| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | 1. Contract Number | Page of Pages | |
|---|---|---|---|
| | | 1 | 76 |

| 2. Amendment/Modification Number | 3. Effective Date | 4. Requisition/Purchase Request No. | 5. Solicitation Caption |
|---|---|---|---|
| GF-2023-B-0028-002 | See item 16C | | STAR Biomedical Research Labs |

| 6. Issued By: Code | 7. Administered By (If other than line 6) |
|---|---|
| University of the District of Columbia<br>Office of Contracting & Procurement<br>4200 Connecticut Avenue, NW<br>Building 39 Suite 200C<br>Washington, DC 20008 | University of the District of Columbia<br>Office of Contracting & Procurement<br>4200 Connecticut Avenue, NW<br>Building 39 Suite 200C<br>Washington, DC 20008 |

| 8. Name and Address of Contractor (No. Street, city, country, state and ZIP Code) | (X) | 9A. Amendment of Solicitation No. |
|---|---|---|
| | | GF-2023-B-0028 |
| | | 9B. Dated (See Item 11)<br>July 3, 2023 |
| | | 10A. Modification of Contract/Order No. |
| | | 10B. Dated (See Item 13) |
| Code Facility | | |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

X The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of bids [ ] is extended. [x] is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copy of the amendment: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or fax which includes a reference to the solicitation and amendment number. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or fax, provided each letter or telegram makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting and Appropriation Data (If Required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14

| | |
|---|---|
| | A. This change order is issued pursuant to: (Specify Authority)<br>The changes set forth in Item 14 are made in the contract/order no. in item 10A. |
| | B. The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation date, etc.) set forth in item 14, pursuant to the authority of 27 DCMR, Chapter 36, Section 3601.2. |
| | C. This supplemental agreement is entered into pursuant to authority of: |
| | D. Other (Specify type of modification and authority) |

**E. IMPORTANT**: Contractor [ ] is not, [X] is required to sign this document and return 1 copy to the issuing office.

14. Description of amendment/modification (Organized by UCF Section headings, including solicitation/contract subject matter where feasible.)

Invitation for Bids No. GF-2023-B-0028, STAR Biomedical Research Labs is amended as follows:

1. Questions & Answers (Attachment A)

**Submission of bids should be submitted via email to Michiko Gadson at mgadson@udc.edu.**

**ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED**

Except as provided herein, all terms and conditions of the document referenced in Item (9A or 10A) remain unchanged and in full force and effect

| 15A. Name and Title of Signer (Type or print) | | 16A. Name of Contracting Officer<br>Eddie Whitaker | |
|---|---|---|---|
| 15B. Name of Contractor<br>(Signature of person authorized to sign) | 15C. Date Signed | 16B. District of Columbia<br>*Eddie Whitaker*<br>(Signature of Contracting Officer) | 16C. Date Signed<br>7/28/2023 |

# Attachment A
# Questions & Answers

UDC Solicitation Number: GF-2023-B-0028
Project Name: STAR Biomedical Research Lab Supplemental Information for Bidders

1. Bidder Questions

2. Hazmat Report

3. Alertus Panic Button Basis of Design Specs

4. Security & Access Control
   a. Spec. Section 281300
   b. UDC Police Department Security Technology Matrix
   c. Salto SVN

5. Revised Bid Costs Breakout – Allowance for fabrication and installation of yet-to-be designed signage package.

6. Missing Door Hardware Specification Section 087113

**Questions & Answers**
**GF-2023-R-0028, STAR Biomedical Research Lab**

| No. | Questions | Answers |
|---|---|---|
| 1 | Certain drawings have “DRAFT” indicated across. Are updated drawings coming forth? | The Bid Set is final, all drawings included are final drawings. |
| 2 | The FF&E basis of design – Global Engineering Group are a manufacturer. Can we please get the name and number for the company / representative who was involved with the design process with the A/E | Global provided consultation for the design/furniture selections.<br>Jorn Severtson (Pronounced "Yorn")Territory Manager, A+D Development - Metro Washington, DC<br>703-909-7423 jsevertson@globalfurnituregroup.com Global and the A/E also consulted with:<br>Shauna Stallworth<br>LUHF Branded Environments<br>202.748.6125 m<br>202.484.1661 fx<br>shauna@luhfbranded.com |
| 3 | Provide us a copy of the HAZMAT report | See attachment. |
| 4 | Provide us a window schedule | The glazing systems information is provided on Interior Elevations A410. |
| 5 | Who are the existing building control and fire alarm systems for these buildings? | Johnson Controls and Simplex. |
| 6 | Do we need to provide dust barriers / pedestrian protections on the shared and/or adjacent hallways? | Yes. |
| 7 | Can we use the existing elevators? | The freight elevator in Bldg. 42 (closest to the loading dock and parking lot) will need to be protected and can be utilized for passengers and materials. Materials deliveries must occur on off hours, before 8 a.m. or after 5 p.m. or on weekends. The passenger elevator in the middle of Buldings 32/42 can be used to transport people and tools during all hours. |
| 8 | Specification section 087100 Door Hardware refers to Low Energy Operator ED100 BY SECTION 08 71 13. Please provide section 087113. | Please see attachment for Section 087113. |
| 9 | The drawings are not stamped by DCRA. Who’s responsible getting the stamped drawing and obtaining/paying the building permit? | Bid documents are based on IFC set, which is the product of the permit Set, a copy of approved set will be provided to the awarded contractor. |
| 10 | Please confirm FF&E is part of the scope of work. | Yes. |
| 11 | The FF&E Base of Design is specified as Global Furniture Group, Kimball Furniture, and Miller Knoll. Are we allow to use equivalent products from KI Furniture and/or other manufacturers? | Yes. |
| 12 | Can we use pro-press fittings for all piping? | Yes. |

| | | |
|---|---|---|
| 13 | Are there any hazmat materials to be removed? If so, please provide the hazmat report. | Report attached. |
| 14 | Drawing P101 indicates the discharge pipe from the sump pump is TBD. What distance we assume for the bidding purpose? | 100'. |
| 15 | Is this a LEED certified project? | Follow construction documents. |
| 16 | Who is the BMS controls company for both buildings? | Johnson Controls. |
| 17 | Can we use pro-press fittings for all piping? | Yes |
| 18 | Is this project a tax-exempt? | The University is tax exempt. |
| 19 | Drawing A420 indicates IW interior windows with GL1 or GL2 ¼" tempered glasses. Are these aluminum or HM frames with GL1 or GL2 glasses? Is there a specification section for the interior windows? | Doors/side lites are per door schedule. Aluminum Storefront is as shown on drawings. |
| 20 | Elevation 2/A101 shows exterior curtain wall (CW). Are these exterior openings curtain wall systems or storefront system as specified in spec section 084113 - Aluminum-Framed Entrance and Storefronts? | Storefront systems. |
| 21 | What access control system is existing? | See Security Spec. Also note the spec. requirement for UDC's current security systems integrator and Campus Police to review, approve and coordinate work on the system |
| 22 | Do we need to connect to existing access control, or provide standalone? | Connect to existing |
| 23 | Salto wireless locks exist, will some of the new doors have Salto wireless locks as well, or will all doors be by hard-wired standard access control? | Refer to Door Spec. in Drawings and Security/Access Standards attachment. |
| 24 | Are any access control credentials required to be added during this project? | UDC's Public Safety/Police will add users via existing badge system. |
| 25 | Will it be specified that all locks used are motorized latch retraction or electrified trim (all low-amp power draw)? | Refer to specs and Door Hardware Schedule. |
| 26 | Will any doors be locked by means of mag locks? | No. |
| 27 | Break Room (43A11) – Plan North has a CR on the inside for egress, is this correct? Is that to restrict exit from the room? Does it require alarms, delayed egress, or any other features? | No egress through break room. Yes access control is needed. No alarm is needed. Not an egress door, no delayed egress. These are facility restricted access doors only. |
| 28 | Open Lab (43A03) – Plan North has a CR on the inside for egress, is this correct? Is that to restrict exit from the room? Does it require alarms, delayed egress, or any other features? | No egress through break room, Yes access control is needed. No alarm is needed. Not an egress door, no delayed egress. These are facility restricted access doors only. |
| 29 | Will network electronics be provided and by others (Switches, routers, Wireless Access Points, Phones, etc.) | This is in project scope to be provided by GCs. However, phones are not part of this project scope. See IT Connectivity/Accessories Spec for switches & configuration |

| | | |
|---|---|---|
| 30 | Will the new network infrastructure (Tele-Data) be connected to an existing functional IDF/MDF or will a new IDF be established? This is highly applicable to Building 43 and 32/42 | There is an existing IDF room in 32 C Level, right next to the existing lab space. Building 43 has a network rack/fiber and infrastructure on the B mezzanine AHU space (Drawing TA 103/Note 2, and TA 501/Note 2). |
| 31 | If a new IDF is to be established, should we include furnish and install of 12-strand fiber interconnect? | No new IDF |
| 32 | If a new IDF is to be established in either building, should we provide 2-post network frames, or are network cabinets required? | No new IDF |
| 33 | What does “DR” represent on the drawings? | Did not find this reference. |

# Pre-Renovation Hazardous Materials Survey Report

# Pre-Renovation Hazardous Materials Survey Report

## University of the District of Columbia
## CBRE-NIH Buildings 32/42/43

**4200 Connecticut Avenue, NW**
**Washington, DC 20008**

**Shamaly Alexander**
**R. McGhee & Associates**
**2031 Florida Avenue, NW, 3rd floor**
**Washington, DC 20009**

February, 2022

Prepared by:

Arc Environmental

1311 Haubert Street
Baltimore, MD 21230
**p** 410.659.9971

## EXECUTIVE SUMMARY

Arc Environmental performed a pre-renovation hazardous materials survey of various rooms designated for renovation by supplied drawings (See Appendix D) at the University of the District of Columbia, Buildings 32/42/43 located at 4200 Connecticut Avenue, NW, in Washington, DC (Site) as part of a due diligence study to evaluate major building materials/components that may be impacted during proposed renovation activities. The survey included the assessment and sampling of suspect asbestos-containing materials (ACMs), in-situ testing of lead-based paint (LBP), and inventorying of universal wastes associated with the building located on Site. The survey was performed on January 31, 2022.

During the survey, a total of 103 bulk samples were collected from 38 suspect homogenous areas identified throughout the Site. Based on the findings of the asbestos survey, two (2) of the sampled homogeneous materials were confirmed by laboratory analysis to be asbestos-containing materials. Identified ACMs include 12”x12” brown floor tile and associated mastic from Building 43, A Level. Additionally, two (2) homogenous materials were assumed to be positive for asbestos, these materials include; fire doors and kilns. Section 2.0 provides additional details regarding the findings of the asbestos survey.

The lead-based paint screening was conducted on Site using a portable X-ray Fluorescence (XRF) device. On-site testing revealed the presence of lead-based paint or coatings according to the District of Columbia’s definition of lead-based paint on various building components. Section 3.0 provides detail regarding the LBP survey.

A visual inspection was performed to identify and quantify universal and regulated wastes associated with the Site. Potentially regulated and/or universal wastes inventoried include potentially mercury-containing fluorescent tubes, potentially polychlorinated biphenyl (PCB)-containing ballasts, exit and emergency lighting potentially containing batteries, hydraulic door closures suspected of containing oils/lubricants, and water fountains containing refrigerant. Section 4.0 provides details regarding the universal and regulated waste survey.

Prepared by:

Blaine Owens

Project Manager- Industrial Hygiene Services



1311 Haubert Street | Baltimore, MD 21230 | p 410.659.9971 | f 410.962.1065

## Table of Contents



ATTACHMENTS

## 1.0 Introduction

Arc Environmental performed a pre-renovation hazardous materials survey at various rooms within Buildings 32/42/43 of the University of the District of Columbia located in Washington, DC (Site) as part of a due diligence study to evaluate major building materials/components that may be impacted during proposed renovations. The survey included the assessment and sampling of suspect asbestos-containing materials (ACMs), in-situ testing of lead-based paint (LBP), and inventorying of universal wastes associated with the building located on Site.

The scope of work's inspection areas are delineated on the enclosed Building Diagrams in Appendix D. Destructive sampling efforts to evaluate hidden wall cavities and mechanical systems were not utilized as part of this limited survey as portions of Building 32/42 are still actively used. The findings of the survey are presented in this report. The survey was conducted by Arc Environmental on January 31, 2022.

## 2.0 Asbestos-containing Materials Survey

### *2.1 Methodology*

The asbestos survey included the identification, assessment, and sampling of accessible, suspect asbestos-containing materials. The survey was performed by a U.S. Environmental Protection Agency (USEPA)-trained asbestos inspector, Mr. Blaine Owens. During the survey, a total of 103 bulk samples were collected from 38 suspect homogenous areas identified throughout the accessible portions of the Site. These materials included: spray-on fire proofing, flooring, mastics, cove base, drywall, joint compound, ceiling tiles, caulks, glazings, thermal system mastics, and expansion joint caulk.

Collected bulk samples of suspect ACMs were submitted, along with the corresponding chain-of-custody forms, to EMSL Analytical, Inc. (EMSL) for analysis. EMSL is accredited for asbestos analysis in bulk materials through the National Voluntary Laboratory Accreditation Program (NVLAP). The bulk samples were analyzed using polarized light microscopy (PLM/Dispersion Staining following the EPA method 600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials). Based on the United States Environmental Protection Agency's (USEPA's) definition, a material which contains greater than one percent (1%) asbestos, as determined using the methods specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), is considered an ACM and must be handled according to OSHA, USEPA, and Washington DC Department of Energy & Environment (DOEE) regulations.

The findings and quantities of verified and assumed ACMs are summarized in Table 1, *Identified Asbestos-containing Materials*. A copy of the chain of custody forms with a list of all of the materials sampled and Laboratory Analytical Results are included in Appendix A.

### *2.2 Findings and Recommendations*

Table 1 below lists the confirmed and assumed ACMs identified at the Site. A complete list of the building materials sampled during this survey is presented in Appendix A. Additionally, it is recommended that if additional suspect materials not identified in this report are

uncovered/exposed during demolition or construction activities, the materials should be assumed to contain asbestos or sampled and analyzed for asbestos content to determine if they are ACMs.

**Table 1: Identified Asbestos-containing Materials**

| Sample Number | Description | Location | Est. Total Quantity |
|---|---|---|---|
| 24A, B | 12”x12” brown floor tile and associated black mastic | Building 43, Level A (main and rear hall; Rm. 43-A02) | 1,100 SF |
| Assumed | Electric Pottery Kiln | Building 43, Level A Entry | 2 Units |
| Assumed | Fire doors | Throughout | 18 EA |

The floor tiles are Category I non-friable materials. The EPA regulates Category I non-friable materials (resilient floor coverings, asphalt roof product, gaskets, and packings) when these materials have been rendered friable. Category I non-friable materials may become friable if subjected to sanding, grinding, cutting, or abrading. The Category I non-friable ACMs should be removed prior to disturbance if these materials will be impacted by planned activities at the Site.

The mastic associated with floor tiles, the electric kilns, and fire doors are considered a Category II non-friable material. Category II non-friable materials are regulated if they have a high probability of becoming or have become crumbled, pulverized, or reduced to powder by the forces expected to impact the materials during the course of renovation and/or demolition activities. These materials must be removed by a licensed asbestos abatement contractor prior to disturbance

## 3.0 Lead-based Paint Survey

### *3.1 Methodology*

A lead screening survey was conducted using an X-ray Fluorescence (XRF) Spectrum Analyzer on painted building surfaces and/or components. Surfaces that are intact or deteriorated condition (as defined by the U.S. Department of Housing and Urban Development Guidelines) do not pose an immediate health risk, regardless of the lead content. Leaded paint in poor condition is a priority lead-hazard and should be promptly addressed using approved Lead Safe Work Practices. Stephanie Soper, a DOEE certified Lead Paint Risk Assessor conducted the screening.

The screening included field readings in addition to periodic calibration checks to ensure that the instrument is within acceptable calibration parameters. Lead-based paint, when tested via XRF, is defined by the U.S. Department of Housing and Urban Development (HUD) and DOEE as paint having lead concentrations equal to or in excess of 0.7 milligrams per square centimeter ($mg/cm^2$). The results of the lead-based paint survey are summarized in the *XRF Lead-based Paint Inspection Data Sheets* included in Appendix B.

### *3.2 Findings and Recommendations*

Six (6) of the 218 field screening assays yielded lead concentration above the DOEE threshold of ($\geq$ 1.0 mg/cm$^2$) for lead-based paint. These positive building components include: Steel closet door in Building 32/42 (Room 32-B01) and steel support beams in the Building 43 work areas.

The lead screening does not include testing of every painted surface within the project area; rather its intention is to characterize groups of similar components and coatings. If similar components with the same substrate and paint to those identified below are encountered during renovation activities, they are to be treated as containing lead-based paint.

