20
SCALE	1/8"=1'0"
REVISIONS	



2100 LUENA DR.
CHRISTIANSBURG VA 24073
P. 540.998.6069

E5.2
PROJECT NO 03190085.00