The OSHA Lead in Construction Regulation, 29 CFR 1926.62, applies to all construction work where an employee may be occupationally exposed to lead. This standard does not indicate a specific percentage or mass per area (mg/cm$^2$) of lead-in-paint that is permissible during construction/demolition activities. There is no acceptable concentration for lead under the OSHA lead standard that eliminates the requirement for contractors to comply with this regulation. Due to the presence of lead-containing paint at the Site, OSHA worker protection requirements for lead must be followed during construction activities.

A lead Toxicity Characteristic Leaching Procedure (TCLP) test should be conducted for the demolition debris generated on Site. A representative waste stream sample should be collected to characterize the demolition debris, in accordance with the Resource Conservation and Recovery Act (RCRA), to determine disposal options. The hazardous waste criteria for lead waste is established under RCRA, Subtitle C, as 5.0 milligrams per liter (mg/L) measured with the TCLP as listed in CFR 40 Part 261. The lead-containing and lead-based paint debris generated during demolition should be handled in accordance with all applicable Federal and State regulations.

## 4.0 Universal & Regulated Wastes

Arc Environmental conducted a visual inspection for Universal Wastes (UWs) and other potentially regulated and hazardous wastes within the project area. As per 40 Code of Federal Regulations (CFR) 261 Subpart C, UWs include any of the following six wastes that have at least one hazardous characteristic: batteries, pesticides, thermostats, cathode ray tubes, mercury-containing devices, and mercury-containing lamps (e.g., fluorescent tubes and high intensity discharge lamps). These wastes require proper handling and disposal methods when no longer in use or prior to completing any planned renovation/demolition activities. All identified Universal and potentially regulated wastes must be handled, transported, and disposed of in accordance with applicable regulations prior to the renovation of the Site.

### *4.1 Mercury*

Arc Environmental observed fluorescent tubes within the scope of work. An estimated total of four hundred and thirty (430) tubes of various sizes were identified. These fluorescent tubes are assumed to contain mercury vapors. Mercury-containing fluorescent tubes will require proper removal and disposal in accordance with EPA regulations listed in 40 CFR Part 273.

### *4.2 Polychlorinated Biphenyls*

Arc Environmental conducted a visual inspection for polychlorinated biphenyl (PCB)-containing light ballasts within fluorescent fixtures along with other potential PCB-containing equipment and material at the Site. If light fixtures containing ballasts were observed in the building, Arc personnel accessed the ballasts and recorded information from the manufacturer's label. All capacitors and fluorescent light ballasts that are not labeled as "non-PCB" were assumed to contain PCBs. Arc Environmental observed an estimated two hundred and fifteen (215) ballasts from the Site. Ballasts have the potential to contain PCBs. PCB ballasts will require proper removal and disposal in accordance with EPA regulations listed in 40 CFR Part 273.

Although most of the ballasts do not contain PCBs, they likely contain other regulated liquids. Arc Environmental recommends collecting and separating all fluorescent light ballasts by type during the demolition process. The ballasts should then be characterized for disposal in accordance with federal, state and local regulations.

### *4.3 Other Potentially Regulated and Hazardous Wastes*

In addition to the above referenced UWs, Arc Environmental observed several components and/or equipment throughout the building which may potentially contain regulated wastes. Twenty (20) exit signs, ten (10) emergency lights, twenty-eight (28) door closures, ten (10) exit sign/emergency light combos, and two (2) water fountains were noted. The exit signs and emergency lights are assumed to have rechargeable batteries, hydraulic door closures are assumed to contain hydraulic oil, and the water fountain cooling system is suspected of containing Freon.

If other wastes are encountered during any renovation, or demolition activities, they will need to be removed and disposed of prior to any demolition activities due to the potential for releases incidences impacted the environmental. These other wastes will require proper handing, removal and disposal methods much like the UWs prior to any planned alterations or demolition at the Site.

# Appendix A

# Asbestos Bulk Sampling Summary and Results

| Material Description | Building Number | Sample Numbers | Results |
|---|---|---|---|
| Grey laminate flooring and associated mastic | 32/42 | 1A, B | NAD |
| 2'x 2'ceiling tile | 32/42 | 2A, B | NAD |
| Grey 3" cove base and associated mastic | 32/42 | 3A, B | NAD |
| Drywall- CO2 | 32/42 | 4A, B | NAD |
| Joint Compound- CO2 | 32/42 | 5A, B | NAD |
| White laminate flooring and associated mastic | 32/42 | 6A, B | NAD |
| Joint Compound- C01A | 32/42 | 7A, B | NAD |
| Off white 12"x12" floor tile and associated mastic- B01-02 | 32/42 | 8A, B | NAD |
| 2'x4' ceiling tile with ¼ " fissures | 32/42 | 9A, B | NAD |
| 2'x4' ceiling tile with 1" fissures | 32/42 | 10A, B | NAD |
| Joint Compound- B10-02 | 32/42 | 11A, B | NAD |
| Interior window caulking | 32/42 | 12A, B | NAD |
| Spray-on Fireproofing | 32/42 | 13A-E | NAD |
| Brown 3" cove base and associated mastic | 32/42 | 14A, B | NAD |
| Carpet glue | 32/42 | 15A, B | NAD |
| White with grey streaks 12"x12" floor tile and associated mastic | 32/42 | 16A, B | NAD |
| Interior window glazing | 32/42 | 17A, B | NAD |
| Brown 5" cove base and associated mastic | 32/42 | 18A, B | NAD |
| Joint Compound- B01 classroom | 32/42 | 19A, B | NAD |
| Drywall- B01 classroom | 32/42 | 20A, B | NAD |
| Carpet glue | 32/42 | 21A, B | NAD |
| Bottom layer of floor tile and associated mastic- B01 classrooms | 32/42 | 22A, B | NAD |
| Metal duct seam mastic | 32/42 | 23A, B | NAD |
| **Brown 12"x12" floor tile and associated mastic** | **43** | **24A, B** | **Tile: 4-6% chrysotile Mastic: 4-7% chrysotile** |
| Black 3" cove base and associated mastic | 43 | 25A, B | NAD |
| Brown 3" cove base and associated mastic | 43 | 26A, B | NAD |
| Brown 5" cove base and associated mastic | 43 | 27A, B | NAD |
| Drywall | 43 | 28A, B | NAD |
| Joint Compound | 43 | 29A, B | NAD |

| Material Description | Building Number | Sample Numbers | Results |
|---|---|---|---|
| Interior window glazing | 43 | 30A, B | NAD |
| Interior expansion joint caulk | 43 | 31A, B | NAD |
| Duct mastic | 43 | 32A, B | NAD |
| 2'x2' ceiling tile (solid) – bathrooms | 43 | 33A, B | NAD |
| Duct caulk | 43 | 34A, B | NAD |
| Thermal system insulation mastic | 43 | 35A, B | NAD |
| Duct insulation mastic | 43 | 36A, B | NAD |
| Exterior door caulking | 43 | 37A, B | NAD |
| Exterior expansion joint caulk | 43 | 38A, B | NAD |

*Samples in bold are considered to contain asbestos.

**NAD-No Asbestos Detected

# EMSL Analytical, Inc.

**10752 Baltimore Avenue Beltsville, MD 20705**

Tel/Fax: (301) 937-5700 / (301) 937-5701

http://www.EMSL.com / beltsvillelab@emsl.com


| | |
|---|---|
| **EMSL Order:** | 192200654 |
| **Customer ID:** | ARCE78 |
| **Customer PO:** | |
| **Project ID:** | |

| | | | |
|---|---|---|---|
| **Attention:** | Blaine Owens | **Phone:** | (410) 365-6457 |
| | Arc Environmental | **Fax:** | (410) 962-1065 |
| | 1311 Haubert Street | **Received Date:** | 02/02/2022 12:03 PM |
| | Baltimore, MD 21230 | **Analysis Date:** | 02/04/2022 - 02/07/2022 |
| | | **Collected Date:** | 01/31/2022 |
| **Project:** | NIH 32/42/43 | | |

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 1A-Flooring<br>*192200654-0001* | 32/42 GRAY LAMINATE FLOORING | Gray<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 1A-Mastic<br>*192200654-0001A* | 32/42 GRAY LAMINATE FLOORING | Gray/Tan<br>Non-Fibrous<br>Homogeneous | 2% Synthetic | 98% Non-fibrous (Other) | None Detected |
| 1B-Flooring<br>*192200654-0002* | 32/42 GRAY LAMINATE FLOORING | Gray<br>Non-Fibrous<br>Homogeneous | | 50% Ca Carbonate<br>50% Non-fibrous (Other) | None Detected |
| 1B-Mastic<br>*192200654-0002A* | 32/42 GRAY LAMINATE FLOORING | Gray/Tan<br>Non-Fibrous<br>Homogeneous | 1% Synthetic | 99% Non-fibrous (Other) | None Detected |
| 2A<br>*192200654-0003* | 32/42 2'X2' CEILING TILE | Gray<br>Fibrous<br>Homogeneous | 30% Cellulose<br>30% Min. Wool | 30% Perlite<br>10% Non-fibrous (Other) | None Detected |
| 2B<br>*192200654-0004* | 32/42 2'X2' CEILING TILE | Gray<br>Fibrous<br>Homogeneous | 30% Cellulose<br>30% Min. Wool | 30% Perlite<br>10% Non-fibrous (Other) | None Detected |
| 3A-Cove Base<br>*192200654-0005* | 32/42 GRAY 3" COVE BASE | Gray<br>Non-Fibrous<br>Homogeneous | | 35% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 3A-Mastic<br>*192200654-0005A* | 32/42 GRAY 3" COVE BASE | Tan<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 3B-Cove Base<br>*192200654-0006* | 32/42 GRAY 3" COVE BASE | Gray<br>Non-Fibrous<br>Homogeneous | | 35% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 3B-Mastic<br>*192200654-0006A* | 32/42 GRAY 3" COVE BASE | Tan<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 4A<br>*192200654-0007* | 32/42 DRYWALL-CO2 | Brown/Gray<br>Fibrous<br>Heterogeneous | 25% Cellulose | 40% Gypsum<br>35% Non-fibrous (Other) | None Detected |
| 4B<br>*192200654-0008* | 32/42 DRYWALL-CO2 | Brown/Gray<br>Fibrous<br>Heterogeneous | 55% Cellulose | 5% Quartz<br>40% Gypsum | None Detected |
| 5A<br>*192200654-0009* | 32/42 2'X4' JOINT COMPOUND-CO2 | White<br>Non-Fibrous<br>Homogeneous | | 15% Mica<br>85% Non-fibrous (Other) | None Detected |
| 5B<br>*192200654-0010* | 32/42 2'X4' JOINT COMPOUND-CO2 | Gray/White<br>Non-Fibrous<br>Heterogeneous | | 25% Ca Carbonate<br>15% Mica<br>30% Perlite<br>30% Non-fibrous (Other) | None Detected |
| 6A-Floor Tile<br>*192200654-0011* | 32/42 WHITE LAMINATE FLOORING | Gray/White<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 6A-Mastic<br>*192200654-0011A* | 32/42 WHITE LAMINATE FLOORING | Gray/Yellow<br>Fibrous<br>Heterogeneous | 12% Synthetic | 30% Ca Carbonate<br>58% Non-fibrous (Other) | None Detected |

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**EMSL Order:** 192200654
**Customer ID:** ARCE78
**Customer PO:**
**Project ID:**

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 6B-Floor Tile<br>*192200654-0012* | 32/42 WHITE LAMINATE FLOORING | White<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 6B-Mastic<br>*192200654-0012A* | 32/42 WHITE LAMINATE FLOORING | Yellow<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 7A<br>*192200654-0013* | 32/42 JOINT COMPOUND-01A | Gray/White<br>Non-Fibrous<br>Heterogeneous | | 25% Ca Carbonate<br>20% Mica<br>25% Perlite<br>30% Non-fibrous (Other) | None Detected |
| 7B<br>*192200654-0014* | 32/42 JOINT COMPOUND-01A | Gray/White<br>Non-Fibrous<br>Heterogeneous | | 25% Ca Carbonate<br>20% Mica<br>25% Perlite<br>30% Non-fibrous (Other) | None Detected |
| 8A-Floor Tile<br>*192200654-0015* | 32/42 12"X12"FLOOR TILE-OFF WHITE | White<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 8A-Mastic<br>*192200654-0015A* | 32/42 12"X12"FLOOR TILE-OFF WHITE | Yellow<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 8B-Floor Tile<br>*192200654-0016* | 32/42 12"X12"FLOOR TILE-OFF WHITE | Tan/White/Beige<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 8B-Mastic<br>*192200654-0016A* | 32/42 12"X12"FLOOR TILE-OFF WHITE | Brown/Black/Yellow<br>Fibrous<br>Heterogeneous | 5% Cellulose<br>10% Synthetic | 15% Ca Carbonate<br>70% Non-fibrous (Other) | None Detected |
| 9A<br>*192200654-0017* | 32/42 2'X4' CEILING TILE 1/4"FISSURES | Gray<br>Fibrous<br>Homogeneous | 30% Cellulose<br>30% Min. Wool | 30% Perlite<br>10% Non-fibrous (Other) | None Detected |
| 9B<br>*192200654-0018* | 32/42 2'X4' CEILING TILE 1/4"FISSURES | Gray/White<br>Fibrous<br>Homogeneous | 30% Cellulose<br>30% Min. Wool | 30% Perlite<br>10% Non-fibrous (Other) | None Detected |
| 10A<br>*192200654-0019* | 32/42 2'X4' CEILING TILE 1" FISSURES | Brown/Gray/White<br>Fibrous<br>Heterogeneous | 35% Cellulose<br>20% Min. Wool | 5% Mica<br>30% Perlite<br>10% Non-fibrous (Other) | None Detected |
| 10B<br>*192200654-0020* | 32/42 2'X4' CEILING TILE 1" FISSURES | Brown/Gray/White<br>Fibrous<br>Heterogeneous | 35% Cellulose<br>15% Min. Wool | 5% Mica<br>35% Perlite<br>10% Non-fibrous (Other) | None Detected |
| 11A<br>*192200654-0021* | 32/42 JOINT COMPOUND-B10-2 | Gray/White<br>Non-Fibrous<br>Heterogeneous | | 25% Ca Carbonate<br>25% Mica<br>20% Perlite<br>30% Non-fibrous (Other) | None Detected |
| 11B<br>*192200654-0022* | 32/42 JOINT COMPOUND-B10-2 | White<br>Non-Fibrous<br>Homogeneous | | 15% Mica<br>85% Non-fibrous (Other) | None Detected |
| 12A<br>*192200654-0023* | 32/42 INTERIOR WINDOW CAULK | White/Black<br>Fibrous<br>Heterogeneous | 30% Synthetic | 70% Non-fibrous (Other) | None Detected |
| 12B<br>*192200654-0024* | 32/42 INTERIOR WINDOW CAULK | White/Black<br>Fibrous<br>Heterogeneous | 20% Synthetic | 80% Non-fibrous (Other) | None Detected |
| 13A<br>*192200654-0025* | 32/42 SPRAY ON FIREPROOFING | Gray/White<br>Fibrous<br>Homogeneous | 80% Min. Wool | 20% Non-fibrous (Other) | None Detected |
| 13B<br>*192200654-0026* | 32/42 SPRAY ON FIREPROOFING | Gray/White<br>Fibrous<br>Heterogeneous | 75% Min. Wool | 25% Ca Carbonate | None Detected |

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 13C<br>*192200654-0027* | 32/42 SPRAY ON FIREPROOFING | Gray/White<br>Fibrous<br>Heterogeneous | 80% Min. Wool | 20% Ca Carbonate | None Detected |
| 13D<br>*192200654-0028* | 32/42 SPRAY ON FIREPROOFING | Gray/Tan<br>Fibrous<br>Homogeneous | 75% Min. Wool | 25% Non-fibrous (Other) | None Detected |
| 13E<br>*192200654-0029* | 32/42 SPRAY ON FIREPROOFING | Gray/White<br>Fibrous<br>Heterogeneous | 80% Min. Wool | 20% Ca Carbonate | None Detected |
| 14A-Cove Base<br>*192200654-0030* | 32/42 BROWN 3" COVE BASE | Brown/Gray/Black<br>Non-Fibrous<br>Heterogeneous | | 40% Ca Carbonate<br>60% Non-fibrous (Other) | None Detected |
| 14A-Mastic<br>*192200654-0030A* | 32/42 BROWN 3" COVE BASE | Brown/Tan/White<br>Fibrous<br>Heterogeneous | 20% Cellulose | 25% Ca Carbonate<br>20% Mica<br>35% Non-fibrous (Other) | None Detected |
| 14B-Cove Base<br>*192200654-0031* | 32/42 BROWN 3" COVE BASE | Brown/Gray/Black<br>Non-Fibrous<br>Heterogeneous | | 40% Ca Carbonate<br>60% Non-fibrous (Other) | None Detected |
| 14B-Mastic<br>*192200654-0031A* | 32/42 BROWN 3" COVE BASE | Brown/Tan/White<br>Fibrous<br>Heterogeneous | 10% Cellulose | 30% Ca Carbonate<br>20% Mica<br>40% Non-fibrous (Other) | None Detected |
| 15A<br>*192200654-0032* | 32/42 CARPET GLUE | Yellow<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 15B<br>*192200654-0033* | 32/42 CARPET GLUE | Gray/Yellow<br>Fibrous<br>Heterogeneous | 10% Synthetic | 15% Ca Carbonate<br>75% Non-fibrous (Other) | None Detected |
| 16A-Floor Tile<br>*192200654-0034* | 32/42 12"X12" FLOOR TILE-WHITE | Gray/White<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 16A-Mastic<br>*192200654-0034A* | 32/42 12"X12" FLOOR TILE-WHITE | Brown/Gray/Yellow<br>Fibrous<br>Heterogeneous | 20% Synthetic | 15% Quartz<br>15% Ca Carbonate<br>50% Non-fibrous (Other) | None Detected |
| 16B-Floor Tile<br>*192200654-0035* | 32/42 12"X12" FLOOR TILE-WHITE | White<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 16B-Mastic<br>*192200654-0035A* | 32/42 12"X12" FLOOR TILE-WHITE | Yellow<br>Non-Fibrous<br>Homogeneous | 1% Cellulose | 15% Ca Carbonate<br>84% Non-fibrous (Other) | None Detected |
| 17A<br>*192200654-0036*<br>*Foam.* | 32/42 WINDOW GLAZING | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 17B<br>*192200654-0037*<br>*Foam.* | 32/42 WINDOW GLAZING | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 18A-Cove Base<br>*192200654-0038* | 32/42 BROWN 5" COVE BASE | Brown/Black<br>Non-Fibrous<br>Homogeneous | | 20% Ca Carbonate<br>80% Non-fibrous (Other) | None Detected |
| 18A-Mastic<br>*192200654-0038A* | 32/42 BROWN 5" COVE BASE | White/Yellow<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>3% Mica<br>82% Non-fibrous (Other) | None Detected |
| 18B-Cove Base<br>*192200654-0039* | 32/42 BROWN 5" COVE BASE | Gray/Black<br>Non-Fibrous<br>Heterogeneous | | 35% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 18B-Mastic<br>*192200654-0039A* | 32/42 BROWN 5" COVE BASE | White/Yellow<br>Fibrous<br>Heterogeneous | 5% Synthetic | 30% Ca Carbonate<br>25% Mica<br>40% Non-fibrous (Other) | None Detected |
| 19A<br>*192200654-0040* | 32/42 JOINT COMPOUND CLASS ROOMS | Gray/White<br>Non-Fibrous<br>Heterogeneous | | 35% Ca Carbonate<br>35% Mica<br>30% Non-fibrous (Other) | None Detected |
| 19B<br>*192200654-0041* | 32/42 JOINT COMPOUND CLASS ROOMS | White<br>Non-Fibrous<br>Homogeneous | | 15% Mica<br>5% Perlite<br>80% Non-fibrous (Other) | None Detected |
| 20A<br>*192200654-0042* | 32/42 DRYWALL CLASS ROOMS | Brown/White<br>Fibrous<br>Heterogeneous | 30% Cellulose<br>10% Glass | 5% Quartz<br>45% Gypsum<br>10% Non-fibrous (Other) | None Detected |
| 20B<br>*192200654-0043* | 32/42 DRYWALL CLASS ROOMS | Brown/White<br>Fibrous<br>Heterogeneous | 35% Cellulose<br>7% Glass | 5% Quartz<br>43% Gypsum<br>10% Non-fibrous (Other) | None Detected |
| 21A<br>*192200654-0044* | 32/42 CARPET GLUE | Yellow<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 21B<br>*192200654-0045* | 32/42 CARPET GLUE | Gray/Tan/Yellow<br>Fibrous<br>Heterogeneous | 30% Synthetic | 20% Ca Carbonate<br>50% Non-fibrous (Other) | None Detected |
| 22A-Floor Tile<br>*192200654-0046* | 32/42 12"X12" FLOOR TILE-OFF WHITE | Gray/White/Beige<br>Non-Fibrous<br>Homogeneous | | 60% Ca Carbonate<br>40% Non-fibrous (Other) | None Detected |
| 22A-Mastic<br>*192200654-0046A* | 32/42 12"X12" FLOOR TILE-OFF WHITE | Gray/Yellow<br>Fibrous<br>Heterogeneous | 20% Synthetic | 80% Non-fibrous (Other) | None Detected |
| 22B-Floor Tile<br>*192200654-0047* | 32/42 12"X12" FLOOR TILE-OFF WHITE | White<br>Non-Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 22B-Mastic<br>*192200654-0047A* | 32/42 12"X12" FLOOR TILE-OFF WHITE | Yellow<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 23A<br>*192200654-0048* | 32/42 DUCT SEAM MASTIC | Gray/White<br>Non-Fibrous<br>Homogeneous | | 35% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 23B<br>*192200654-0049* | 32/42 DUCT SEAM MASTIC | Gray/White<br>Non-Fibrous<br>Homogeneous | | 35% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 24A-Floor Tile<br>*192200654-0050* | 32/43 12"X12" FLOOR TILE-BROWN | Brown<br>Fibrous<br>Homogeneous | | 94% Non-fibrous (Other) | 6% Chrysotile |
| 24A-Mastic<br>*192200654-0050A* | 32/43 12"X12" FLOOR TILE-BROWN | Black<br>Non-Fibrous<br>Homogeneous | | 96% Non-fibrous (Other) | 4% Chrysotile |
| 24B-Floor Tile<br>*192200654-0051* | 32/43 12"X12" FLOOR TILE-BROWN | Brown/Gray<br>Fibrous<br>Homogeneous | | 55% Ca Carbonate<br>41% Non-fibrous (Other) | 4% Chrysotile |
| 24B-Mastic<br>*192200654-0051A* | 32/43 12"X12" FLOOR TILE-BROWN | Brown/Black<br>Fibrous<br>Homogeneous | 5% Cellulose | 88% Non-fibrous (Other) | 7% Chrysotile |
| 25A-Cove Base<br>*192200654-0052* | 32/43 BLACK 3" COVE BASE | Gray/Black<br>Non-Fibrous<br>Heterogeneous | | 50% Ca Carbonate<br>50% Non-fibrous (Other) | None Detected |
| 25A-Mastic<br>*192200654-0052A* | 32/43 BLACK 3" COVE BASE | Brown/Tan/White<br>Fibrous<br>Heterogeneous | 25% Cellulose<br>3% Synthetic | 25% Ca Carbonate<br>47% Non-fibrous (Other) | None Detected |

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 25B-Cove Base<br>*192200654-0053* | 32/43 BLACK 3" COVE BASE | Gray/Black<br>Non-Fibrous<br>Heterogeneous | | 55% Ca Carbonate<br>45% Non-fibrous (Other) | None Detected |
| 25B-Mastic<br>*192200654-0053A* | 32/43 BLACK 3" COVE BASE | Brown/Tan/White<br>Fibrous<br>Heterogeneous | 30% Cellulose | 30% Ca Carbonate<br>40% Non-fibrous (Other) | None Detected |
| 26A-Cove Base<br>*192200654-0054* | 32/43 BROWN 3" COVE BASE | Brown/Gray<br>Non-Fibrous<br>Heterogeneous | | 50% Ca Carbonate<br>50% Non-fibrous (Other) | None Detected |
| 26A-Mastic<br>*192200654-0054A* | 32/43 BROWN 3" COVE BASE | Brown<br>Fibrous<br>Heterogeneous | 2% Cellulose<br>10% Fibrous (Other) | 20% Ca Carbonate<br>68% Non-fibrous (Other) | None Detected |
| 26B-Cove Base<br>*192200654-0055* | 32/43 BROWN 3" COVE BASE | Brown<br>Non-Fibrous<br>Homogeneous | | 40% Ca Carbonate<br>60% Non-fibrous (Other) | None Detected |
| 26B-Mastic<br>*192200654-0055A* | 32/43 BROWN 3" COVE BASE | Tan/White<br>Fibrous<br>Homogeneous | 15% Cellulose | 20% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 27A-Cove Base<br>*192200654-0056* | 32/43 BROWN 5" COVE BASE | Brown<br>Non-Fibrous<br>Homogeneous | | 35% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 27A-Mastic<br>*192200654-0056A* | 32/43 BROWN 5" COVE BASE | White<br>Non-Fibrous<br>Homogeneous | | 15% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 27B-Cove Base<br>*192200654-0057* | 32/43 BROWN 5" COVE BASE | Brown/Gray<br>Non-Fibrous<br>Heterogeneous | | 45% Ca Carbonate<br>55% Non-fibrous (Other) | None Detected |
| 27B-Mastic<br>*192200654-0057A* | 32/43 BROWN 5" COVE BASE | Tan/White<br>Non-Fibrous<br>Heterogeneous | | 30% Ca Carbonate<br>20% Mica<br>50% Non-fibrous (Other) | None Detected |
| 28A<br>*192200654-0058* | 32/43 DRYWALL | Brown/White/Purple<br>Fibrous<br>Heterogeneous | 40% Cellulose<br>7% Glass | 5% Quartz<br>40% Gypsum<br>8% Non-fibrous (Other) | None Detected |
| 28B<br>*192200654-0059* | 32/43 DRYWALL | Brown/Gray<br>Non-Fibrous<br>Homogeneous | 15% Cellulose<br>5% Glass | 70% Gypsum<br>10% Non-fibrous (Other) | None Detected |
| 29A<br>*192200654-0060* | 32/43 JOINT COMPOUND | Tan/White<br>Non-Fibrous<br>Heterogeneous | | 30% Ca Carbonate<br>20% Mica<br>25% Perlite<br>25% Non-fibrous (Other) | None Detected |
| 29B<br>*192200654-0061* | 32/43 JOINT COMPOUND | Tan/White<br>Non-Fibrous<br>Heterogeneous | | 25% Ca Carbonate<br>25% Mica<br>25% Perlite<br>25% Non-fibrous (Other) | None Detected |
| 30A<br>*192200654-0062* | 32/43 WINDOW GLAZING | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 30B<br>*192200654-0063* | 32/43 WINDOW GLAZING | Black<br>Non-Fibrous<br>Homogeneous | 25% Min. Wool | 75% Non-fibrous (Other) | None Detected |
| 31A<br>*192200654-0064* | 32/43 EXPANSION JOINT CAULK | Tan/White<br>Non-Fibrous<br>Homogeneous | 2% Cellulose | 45% Ca Carbonate<br>53% Non-fibrous (Other) | None Detected |
| 31B<br>*192200654-0065* | 32/43 EXPANSION JOINT CAULK | Tan/White<br>Non-Fibrous<br>Homogeneous | | 10% Ca Carbonate<br>90% Non-fibrous (Other) | None Detected |

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 32A<br>*192200654-0066* | 32/43 DUCT MASTIC | Tan/White<br>Non-Fibrous<br>Homogeneous | 12% Fibrous (Other) | 5% Quartz<br>45% Ca Carbonate<br>38% Non-fibrous (Other) | None Detected |
| 32B<br>*192200654-0067* | 32/43 DUCT MASTIC | Tan/White<br>Non-Fibrous<br>Homogeneous | 15% Fibrous (Other) | 3% Quartz<br>35% Ca Carbonate<br>47% Non-fibrous (Other) | None Detected |
| 33A<br>*192200654-0068* | 32/43 2'X2' CEILING TILE-BATHROOM | White/Yellow<br>Non-Fibrous<br>Homogeneous | 65% Glass | 35% Non-fibrous (Other) | None Detected |
| 33B<br>*192200654-0069* | 32/43 2'X2' CEILING TILE-BATHROOM | White/Yellow<br>Non-Fibrous<br>Homogeneous | 60% Glass | 25% Ca Carbonate<br>15% Non-fibrous (Other) | None Detected |
| 34A<br>*192200654-0070* | 32/43 DUCT CAULK | Brown/Gray<br>Non-Fibrous<br>Homogeneous | 2% Cellulose | 30% Ca Carbonate<br>68% Non-fibrous (Other) | None Detected |
| 34B<br>*192200654-0071* | 32/43 DUCT CAULK | Brown/Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 35A<br>*192200654-0072* | 32/43 TSI MASTIC | Gray/Tan<br>Fibrous<br>Homogeneous | 15% Cellulose<br>3% Min. Wool | 20% Mica<br>62% Non-fibrous (Other) | None Detected |
| 35B<br>*192200654-0073* | 32/43 TSI MASTIC | Gray/Tan<br>Fibrous<br>Homogeneous | 15% Cellulose<br>5% Min. Wool | 20% Mica<br>60% Non-fibrous (Other) | None Detected |
| 36A<br>*192200654-0074* | 32/43 DUCT MASTIC | Brown/Silver/Blue<br>Non-Fibrous<br>Homogeneous | 15% Glass | 10% Ca Carbonate<br>75% Non-fibrous (Other) | None Detected |
| 36B<br>*192200654-0075* | 32/43 DUCT MASTIC | Brown/Silver/Blue<br>Non-Fibrous<br>Homogeneous | 15% Cellulose | 10% Ca Carbonate<br>75% Non-fibrous (Other) | None Detected |
| 37A<br>*192200654-0076* | 32/43 EXTERIOR DOOR CAULK | Gray<br>Non-Fibrous<br>Homogeneous | | 30% Ca Carbonate<br>70% Non-fibrous (Other) | None Detected |
| 37B<br>*192200654-0077* | 32/43 EXTERIOR DOOR CAULK | Gray<br>Non-Fibrous<br>Homogeneous | | 20% Ca Carbonate<br>80% Non-fibrous (Other) | None Detected |
| 38A<br>*192200654-0078* | 32/43 EXT. EXPANSION JOINT | Tan<br>Non-Fibrous<br>Homogeneous | 2% Cellulose | 45% Ca Carbonate<br>53% Non-fibrous (Other) | None Detected |
| 38B<br>*192200654-0079* | 32/43 EXT. EXPANSION JOINT | Tan<br>Non-Fibrous<br>Homogeneous | 2% Cellulose | 35% Ca Carbonate<br>63% Non-fibrous (Other) | None Detected |

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|---|---|
| **EMSL Order:** | 192200654 |
| **Customer ID:** | ARCE78 |
| **Customer PO:** | |
| **Project ID:** | |

Analyst(s)

*Camryn Collette (12)*
*George Malone (49)*
*Luba Stockert (42)*

Joe Centifonti, Laboratory Manager
or Other Approved Signatory



Initial report from: 02/07/2022 09:08:58

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** *(lab use only)*:

EMSL Analytical, Inc.
10768 Baltimore Avenue
Beltsville, MD 20705
Phone (301) 937-5700
Fax (301) 937-5701

| | |
|---|---|
| **Company Name :** Arc Environmental | **EMSL Customer ID:** |
| **Street:** 1311 Haubert Street | **City:** Baltimore **State or Province:** MD |
| **Zip/Postal Code:** 21230 **Country:** US | **Telephone #:** 4106599971 **Fax #:** |
| **Report To (Name):** Blaine Owens | **Please Provide Results via:** ☐ Fax ☐ Email |
| **email Address:** bowens@arcenvironmental.com | **Purchase Order Number:** |
| **Client Project ID:** NIH 32/42/43 | **EMSL Project ID** *(internal use only)*: |
| **State or Province Collected:** [redacted] DC | **CT only** ☐ **Commercial/Taxable** ☐ **Residential/Tax Exempt** |
| **EMSL-Bill to:** ☑ Same ☐ Different - *If bill to is different note instructions in comment. Third party billing requires written authorization from third party* | |

**Turnaround Time (TAT) Options Please Check**

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour* ☐ 48 Hour ☑ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*32 Hour TAT available for select tests only; samples must be submitted by 11:30am.
Please call ahead for large projects and/or turnaround times 6 hours or less.

| PLM - Bulk (reporting limit) | TEM – Bulk |
|---|---|
| ☑ PLM EPA 600/R-93/116 (<1%) | ☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1 |
| ☐ PLM EPA NOB (<1%) | ☐ NY ELAP Method 198.4 non-friable - NY |
| **Point Count** ☐ 400 (<0.25%) ☐ 1000 (<0.1%) | ☐ Chatfield Protocol (semi-quantitative) |
| Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%) | ☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2 |
| ☐ NIOSH 9002 (<1%) | ☐ TEM Qualitative via Filtration Prep Technique |
| ☐ NY ELAP Method 198.1- friable - NY | ☐ TEM Qualitative via Drop Mount Prep Technique |
| ☐ NY ELAP Method 198.6 NOB- non-friable - NY | **Other tests (please specify)** |
| ☐ NY ELAP Method 198.8- Vermiculite Surfacing Material | |
| ☐ OSHA ID-191 Modified | ☐ |
| ☐ EMSL Standard Addition Method | |

☐ **Positive Stop – Clearly Identify Homogenous Areas (HA)** **Date Sampled:** 1.31.22

**Sampler's Name:** Blaine Owens **Sampler's Signature:** BDO

| Sample # | HA # | Sample Location | Material Description |
|---|---|---|---|
| 1A,B | | 32/42 | Grey Laminate Flooring |
| 2A,B | | ↓ | 2x2 Ceiling Tile |
| 3A,B | | | Grey 3" Cove Base |
| 4A,B | | | Drywall - C02 |
| 5A,B | | | Joint Compound - C02 |
| 6A,B | | | White Laminate Flooring |

**Client Sample # (s):** **Total # of Samples:**

**Relinquished by (Client):** BDO **Date:** 1.31.22 **Time:**

**Received by (Lab):** **Date:** **Time:**

**Comments/Special Instructions:**

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** *(lab use only)*:

EMSL Analytical, Inc.
10768 Baltimore Avenue

Beltsville, MD 20705
Phone (301) 937-5700
Fax (301) 937-5701

*Additional pages of the Chain of Custody are only necessary if needed for additional sample information*

| Sample # | HA # | Sample Location | Material Description |
|---|---|---|---|
| 7A,B | | 32/42 | Joint Compound - 01A |
| 8A,B | | | 12x12 Floor tile - OFF WHITE |
| 9A,B | | | 2.4 Ceiling Tile 1/4" Fissured |
| 10A,B | | | 2.4 Ceiling Tile 1" Fissured |
| 11A,B | | | Joint Compound Bio-2 |
| 12A,B | | | Interior window caulk |
| 13A,B,C,D,E | | | Spray on Fireproofing |
| 14A,B | | | Brown 3" cove Base |
| 15A,B | | | Carpet Glue |
| 16A,B | | | 12x12 Floor tile - White |
| 17A,B | | | Window Glazing |
| 18A,B | | | Brown 5" Cove Base |
| 19A,B | | | Joint Compound Class Rooms |
| 20A,B | | | Drywall Class Rooms |
| 21A,B | | | Carpet Glue |
| 22A,B | | | 12x12 Floor tile - OFF WHITE |
| 23A,B | | | Duct Seam Mastic |
| 24A,B | | 43 | 12x12 Floor tile - Brown |
| 25A,B | | | Black 3" cove Base |
| 26A,B | | | Brown 3" cove Base |
| 27A,B | | | Brown 5" cove Base |

***Comments/Special Instructions:**

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

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Beltsville, MD 20705
Phone (301) 937-5700
Fax (301) 937-5701

*Additional pages of the Chain of Custody are only necessary if needed for additional sample information*

| Sample # | HA # | Sample Location | Material Description |
|---|---|---|---|
| 28 A, B | | 43 | Drywall |
| 29 A, B | | | Joint Compound |
| 30 A, B | | | WINDOW GLAZING |
| 31 A, B | | | EXPANSION Joint CAULK |
| 32 A, B | | | Duct mastic |
| 33 A, B | | | 2:2 CEILING tile - BATHROOM |
| 34 A, B | | | Duct CAULK |
| 35 A, B | | | TSI MASTIC |
| 36 A, B | | | Duct mastic |
| 37 A, B | | | EXTERIOR Door CAULK |
| 38 A, B | | | EXT. EXPANSION Joint |
| | | | |
| | | | |
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| | | | |
| | | | |

***Comments/Special Instructions:**

# Appendix B

# XRF Lead-Based Paint Data Sheets

# XRF Lead-Based Paint Testing Data Sheet

NIH Survey

4200 Connecticut Avenue NW; Washington, DC 20008

Inspection Date: January 31, 2022 Abatement Level: 1.0

| Reading No. | Wall | Room | Component | Substrate | Paint Condition | Lead ($mg/cm^2$) | Mode | Classification |
|---|---|---|---|---|---|---|---|---|
| 001 | | | Calibration | | | 1.0 | TC | N/A |
| 002 | | | Calibration | | | 1.0 | TC | N/A |
| 003 | | | Calibration | | | 1.0 | TC | N/A |
| 004 | A | 32 C02 | door surface | wood | brown | 0.0 | QM | Negative |
| 005 | A | 32 C02 | door casing | metal | white | 0.0 | QM | Negative |
| 006 | A | 32 C02 | door jamb | metal | white | 0.0 | QM | Negative |
| 007 | A | 32 C02 | wall surface | drywall | white | 0.0 | QM | Negative |
| 008 | B | 32 C02 | wall surface | drywall | white | 0.0 | QM | Negative |
| 009 | C | 32 C02 | wall surface | drywall | white | 0.0 | QM | Negative |
| 010 | D | 32 C02 | wall surface | drywall | green | 0.0 | QM | Negative |
| 011 | D | 32 C02 | fuse box | metal | green | 0.0 | QM | Negative |
| 012 | D | 32 C02 | pipe | metal | green | 0.1 | QM | Negative |
| 013 | C | 32 C02 | hallway door casing | metal | blue | 0.0 | QM | Negative |
| 014 | C | 32 C02 | hallway door jamb | metal | blue | 0.0 | QM | Negative |
| 015 | C | 32 C02 | hallway wall surface | drywall | blue | 0.0 | QM | Negative |
| 016 | A | 32 C01A | door casing | metal | white | 0.0 | QM | Negative |
| 017 | A | 32 C01A | door jamb | metal | white | 0.0 | QM | Negative |
| 018 | A | 32 C01A | wall surface | drywall | white | 0.0 | QM | Negative |
| 019 | B | 32 C01A | wall surface | drywall | white | 0.0 | QM | Negative |
| 020 | C | 32 C01A | wall surface | drywall | white | 0.0 | QM | Negative |
| 021 | D | 32 C01A | wall surface | drywall | white | 0.0 | QM | Negative |
| 022 | C | 32 C01A | hallway door casing | metal | blue | 0.0 | QM | Negative |
| 023 | C | 32 C01A | hallway door jamb | metal | blue | 0.0 | QM | Negative |
| 024 | C | 32 C01A | hallway wall surface | drywall | blue | 0.0 | QM | Negative |
| 025 | A | 32 B01-01 | door surface | wood | brown | 0.0 | QM | Negative |
| 026 | A | 32 B01-01 | door casing | metal | red | 0.0 | QM | Negative |
| 027 | A | 32 B01-01 | door jamb | metal | red | 0.0 | QM | Negative |
| 028 | A | 32 B01-01 | wall surface | drywall | white | 0.0 | QM | Negative |
| 029 | B | 32 B01-01 | wall surface | drywall | white | 0.0 | QM | Negative |
| 030 | C | 32 B01-01 | wall surface | drywall | white | 0.0 | QM | Negative |
| 031 | D | 32 B01-01 | wall surface | drywall | white | 0.0 | QM | Negative |
| 032 | - | 32 B01-01 | ceiling frame | metal | black | 0.0 | QM | Negative |
| 033 | A | 32 B01-01 office | door surface | wood | brown | 0.0 | QM | Negative |
| 034 | A | 32 B01-01 office | door casing | metal | gray | 0.0 | QM | Negative |
| 035 | A | 32 B01-01 office | door jamb | metal | gray | 0.0 | QM | Negative |
| 036 | A | 32 B01-01 office | wall surface | drywall | white | 0.0 | QM | Negative |
| 037 | B | 32 B01-01 office | wall surface | drywall | white | 0.0 | QM | Negative |
| 038 | C | 32 B01-01 office | wall surface | concrete | white | 0.0 | QM | Negative |
| 039 | D | 32 B01-01 office | wall surface | drywall | white | 0.0 | QM | Negative |
| 040 | C | 32 B01-01 office | window casing | metal | black | 0.0 | QM | Negative |
| 041 | C | 32 B01-01 office | window sill | metal | white | 0.2 | QM | Negative |
| 042 | A | 32 B01-01 office 4 | door surface | wood | brown | 0.0 | QM | Negative |
| 043 | A | 32 B01-01 office 4 | door casing | metal | gray | 0.0 | QM | Negative |
| 044 | A | 32 B01-01 office 4 | door jamb | metal | gray | 0.0 | QM | Negative |

# XRF Lead-Based Paint Testing Data Sheet

NIH Survey

4200 Connecticut Avenue NW; Washington, DC 20008

Inspection Date: January 31, 2022 Abatement Level: 1.0

| Reading No. | Wall | Room | Component | Substrate | Paint Condition | Lead ($mg/cm^2$) | Mode | Classification |
|---|---|---|---|---|---|---|---|---|
| 045 | C | 32 B01-01 office 4 | wall surface | drywall | white | 0.0 | QM | Negative |
| 046 | D | 32 B01-01 office 4 | wall surface | concrete | white | 0.0 | QM | Negative |
| 047 | D | 32 B01-01 office 4 | window casing | metal | black | 0.0 | QM | Negative |
| 048 | A | 32 B01-01 office 3 | door surface | wood | brown | 0.0 | QM | Negative |
| 049 | A | 32 B01-01 office 3 | door casing | metal | gray | 0.0 | QM | Negative |
| 050 | A | 32 B01-01 office 3 | door jamb | metal | gray | 0.0 | QM | Negative |
| 051 | A | 32 B01-01 office 3 | wall surface | drywall | white | 0.0 | QM | Negative |
| 052 | C | 32 B01-01 office 3 | wall surface | concrete | white | 0.3 | QM | Negative |
| 053 | C | 32 B01-01 office 3 | window casing | metal | black | 0.0 | QM | Negative |
| 054 | C | 32 B01-01 office 3 | window sill | metal | white | 0.3 | QM | Negative |
| 055 | A | 32 B01-01 office | door casing | metal | gray | 0.0 | QM | Negative |
| 056 | A | 32 B01-01 office | door jamb | metal | gray | 0.0 | QM | Negative |
| 057 | A | 32 B01-01 office | wall surface | drywall | white | 0.0 | QM | Negative |
| 058 | C | 32 B01-01 office | wall surface | drywall | white | 0.0 | QM | Negative |
| 059 | A | 32 B01-02 | door casing | metal | red | 0.0 | QM | Negative |
| 060 | A | 32 B01-02 | door jamb | metal | red | 0.0 | QM | Negative |
| 061 | A | 32 B01-02 | wall surface | drywall | white | 0.0 | QM | Negative |
| 062 | C | 32 B01-02 | wall surface | concrete | white | 0.0 | QM | Negative |
| 063 | C | 32 B01-02 | window sill | metal | white | 0.3 | QM | Negative |
| 064 | - | 32 B01-02 | ceiling frame | metal | black | 0.0 | QM | Negative |
| 065 | A | 32 B01-25 | wall surface | drywall | white | 0.0 | QM | Negative |
| 066 | C | 32 B01-25 | corner beam | concrete | white | 0.4 | QM | Negative |
| 067 | B | 32 B01-24 | wall surface | drywall | white | 0.0 | QM | Negative |
| 068 | C | 32 B01-24 | corner beam | concrete | white | 0.4 | QM | Negative |
| 069 | A | 32 B01-23 | door casing | metal | red | 0.0 | QM | Negative |
| 070 | A | 32 B01-23 | door jamb | metal | red | 0.0 | QM | Negative |
| 071 | C | 32 B01-23 | wall surface | drywall | white | 0.0 | QM | Negative |
| 072 | D | 32 B01-23 | wall surface | drywall | white | 0.0 | QM | Negative |
| 073 | A | 32 B01-22 | door surface | wood | brown | 0.0 | QM | Negative |
| 074 | A | 32 B01-22 | door casing | metal | red | 0.0 | QM | Negative |
| 075 | A | 32 B01-22 | door jamb | metal | red | 0.0 | QM | Negative |
| 076 | B | 32 B01-22 | wall surface | drywall | white | 0.0 | QM | Negative |
| 077 | C | 32 B01-22 | wall surface | concrete | white | 0.5 | QM | Negative |
| 078 | A | 32 B01-21 | door surface | wood | brown | 0.0 | QM | Negative |
| 079 | A | 32 B01-21 | door casing | metal | red | 0.0 | QM | Negative |
| 080 | A | 32 B01-21 | door jamb | metal | red | 0.0 | QM | Negative |
| 081 | A | 32 B01-21 | wall surface | drywall | white | 0.0 | QM | Negative |
| 082 | C | 32 B01-21 | wall surface | drywall | white | 0.0 | QM | Negative |
| 083 | A | 32 B01-20 | door surface | wood | brown | 0.0 | QM | Negative |
| 084 | A | 32 B01-20 | door casing | metal | red | 0.0 | QM | Negative |
| 085 | A | 32 B01-20 | door jamb | metal | red | 0.0 | QM | Negative |
| 086 | C | 32 B01-20 | wall surface | drywall | white | 0.0 | QM | Negative |
| 087 | D | 32 B01-20 | wall surface | drywall | white | 0.0 | QM | Negative |
| 088 | - | 32 B01-20 | ceiling frame | metal | black | 0.0 | QM | Negative |

# XRF Lead-Based Paint Testing Data Sheet

NIH Survey

4200 Connecticut Avenue NW; Washington, DC 20008

Inspection Date: January 31, 2022 Abatement Level: 1.0

| Reading No. | Wall | Room | Component | Substrate | Paint Condition | Lead ($mg/cm^2$) | Mode | Classification |
|---|---|---|---|---|---|---|---|---|
| 089 | B | 32 B01-19 | wall surface | drywall | white | 0.0 | QM | Negative |
| 090 | C | 32 B01-18 | wall surface | drywall | white | 0.0 | QM | Negative |
| 091 | A | 32 B01-15 | wall surface | drywall | white | 0.0 | QM | Negative |
| 092 | A | 32 B01-10 | door casing | metal | red | 0.0 | QM | Negative |
| 093 | A | 32 B01-10 | door jamb | metal | red | 0.0 | QM | Negative |
| 094 | A | 32 B01-09 | door surface | wood | brown | 0.0 | QM | Negative |
| 095 | A | 32 B01-09 | door casing | metal | gray | 0.0 | QM | Negative |
| 096 | A | 32 B01-09 | door jamb | metal | gray | 0.0 | QM | Negative |
| 097 | B | 32 B01-09 | wall surface | drywall | white | 0.0 | QM | Negative |
| 098 | C | 32 B01-09 | wall surface | concrete | white | 0.3 | QM | Negative |
| 099 | C | 32 B01-09 | window casing | metal | black | 0.0 | QM | Negative |
| 100 | C | 32 B01-08 | wall surface | drywall | white | 0.0 | QM | Negative |
| 101 | - | 32 B01-08 | ceiling frame | metal | black | 0.0 | QM | Negative |
| 102 | D | 32 B01-05 | wall surface | drywall | white | 0.0 | QM | Negative |
| 103 | D | 32 B01 class hallway | door surface | wood | brown | 0.0 | QM | Negative |
| 104 | A | 32 B01 class hallway | door casing | metal | gray | 0.0 | QM | Negative |
| 105 | D | 32 B01 class hallway | door jamb | metal | gray | 0.0 | QM | Negative |
| 106 | A | 32 B01 class hallway | wall surface | drywall | white | 0.0 | QM | Negative |
| 107 | B | 32 B01 class hallway | wall surface | drywall | white | 0.0 | QM | Negative |
| 108 | C | 32 B01 class hallway | wall surface | drywall | white | 0.0 | QM | Negative |
| 109 | D | 32 B01 class hallway | wall surface | drywall | white | 0.0 | QM | Negative |
| 110 | - | 32 B01 class hallway | ceiling | drywall | white | 0.0 | QM | Negative |
| 111 | B | 32 B01 class hallway | door surface | metal | red | 0.0 | QM | Negative |
| 112 | B | 32 B01 class hallway | door casing | metal | red | 0.0 | QM | Negative |
| 113 | B | 32 B01 class hallway | closet door surface | metal | red | 2.2 | QM | Positive |
| 114 | B | 32 B01 class hallway | closet door casing | metal | red | 0.0 | QM | Negative |
| 115 | B | 32 B01 class hallway | closet door jamb | metal | red | 0.0 | QM | Negative |
| 116 | B | 32 B01 class hallway | closet floor | concrete | gray | 0.0 | QM | Negative |
| 117 | B | 32 B01 class hallway | chair rail | wood | red | 0.0 | QM | Negative |
| 118 | D | 32 B01 unmarked rm | wall surface | drywall | white | 0.0 | QM | Negative |
| 119 | D | 32 B01 unmarked rm | chair rail | wood | white | 0.0 | QM | Negative |
| 120 | D | 32 B01-27 | wall surface | drywall | white | 0.0 | QM | Negative |
| 121 | D | 32 B01-27 | chair rail | wood | white | 0.0 | QM | Negative |
| 122 | A | 32 B01-27 | closet door casing | metal | gray | 0.0 | QM | Negative |
| 123 | A | 43 foyer | door casing | metal | brown | 0.0 | QM | Negative |
| 124 | A | 43 foyer | door jamb | metal | bwown | 0.0 | QM | Negative |
| 125 | A | 43 foyer | wall surface | concrete | white | 0.0 | QM | Negative |
| 126 | B | 43 foyer | wall surface | drywall | white | 0.0 | QM | Negative |
| 127 | C | 43 foyer | wall surface | drywall | white | 0.0 | QM | Negative |
| 128 | D | 43 foyer | wall surface | concrete | white | 0.0 | QM | Negative |
| 129 | - | 43 foyer | floor | concrete | gray | 0.0 | QM | Negative |
| 130 | A | 43 foyer | pipe | metal | white | 0.0 | QM | Negative |
| 131 | A | 43 foyer | vent | metal | black | 0.0 | QM | Negative |
| 132 | A | 43 foyer | window cover | wood | black | 0.0 | QM | Negative |

# XRF Lead-Based Paint Testing Data Sheet

NIH Survey

4200 Connecticut Avenue NW; Washington, DC 20008

Inspection Date: January 31, 2022 Abatement Level: 1.0

| Reading No. | Wall | Room | Component | Substrate | Paint Condition | Lead ($mg/cm^2$) | Mode | Classification |
|---|---|---|---|---|---|---|---|---|
| 133 | C | 43 foyer | door surface | metal | brown | 0.0 | QM | Negative |
| 134 | C | 43 foyer | door casing | metal | brown | 0.0 | QM | Negative |
| 135 | C | 43 foyer | door jamb | metal | brown | 0.0 | QM | Negative |
| 136 | A | 43 A01 | door surface | wood | white | 0.0 | QM | Negative |
| 137 | A | 43 A01 | door casing | metal | white | 0.0 | QM | Negative |
| 138 | A | 43 A01 | door jamb | metal | white | 0.0 | QM | Negative |
| 139 | A | 43 A01 | wall surface | drywall | white | 0.0 | QM | Negative |
| 140 | B | 43 A01 | wall surface | concrete | white | 0.0 | QM | Negative |
| 141 | D | 43 A01 | wall surface | concrete | white | 0.0 | QM | Negative |
| 142 | D | 43 A01 | pipe | metal | brown | 0.2 | QM | Negative |
| 143 | D | 43 A01 | window casing | metal | orange | 0.2 | QM | Negative |
| 144 | D | 43 A01 | window frame | metal | black | 0.0 | QM | Negative |
| 145 | D | 43 A01 | guardrail | metal | orange | 0.2 | QM | Negative |
| 146 | D | 43 A01 | door surface | metal | orange | 0.0 | QM | Negative |
| 147 | D | 43 A01 | door casing | metal | orange | 0.0 | QM | Negative |
| 148 | D | 43 A01 | steel beam | metal | blue | 5.6 | QM | Positive |
| 149 | - | 43 A01 | steel beam | metal | blue | 5.9 | QM | Positive |
| 150 | A | 43 front hallway | door surface | metal | brown | 0.0 | QM | Negative |
| 151 | A | 43 front hallway | door casing | metal | brown | 0.0 | QM | Negative |
| 152 | A | 43 front hallway | door jamb | metal | brown | 0.0 | QM | Negative |
| 153 | A | 43 front hallway | wall surface | drywall | white | 0.0 | QM | Negative |
| 154 | A | 43 front hallway | wall surface | concrete | white | 0.2 | QM | Negative |
| 155 | D | 43 front hallway | door surface | metal | orange | 0.0 | QM | Negative |
| 156 | D | 43 front hallway | door casing | metal | orange | 0.2 | QM | Negative |
| 157 | D | 43 front hallway | door jamb | metal | orange | 0.0 | QM | Negative |
| 158 | D | 43 front hallway | steel beam | metal | blue | 8.6 | QM | Positive |
| 159 | D | 43 front hallway | wall surface | concrete | green | 0.1 | QM | Negative |
| 160 | D | 43 front hallway | wall surface | concrete | orange | 0.1 | QM | Negative |
| 161 | D | 43 front hallway | access panel | metal | white | 0.0 | QM | Negative |
| 162 | D | 43 front hallway | access panel casing | metal | white | 0.0 | QM | Negative |
| 163 | C | 43 front hallway | door surface | metal | brown | 0.0 | QM | Negative |
| 164 | C | 43 front hallway | door casing | metal | brown | 0.2 | QM | Negative |
| 165 | C | 43 front hallway | door jamb | metal | brown | 0.0 | QM | Negative |
| 166 | - | 43 front hallway | ceiling | drywall | white | 0.0 | QM | Negative |
| 167 | - | 43 front hallway | access panel | metal | white | 0.0 | QM | Negative |
| 168 | - | 43 front hallway | access panel casing | metal | white | 0.0 | QM | Negative |
| 169 | - | 43 front hallway | duct | metal | blue | 0.0 | QM | Negative |
| 170 | A | 43 front hallway | stairwell door surface | metal | brown | 0.0 | QM | Negative |
| 171 | A | 43 front hallway | stairwell door casing | metal | brown | 0.0 | QM | Negative |
| 172 | A | 43 front hallway | stairwell door jamb | metal | brown | 0.0 | QM | Negative |
| 173 | - | 43 front hallway | vent | metal | white | 0.0 | QM | Negative |
| 174 | - | 43 front hallway | light frame | metal | white | 0.0 | QM | Negative |
| 175 | A | 43 closet | door surface | metal | brown | 0.0 | QM | Negative |
| 176 | A | 43 closet | door casing | metal | brown | 0.0 | QM | Negative |

# XRF Lead-Based Paint Testing Data Sheet

NIH Survey

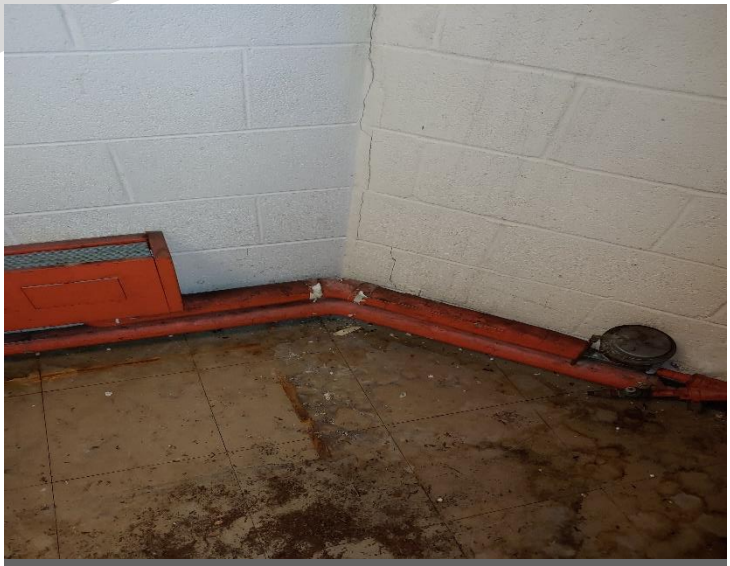
4200 Connecticut Avenue NW; Washington, DC 20008

Inspection Date: January 31, 2022 Abatement Level: 1.0

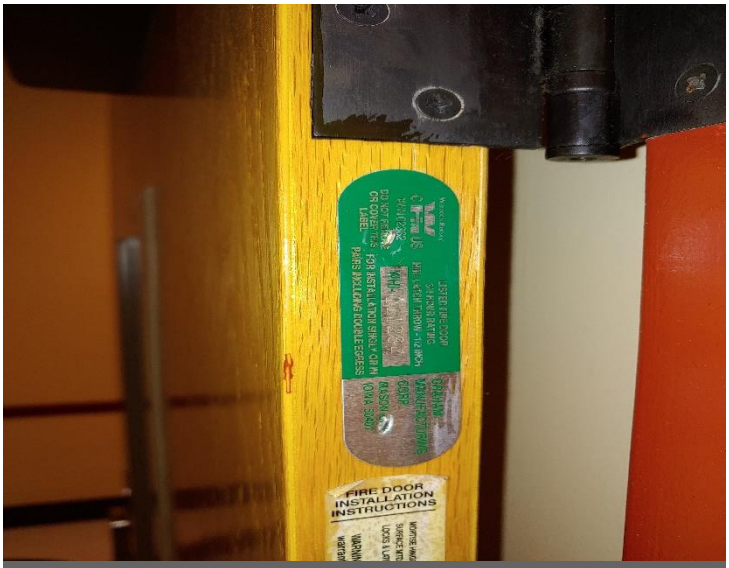
| Reading No. | Wall | Room | Component | Substrate | Paint Condition | Lead ($mg/cm^2$) | Mode | Classification |
|---|---|---|---|---|---|---|---|---|
| 177 | A | 43 closet | door jamb | metal | brown | 0.0 | QM | Negative |
| 178 | A | 43 closet | wall surface | concrete | white | 0.0 | QM | Negative |
| 179 | B | 43 closet | wall surface | concrete | white | 0.0 | QM | Negative |
| 180 | C | 43 closet | wall surface | concrete | white | 0.0 | QM | Negative |
| 181 | D | 43 closet | wall surface | concrete | white | 0.0 | QM | Negative |
| 182 | B | 43 closet | pipe | metal | white | 0.0 | QM | Negative |
| 183 | D | 43 closet | pipe | metal | white | 0.0 | QM | Negative |
| 184 | D | 43 closet | access panel | metal | white | 0.0 | QM | Negative |
| 185 | D | 43 closet | access panel casing | metal | white | 0.0 | QM | Negative |
| 186 | A | 43 A02 | door surface | metal | brown | 0.0 | QM | Negative |
| 187 | A | 43 A02 | door casing | metal | brown | 0.0 | QM | Negative |
| 188 | A | 43 A02 | door jamb | metal | brown | 0.0 | QM | Negative |
| 189 | A | 43 A02 | wall surface | concrete | white | 0.0 | QM | Negative |
| 190 | B | 43 A02 | wall surface | concrete | white | 0.0 | QM | Negative |
| 191 | C | 43 A02 | wall surface | concrete | white | 0.0 | QM | Negative |
| 192 | D | 43 A02 | wall surface | concrete | white | 0.0 | QM | Negative |
| 193 | A | 43 A02 | window casing | metal | brown | 0.0 | QM | Negative |
| 194 | C | 43 A02 | vent | metal | red | 0.0 | QM | Negative |
| 195 | - | 43 A02 | vent | metal | white | 0.0 | QM | Negative |
| 196 | - | 43 rear hallway | ceiling | drywall | white | 0.0 | QM | Negative |
| 197 | - | 43 rear hallway | light frame | metal | white | 0.0 | QM | Negative |
| 198 | C | 43 rear hallway | steel beam | metal | blue | 5.8 | QM | Positive |
| 199 | C | 43 rear hallway | wall surface | concrete | white | 0.0 | QM | Negative |
| 200 | A | 43 rear hallway | door surface | metal | brown | 0.0 | QM | Negative |
| 201 | A | 43 rear hallway | door casing | metal | brown | 0.0 | QM | Negative |
| 202 | A | 43 rear hallway | door jamb | metal | brown | 0.0 | QM | Negative |
| 203 | A | 43 rear hallway | closet sink | metal | white | 0.0 | QM | Negative |
| 204 | D | 43 A04 | wall surface | concrete | white | 0.0 | QM | Negative |
| 205 | C | 43 A04 | vent | metal | orange | 0.0 | QM | Negative |
| 206 | A | 43 mechnical room | door frame | metal | green | 0.0 | QM | Negative |
| 207 | A | 43 mechnical room | duct | metal | red | 0.0 | QM | Negative |
| 208 | A | 43 mechnical room | duct | metal | blue | 0.0 | QM | Negative |
| 209 | A | 43 mechnical room | wall surface | concrete | white | 0.0 | QM | Negative |
| 210 | B | 43 mechnical room | wall surface | concrete | white | 0.0 | QM | Negative |
| 211 | C | 43 mechnical room | wall surface | concrete | white | 0.0 | QM | Negative |
| 212 | D | 43 mechnical room | wall surface | concrete | white | 0.0 | QM | Negative |
| 213 | C | 43 mechnical room | steel beam | metal | blue | 9.9 | QM | Positive |
| 214 | A | 43 front exterior | handrail | metal | black | 0.0 | QM | Negative |
| 215 | A | 43 front exterior | light frame | metal | white | 0.0 | QM | Negative |
| 216 | | | Calibration | | | 1.0 | TC | N/A |
| 217 | | | Calibration | | | 1.0 | TC | N/A |
| 218 | | | Calibration | | | 1.0 | TC | N/A |

# Appendix C

# Photographic Log



Building 43 asbestos containing floor tile and mastic.



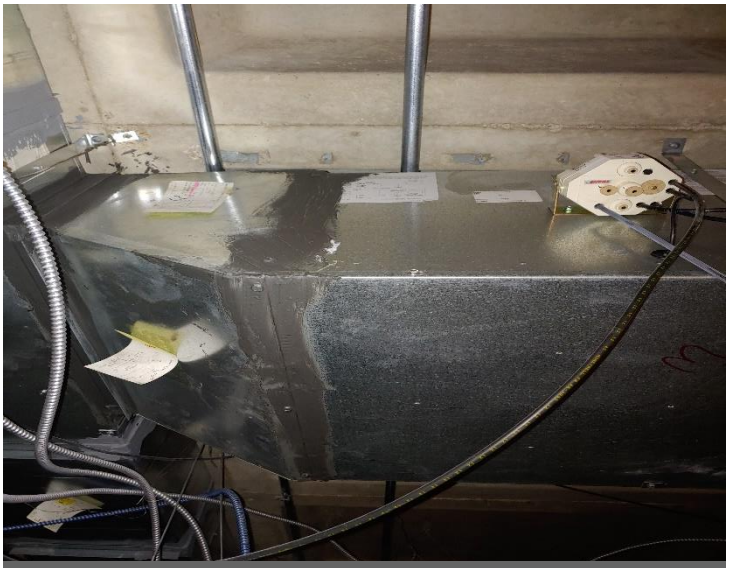

Typical fire-door identified on the Site.

Suspect pottery kilns in Building 43.

Typical non-asbestos spray-on fireproofing.

| PHOTO 1 | Date Site Surveyed: January 31, 2022 | UDC-NIH Buildings 32/42/43 |
|---|---|---|

Two types of non-asbestos 12”x12” floor tile in Building 32/42.



Typical non-asbestos duct seam caulk on the Site.

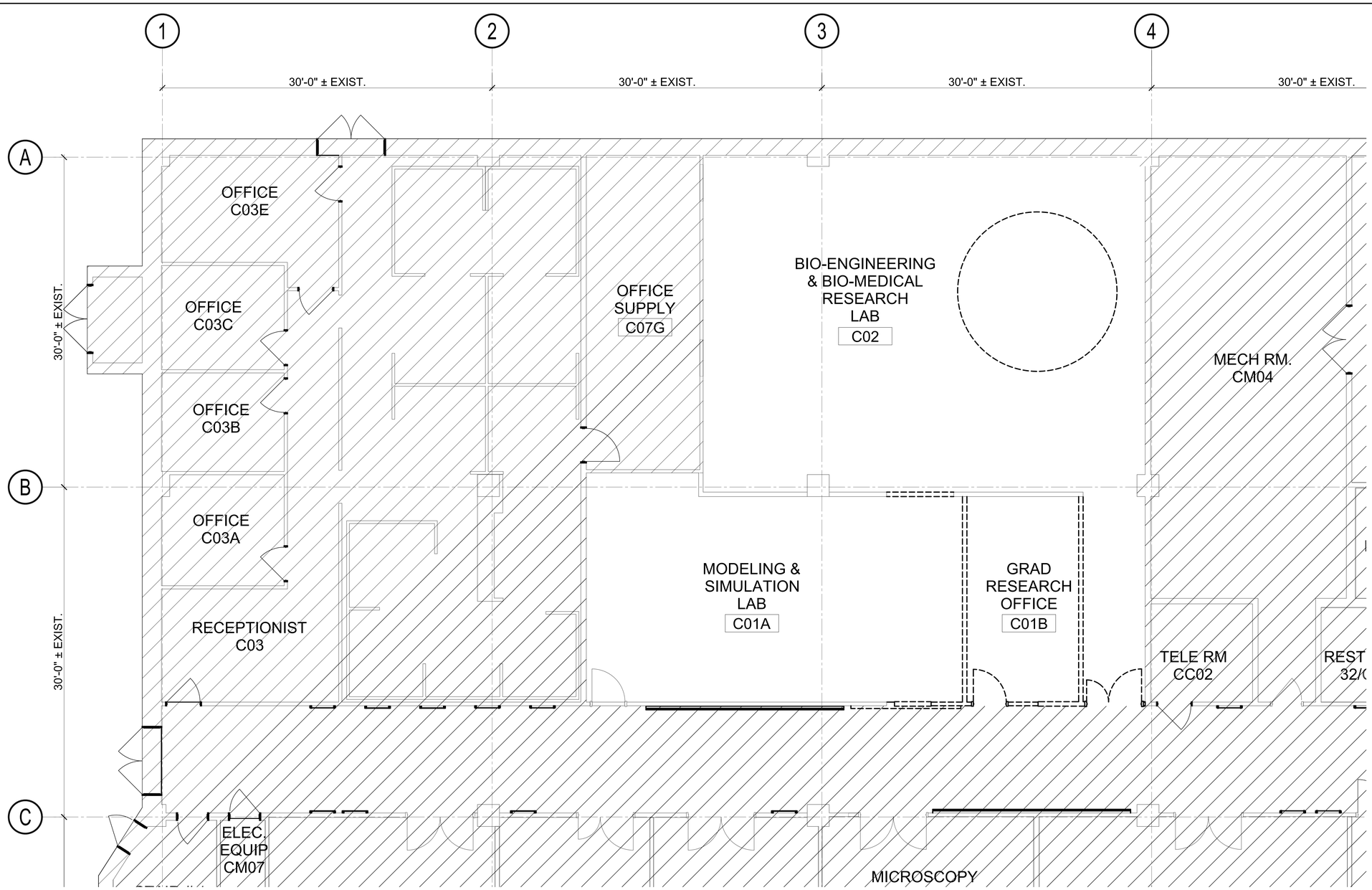

Typical exit signs and emergency lighting found on the Site.

Suspect microbial growth on the ceiling in Building 43.

| PHOTO 2 | Date Site Surveyed: January 31, 2022 | UDC-NIH Buildings 32/42/43 |
|---|---|---|

# Appendix D

# Construction Diagrams

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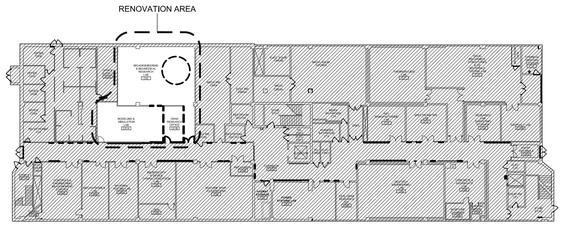
### KEYED DEMOLITION NOTES: x

RENOVATION AREA



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PERMIT STAMP:

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SUITE 560
WASHINGTON, DC 20007
PHONE 202.448.9050

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WASHINGTON, DC 20008

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NIH CO6 SPECIALIZED CENTER FOR ASSISTIVE REHABILITATION RESEARCH
AT SEAS - SCHOOL OF ENGINEERING AND APPLIED SCIENCES

A/E CONTRACT NUMBER:
GF-2018-C-0074
SOLICITATION NUMBER:
GF-2019-T-0044

N TRUE NORTH

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | 04/19/2021 | 35% DESIGN DEVELOPMENT SUBMISSION |
| | 01/20/2021 | SCHEMATIC DESIGN SUBMISSION |

REVISIONS

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REGISTRATION NO.: 100943
EXP. DATE: XX

PROFESSIONAL STAMP:

DRAWING TITLE

FLOOR PLAN - DEMOLITION
BUILDING 32 / 42
LEVEL C

| | |
|---|---|
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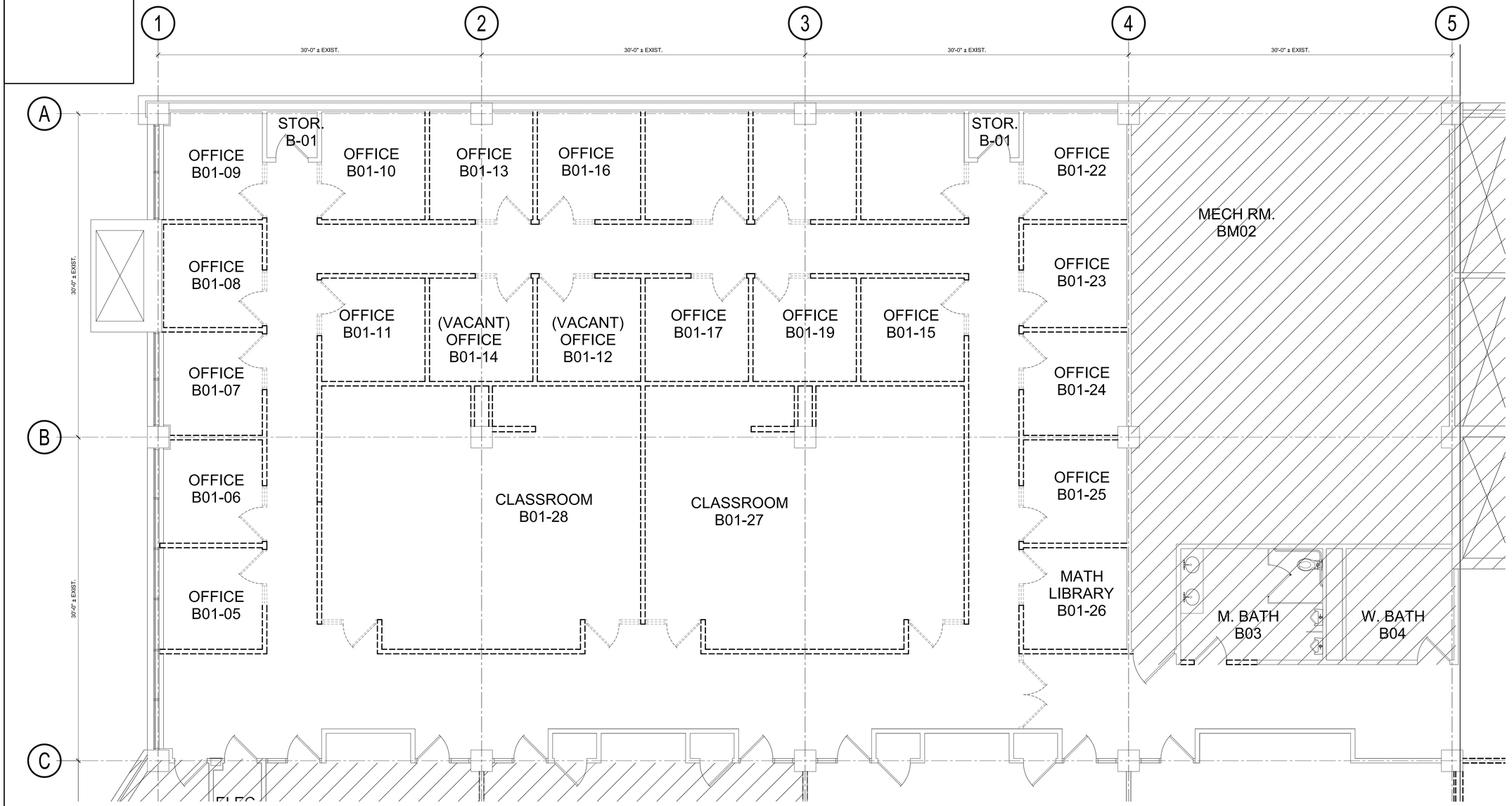
| CHECKED BY: MPMofDC | AD1.00 |
| APPROVED BY: MPMofDC | |
| DATE: X | |

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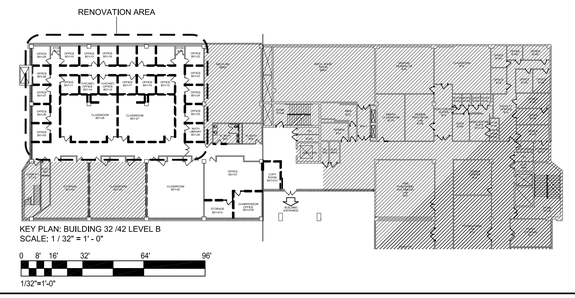


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BUILDING 32 / 42
LEVEL B

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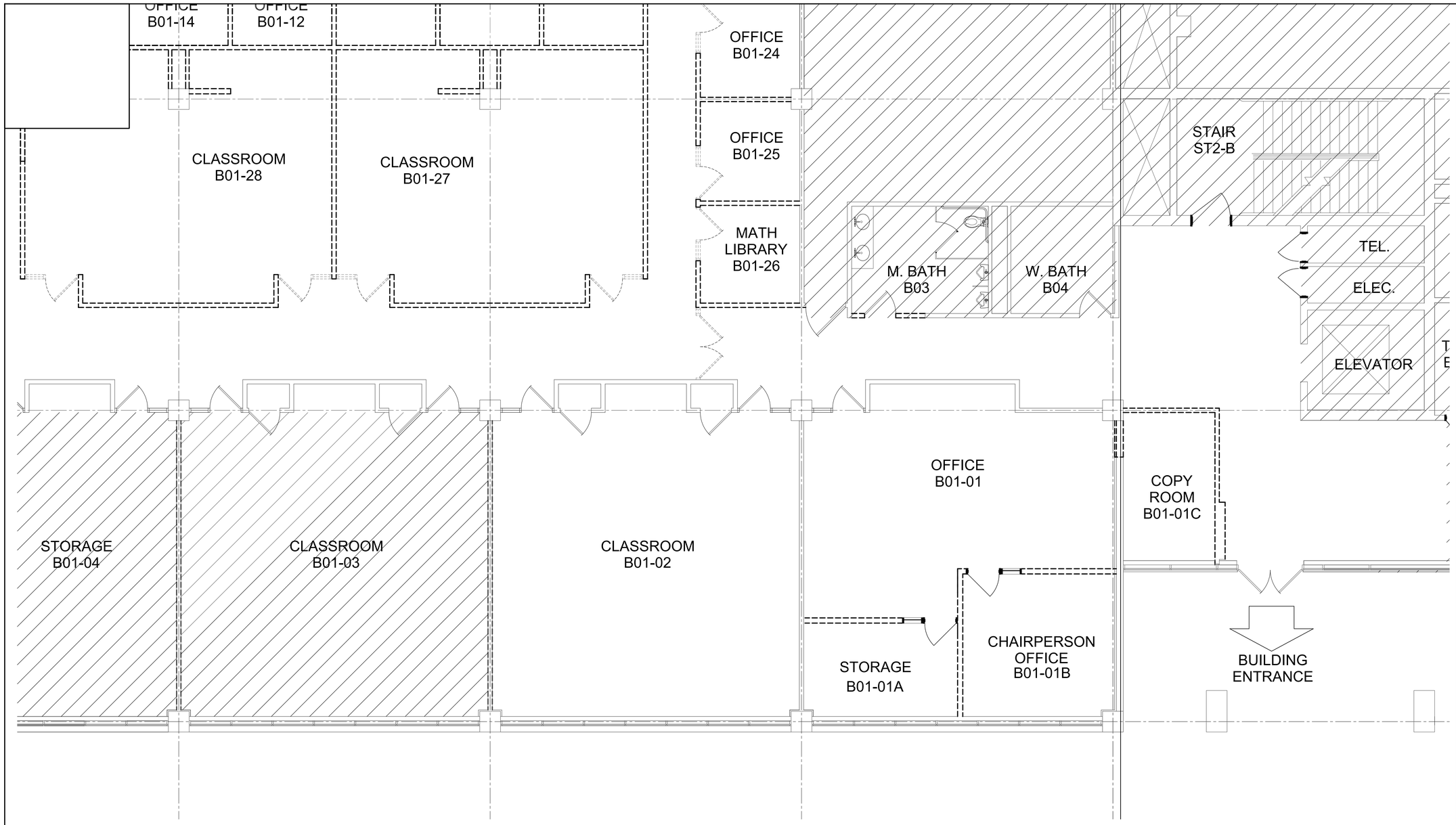


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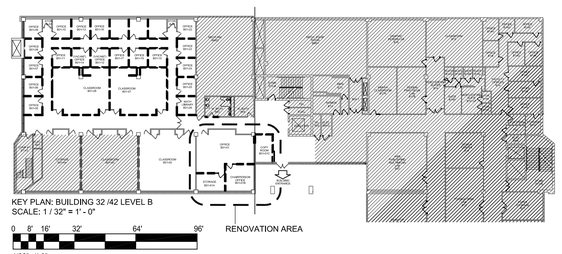

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PROFESSIONAL STAMP:

DRAWING TITLE

## FLOOR PLAN - DEMOLITION
## BUILDING 32 / 42
## LEVEL B

| | |
|---|---|
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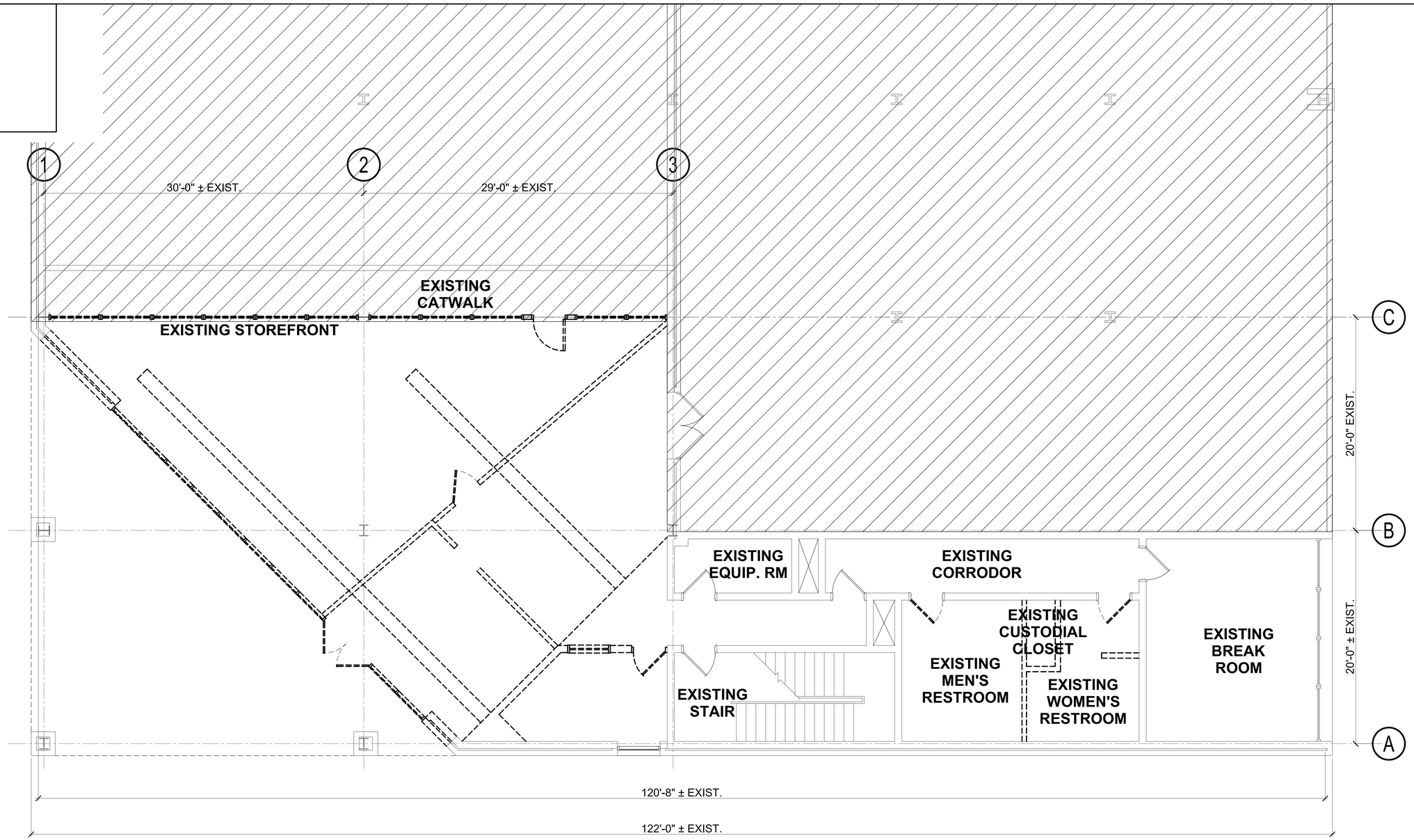
| CHECKED BY: MPMofDC | AD1.02 |
| APPROVED BY: MPMofDC | |
| DATE: X | |

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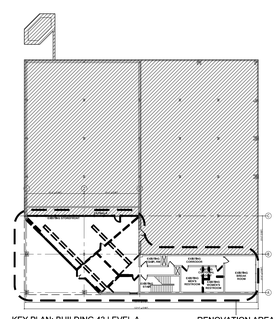
7. EXCEPT AS NOTED OTHERWISE, REMOVE ALL DEMOLISHED MATERIALS FROM THE SITE AND DISPOSE OF IN ACCORDANCE WITH LEED PROCEDURES INCLUDING ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. DO NOT BURN, BURY OR SELL MATERIALS ON THE PROJECT SITE. AT THE COMPLETION OF EACH WORK DAY, CLEAN THE ENTIRE WORK AREA AND LEAVE IN A NEAT CONDITION FREE OF DEBRIS AND RUBBISH.
8. THROUGHOUT THE COURSE OF DEMOLITION ACTIVITIES, PROPERLY PROTECT ANY EXISTING CONSTRUCTION INDICATED TO REMAIN. EXERCISE CARE WHEN REMOVING ADJACENT CONSTRUCTION AND PROPERLY REPAIR (TO ORIGINAL CONDITION) ANY AREAS SCHEDULED TO REMAIN THAT SUSTAINED DAMAGE AS A RESULT OF DEMOLITION ACTIVITIES.
9. THE OWNER RESERVES THE RIGHT TO REMOVE ANY ITEMS SCHEDULED FOR DEMOLITION PRIOR TO THE START OF DEMOLITION ACTIVITIES AND CLAIM ANY ITEMS REMOVED BY THE CONTRACTOR THROUGHOUT THE COURSE OF DEMOLITION.
10. MECHANICAL, PLUMBING, ELECTRICAL DOCUMENTS PROVIDE ADDITIONAL DEMOLITION REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THOSE DOCUMENTS THAT MAY PROVIDE ADDITIONAL DEMOLITION REQUIREMENTS BEYOND THOSE SPECIFICALLY INDICATED ON THE ARCHITECTURAL DEMOLITION PLANS.
11. THROUGHOUT THE COURSE OF DEMOLITION ACTIVITIES, THE CONTRACTOR SHALL PATCH, REPAIR AND PREPARE EXISTING EXPOSED SURFACES AND/OR ADJACENT MATERIAL, AS REQUIRED TO RECEIVE NEW FINISHES.
12. ALL EXISTING WALLS, CEILINGS, FLOORING ETC. WHICH ARE DAMAGED DUE TO DEMOLITION WORK SHALL BE PATCHED (REGARDLESS OF SIZE) TO MATCH EXISTING AND / OR NEW FINISHES SCHEDULED.
13. PRIOR TO STARTING DEMOLITION WORK THE CONTRACTOR SHALL MEET WITH THE OWNER TO COORDINATE ALL ITEMS TO BE SALVAGED AND / OR RELOCATED. ALL SALVAGED ITEMS MUST BE REMOVED TO AVOID DAMAGE PROTECTED AND STORED IN A LOCATION DIRECTED BY OWNER.
14. THE EXISTING PARTITIONS THAT ARE INDICATED TO BE REMOVED SHALL BE REMOVED TO THEIR FULLEST HEIGHT U.N.O.
15. IN AREAS WHERE NEW FLOOR FINISHES ARE SCHEDULED OR DETAILED CONTRACTOR SHALL PREPARE SURFACES AS REQUIRED FOR NEW FLOOR FINISHES AS INDICATED
16. ALL LOUD WORK NEEDS TO BE DONE BEFORE 8AM OR AFTER 5PM OR ON THE WEEKENDS. ANY WORK THAT INTERFERES WITH DAILY OPERATIONS OF OTHER TENANTS NEEDS TO BE DONE OFF HOURS.

## KEYED DEMOLITION NOTES: x



KEY PLAN: BUILDING 43 LEVEL A
SCALE: 1 / 32" = 1' - 0"

RENOVATION AREA

0 8' 16' 32' 64' 96'

1/32"=1'-0"

PERMIT STAMP: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UNIVERSITY OF THE DISTRICT OF COLUMBIA
4200 CONNECTICUT AVENUE NW
WASHINGTON, DC 20008

PROJECT:
# BUILDING 32/42/43 A CENTER FOR BIOMEDICAL AND REHABILITATION ENGINEERING (CBRE)

NIH CO6 SPECIALIZED CENTER FOR ASSISTIVE REHABILITATION RESEARCH
AT SEAS - SCHOOL OF ENGINEERING AND APPLIED SCIENCES

A/E CONTRACT NUMBER:
GF-2018-C-0074
SOLICITATION NUMBER:
GF-2019-T-0044

TRUE NORTH

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | 04/19/2021 | 35% DESIGN DEVELOPMENT SUBMISSION |
| | 01/20/2021 | SCHEMATIC DESIGN SUBMISSION |

REVISIONS

PROFESSIONAL CERTIFICATION

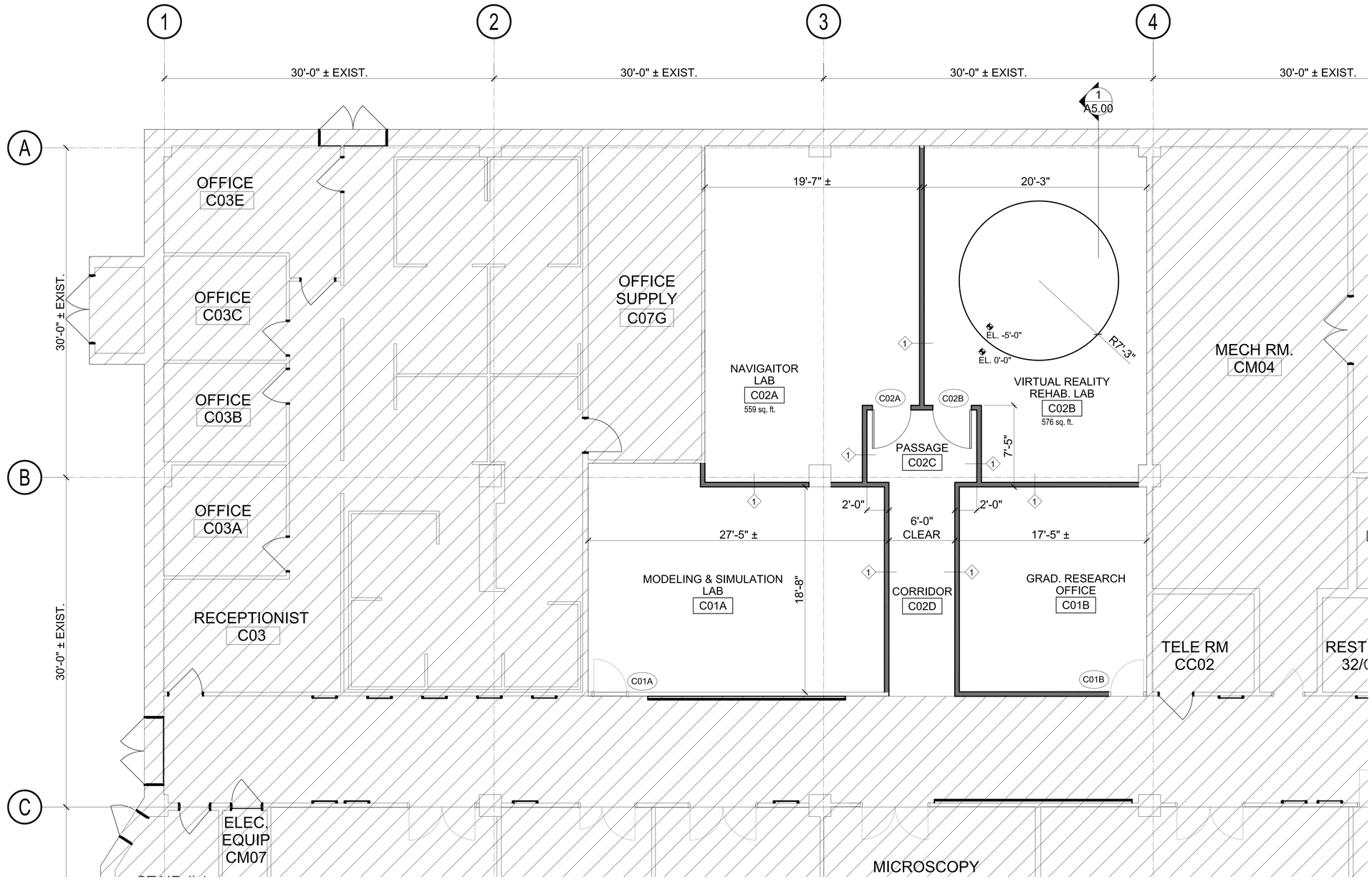
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT / PROFESSIONAL ENGINEER UNDER THE LAWS OF THE DISTRICT OF COLUMBIA
REGISTRATION NO.: 100943
EXP. DATE: XX

PROFESSIONAL STAMP:

DRAWING TITLE
FLOOR PLAN - DEMOLITION
BUILDING 43
LEVEL A

DRAWN BY: MPMofDC
CHECKED BY: MPMofDC
APPROVED BY: MPMofDC
DATE: X

DRAWING NO.
AD1.03




1 FLOOR PLAN

SCALE : 1/4" = 1' - 0"

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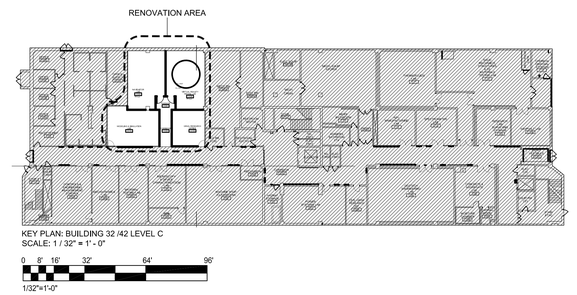
SCALE: 1/4"=1'-0"




KEY PLAN: BUILDING 32 /42 LEVEL C

SCALE: 1 / 32" = 1' - 0"

0 8' 16' 32' 64' 96'

1/32"=1'-0"

PERMIT STAMP:

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PROJECT:

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AT SEAS - SCHOOL OF ENGINEERING AND APPLIED SCIENCES

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SOLICITATION NUMBER:
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PROFESSIONAL STAMP:

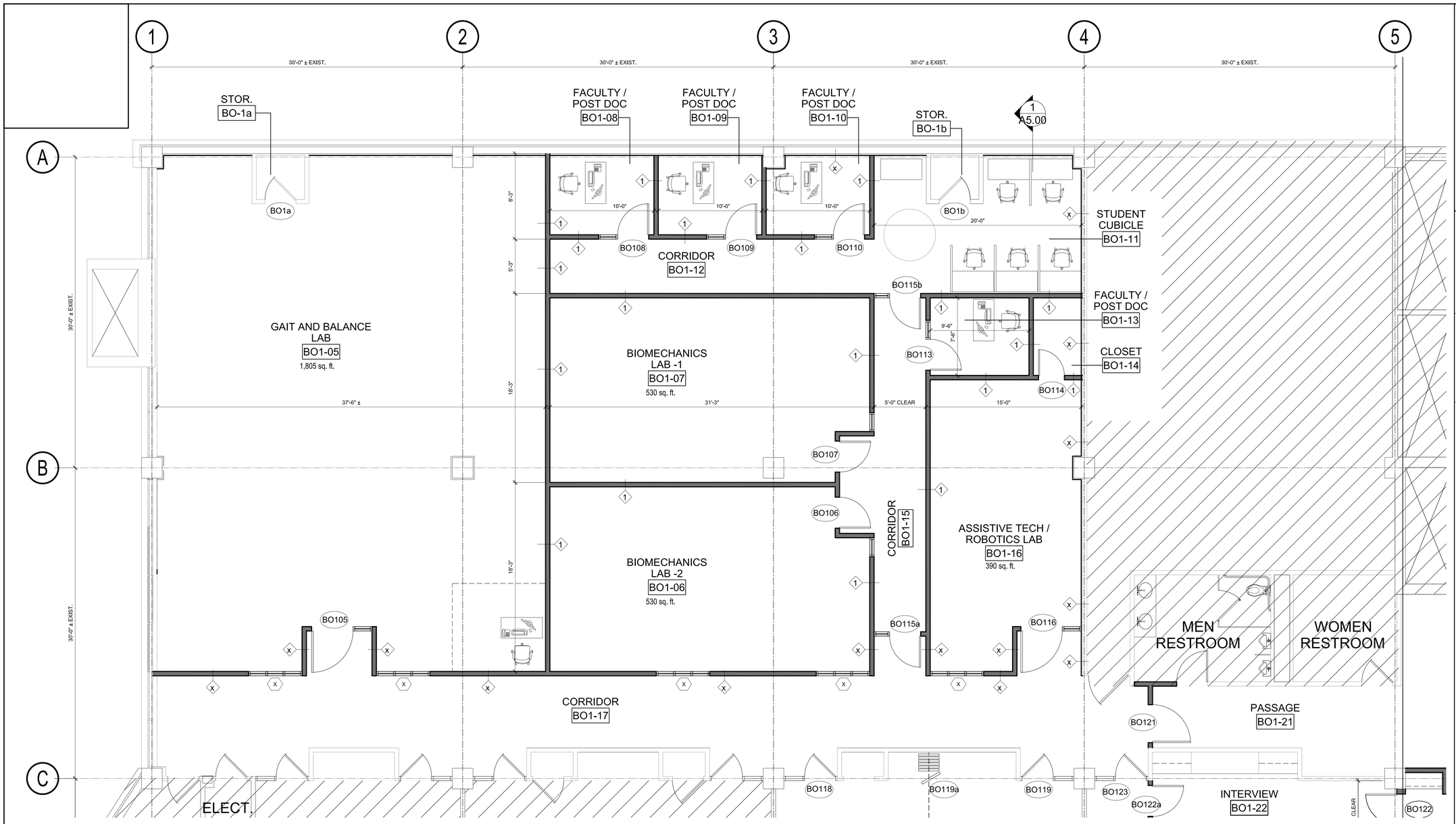
DRAWING TITLE

FLOOR PLAN
BUILDING 32 / 42
LEVEL C

DRAWN BY: MPMofDC
CHECKED BY: MPMofDC
APPROVED BY: MPMofDC
DATE: X

DRAWING NO.

A1.00




1 FLOOR PLAN

SCALE : 1/4" = 1' - 0"

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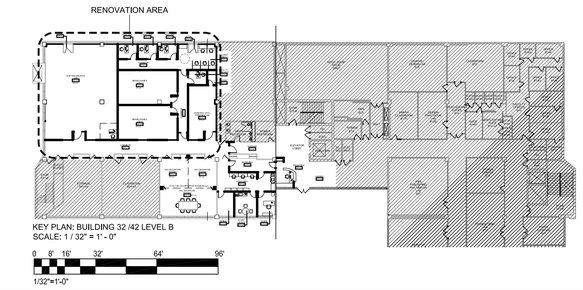
SCALE: 1/4"=1'-0"




KEY PLAN: BUILDING 32 /42 LEVEL B
SCALE: 1 / 32" = 1' - 0"

0 8' 16' 32' 64' 96'

1/32"=1'-0"

PERMIT STAMP:

ARCHITECT:

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REGISTRATION NO.: 100943
EXP. DATE: XX

PROFESSIONAL STAMP:

DRAWING TITLE

FLOOR PLAN
BUILDING 32 / 42
LEVEL B

| | |
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| DRAWN BY: MPMofDC | DRAWING NO. |
| CHECKED BY: MPMofDC | A1.01 |
| APPROVED BY: MPMofDC | |
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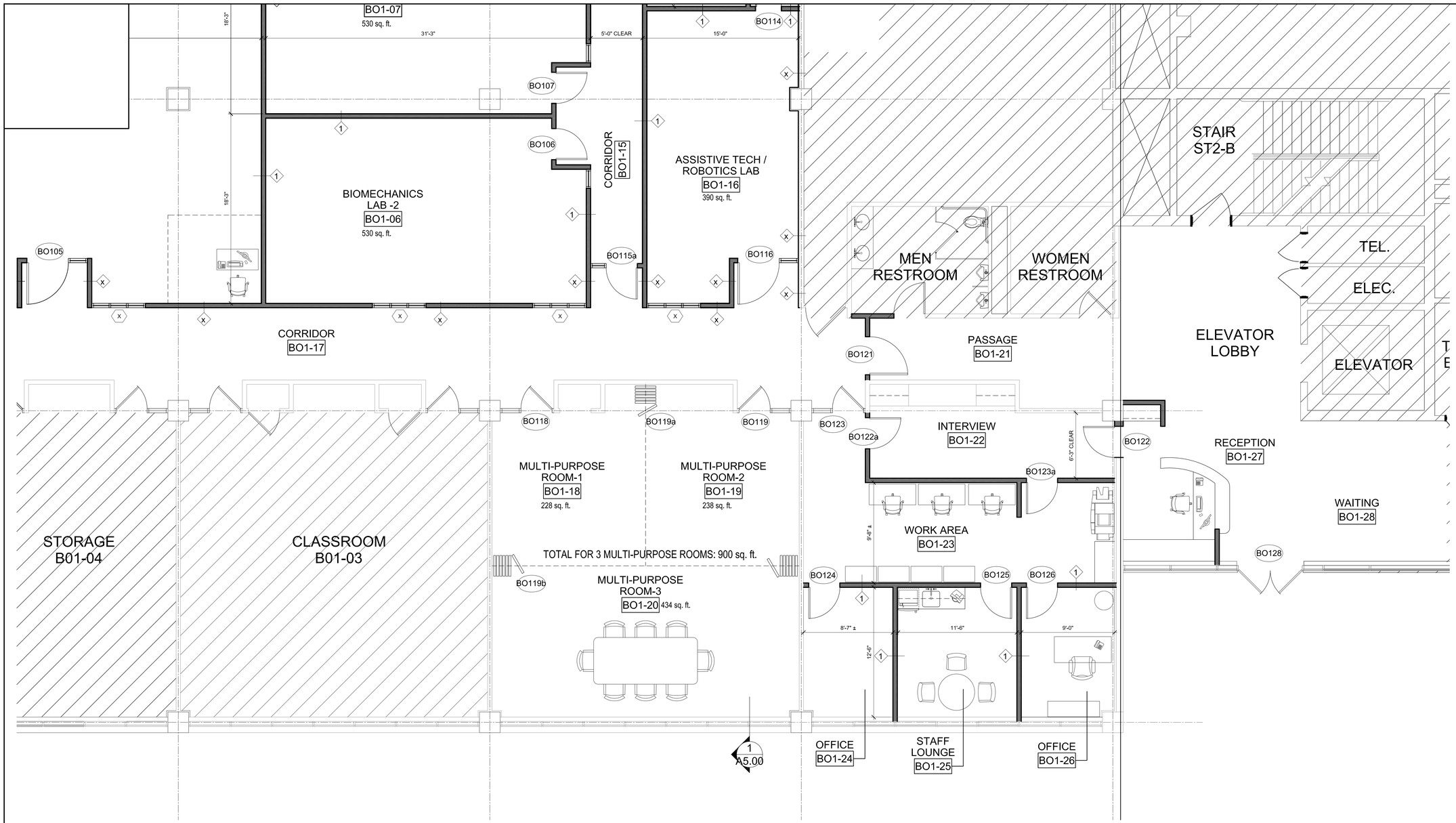


1 FLOOR PLAN

SCALE : 1/4" = 1' - 0"

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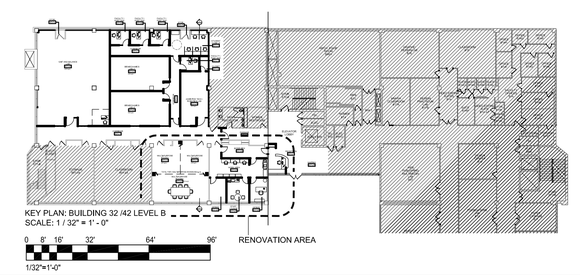
SCALE: 1/4"=1'-0"

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REGISTRATION NO.: 100943
EXP. DATE: XX

PROFESSIONAL STAMP:

DRAWING TITLE

FLOOR PLAN
BUILDING 32 / 42
LEVEL B

| | |
|---|---|
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| APPROVED BY: MPMofDC | |
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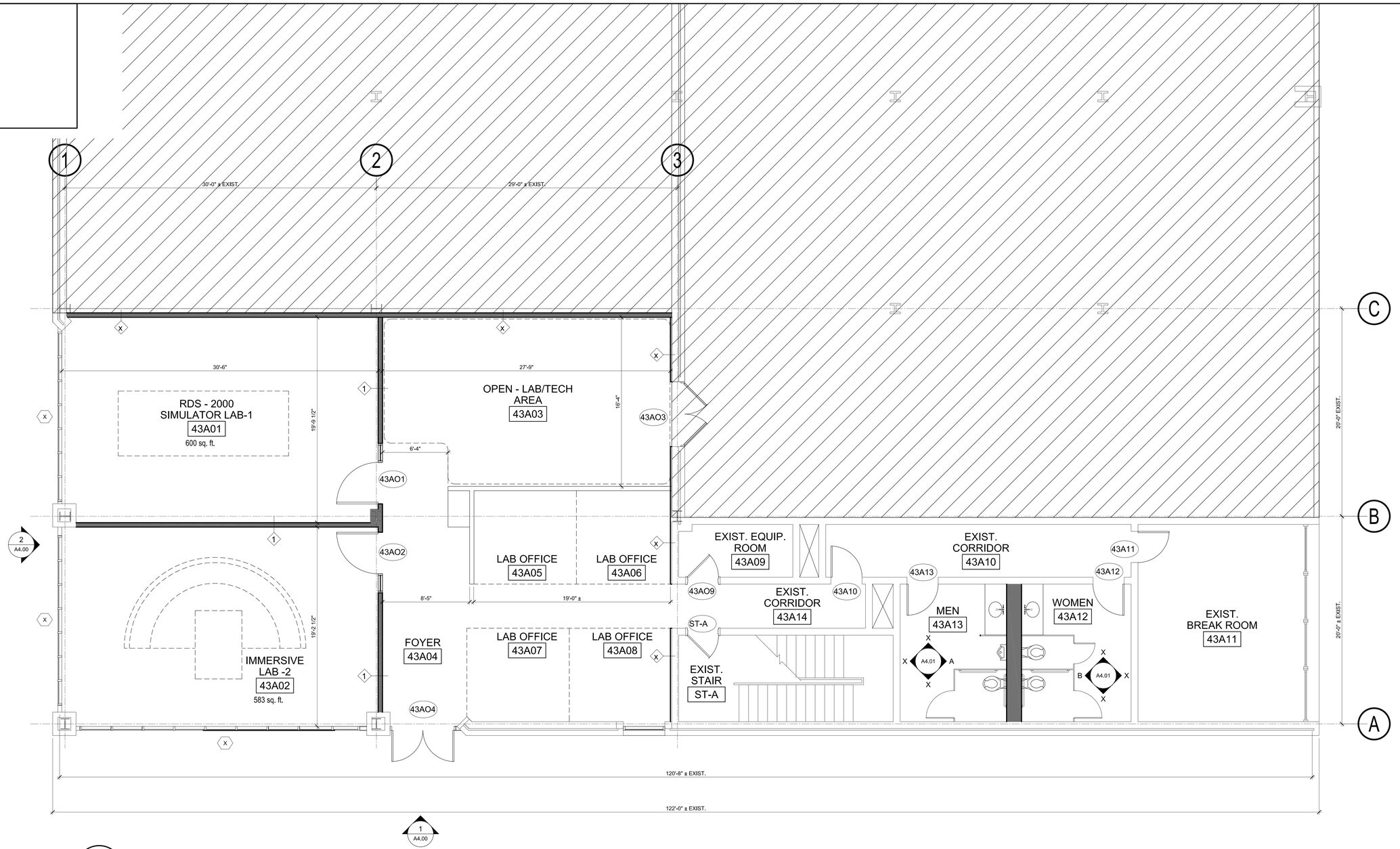


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SCALE : 1/4" = 1' - 0"

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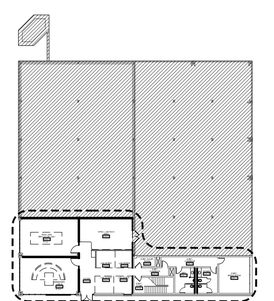
SCALE: 1/4"=1'-0"



KEY PLAN: BUILDING 43 LEVEL A
SCALE: 1 / 32" = 1' - 0"

RENOVATION AREA

0 8' 16' 32' 64' 96'

1/32"=1'-0"

PERMIT STAMP:

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EXP. DATE: XX

PROFESSIONAL STAMP:

DRAWING TITLE

FLOOR PLAN - BUILDING 43 LEVEL A

DRAWN BY: MPMofDC
CHECKED BY: MPMofDC
APPROVED BY: MPMofDC
DATE: X

DRAWING NO.

A1.03

Atertus Panic Buttons - Basis of Design

Alertus Panic Buttons - Basis of Design

| Product Code | Product | Product Description | Line Item Description | Quantity |
|---|---|---|---|---|
| AAB-E-YL | Alert Beacon, Ethernet/PoE, yellow | Includes wall mounting bracket. Backup batteries and power supplies, if needed, are sold separately. | | 21.00 |
| ALR-B-YL-EMER | Alertus Hardwired Duress Button; Yellow - EMERGENCY | Standard yellow in color displaying text "EMERGENCY" top and "ALERTUS" bottom | | 30.00 |
| ALR-W-P-1 | Alertus WiFi Panic Button - Single unit | Discreet, rechargeable Wi-Fi device for location based call for help. Price includes single device | | 5.00 |

# SECTION 281300 UDC INTEGRATED SECURITY MANAGEMENT SYSTEM

## GENERAL

### 1.1 SUMMARY

A. The intent of this document is to specify the minimum criteria for the supply, installation, integration and activation of video surveillance, access control systems and related sub-systems within properties owned, leased and operated by the University of the District of Columbia (UDC).

B. The UDC Integrated Security Management System operates on the Honeywell Pro-Watch, MaxPro, Milestone and Salto platforms.

C. **All work MUST** be coordinated and approved by the UDC Police Department in coordination with UDC's existing security systems integrator. **NOTE: UDC operates a complex, integrated, multi-campus security management system which it relies on to protect its Students, Staff, Visitors and Assets. No individual and/or organization are permitted to conduct work on any portion of the system without authorization from UDC Police Department and review by UDC's security systems integrator. Work conducted without such authorization and review shall be considered an acceptance by the individual and/or organization of all liability regarding security management system performance in the protection of life and property.**

D. **All work MUST be supplied, installed, and programmed by a Honeywell Pro-Watch PLATINUM Certified Systems Integrator. NOTE:** Security Dealer's (to include all Installers and programmers) name must appear on Honeywell Integrated Security Certified Dealer's List. Contractors are subject random on-site compliance inspections by UDC Police. To ensure compliance all integrators/installers must carry proof of ***individual*** certification at all times (on their person).

E. All programming to be coordinated, approved and inspected by UDC's existing security systems integrator or manufacturer. The technician providing programming must hold an active Honeywell Pro-Watch Basic and Advanced Certification, Honeywell MAXPRO VMS Certification, Milestone MCDE & MCIT Certification and Salto Certification.

F. Security integrator must provide verifiable documentation that the above listed experience/certification has been met. The security integrator **MUST** provide verifiable documentation that they have provided similar services within the last three years in a higher education environment, comparable to UDC. Specifically, an environment that has an integrated Pro-Watch (at least version 4.4), Honeywell MAXPRO, Milestone xProtect Expert (at least 2019 R1), and Salto System (at least version 9.2.1.123). **UDC Police will not approve any projects without having the documentation in hand.**

G. All associated cabling must conform to UDC IT Infrastructure Standards and Best Practices. Contact UDC OIT for the most current version of the Standards.

H. Bidder must provide three references from current (or recent within last 3 years) higher education or government customers purchasing similar services. Include

business name, contact name, phone number and description of system installed.

I. Applicable parties should **ALWAYS** request the most recent version of this document from UDC Police Department, as this document will be updated regularly.

J. All work that integrates with an IT component requires authorization from IT, regardless if it is not mentioned in this document. This document is designed to help applicable parties move quickly through the design and install process by following UDC best practices. IT authorization **IS REQUIRED prior to the start of ANY** project regardless of initiating party and also will inspect jobs after completion to verify job was completed satisfactory.

## 1.2 REFERENCES

1. RESERVED

## 1.3 SECURITY MANAGEMENT SYSTEM DESCRIPTION

A. The UDC Integrated Security Management System (UDC-ISMS) functions as an electronic access control system and integrates alarm monitoring, CCTV, ID badging and database management into a single platform.

## 1.4 SUBMITTALS

A. Manufacturer's Product Data: Submit manufacturer's data sheets indicating systems and components proposed for use, **prior to the start of work**.

1. Shop Drawings: Submit complete shop drawings indicating system components, wiring diagrams and load calculations, **prior to start of work and prior to requesting programming of the SMS**. As-built drawings for the SMS and supporting system connections. Supporting systems include electrical for SMS power, Fire Alarm for initiation of electronic door lock release, Door & Door Hardware, Mechanical Systems for operator inter-connections, Data Network for connection of SMS Ethernet devices. SMS Ethernet devices include ProWatch Intelligent Controllers, Network Video Recorders and IP Cameras. As-built drawings are required for programming as they provide the information required for graphical representation of devices, association of related logical devices, and the wiring configuration of all device and supporting system connections. Devices are defined as any SMS or supporting system product and hardware to include but not be limited to controllers, power supplies, computers, network video recorders, cameras, card readers, sensors, relays, punch down/patch panels, and network switches. Without this information programming cannot be provided. All drawings and listed information must be legible, complete, uniform and accurate. As-built drawings at a minimum must include:

a. SMS floor plan Drawings must indicate the physical location of all SMS devices and supporting systems' inter-connections. The SMS floor plan

drawings should be drafted on the project's architectural drawings. The drawings are to indicate building, floor, door numbers, room or area numbers and descriptive names and are to be to scale. Device icons are to be consistent from drawing to drawing and must be accurately identified in the legend. Device icons are to indicate mounting location (wall, ceiling, pole…).

b. Riser Drawings also referred to as Single-line drawings. These drawings are to indicate the specific wiring (cabling) configuration of all SMS devices and supporting system connections. It is critical that this information is accurate as the program will be written based on this information. It shall include all connections, to include but not be limited to, communications, power, data, relay, grounding, and device status. The wiring configuration is to indicate specific terminal to terminal wiring from device to device with the color of each conductor indicated. It shall indicate the type of wire to include AWG (American Wire Gauge), number of conductors, twist and shielding. All relay and device status connections must indicate the configuration such as normally closed or normally open. "Typical" drawings are acceptable as long as they are for identical devices.

B. Record Drawings: During construction maintain record drawings indicating location of equipment and wiring. Submit an electronic version of record drawings for the Security Management System not later than Substantial Completion of the project.

C. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, customized to the Security Management System installed. Include system and operator manuals.

D. Maintenance Service Agreement: Submit a sample copy of the manufacturer's maintenance service agreement, including cost and services for a two year period for Owner's review.

## 1.5 QUALITY ASSURANCE

A. **Installer and Security Integrator must be Platinum certified by Honeywell Integrated Security Dealer Service Certification Program (DSCP).** Platinum certification ensures that the Installer and Security Integrator is Integration Capable and has met the highest standards of technical competence and customer service.

B. **Installer and Security Integrator must be PRO-WATCH Security Management System (SMS) certified by Honeywell Integrated Security. Certification must be evidenced by the full time employment of multiple PRO-WATCH SMS certified technicians (successful completion of manufacturer training).**

C. **Installer and Security Integrator must be MAXPRO Video Management System (PRO-WATCH Video Manager) certified by Honeywell Integrated Security. Certification must be evidenced by the full time employment of multiple MAXPRO VMS certified (successful completion of manufacturer training) technicians.**

D. **Installer and Security Integrator must be Enterprise certified by Honeywell Integrated Security.** Certification must be evidenced by the full time employment of multiple MAXPRO VMS certified (successful completion of manufacturer training) technicians.

E. **Installer and Security Integrator must be MCDE and MCIT certified by Milestone.** Certification must be evidenced by the full time employment of multiple Milestone certified (successful completion of manufacturer training) technicians.

F. **Installer and Security Integrator must be a Salto Trained Inspired Business Partner (TIBP).** TIBP must be evidenced by the full time employment of multiple Salto certified (successful completion of manufacturer training) technicians.

G. **Installer and Security Integrator must also show evidence by the full time employment working in an integrated environment with Pro-Watch & Salto working seamlessly (same as in the University of the District of Columbia).**

H. **It is <u>not permissible</u> to have a Honeywell Platinum Certified integrator/installer to commission the work of non-certified integrators/installers.**

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's labeled packages. Store and handle in accordance with manufacturer's requirements.

## 1.7 WARRANTY

A. Manufacturer's Warranty: Refer to the UDC Contract Documents for requirements.

# PART 2 PRODUCTS

## 2.1 INTEGRATION REQUIREMENTS

A. The UDC-ISMS, herein referred to as System or SMS, and the Sub-systems shall be modular and networkable. The System shall be controlled by UDC's existing Honeywell PRO-WATCH Version 4.4 software (or latest installed version). All work shall be coordinated and approved through the UDC Police Department and UDC's existing security integrator. All work must be supplied, installed and programmed by a Honeywell Integrated Security Platinum Certified Systems Integrator. **This System Integrator must also be certified and manufacturer trained for the following: Assa Abloy Certified IWP Integrator, Honeywell PRO-WATCH SMS, Honeywell MAXPRO VMS, Honeywell Enterprise, Milestone xProtect and Salto**

**Virtual Networked Access Control system integrated as one system.**

B. Any required Security Workstations, Servers, Storage Arrays, Laptops, Touch screens, Network Switches, Racks/Enclosures and UPSs indicated in the drawings or specifications for this project **must be pre-approved by UDC OIT and by UDC's existing Security Systems Integrator**. Pre-approval must be evidenced by a compliance document listing the required technical specifications of each item.

C. Provide products as specified or the most current version, meeting or exceeding the performance requirements, that is released at project award date. **An approved substitution request will still be required to be approved by UDC Police Department**.

1. **UDC's Security Management System includes multiple sub-system integrations and interfaces. These include MAXPRO VMS, Salto, Intrusion Detection & Emergency Notification, Salto, Stentofon, HIS DTU, Milestone, Banner and others. Prospective bidders must provide the respective manufacturer certifications and also document at least 5 other similar installations utilizing ProWatch and the listed sub-systems.**

2. **All projects must include at a minimum a ProWatch High Density Enclosure with Power Supply & 4 hours of battery back-up, a ProWatch 6000 Series Intelligent Controller, a ProWatch 6000 Series Dual-Reader Modules, a ProWatch Daisey Chain Cable and an Altronix AL600ULACM Power Supply & 4 hours of battery back-up, as well as the indicated field components. Utilizing existing capacity is not acceptable as this spare capacity has been planned for system resiliency and redundancy.**

## 2.2 MANUFACTURER

A. Security Management System Manufacturer: Pro-Watch® Security Management Suite by Honeywell, www.honeywellintegrated.com.

## 2.3 SECURITY MANAGEMENT SYSTEM REQUIREMENTS

A. Software Requirements: The Security Management System is a modular and network-enabled access control system. The Security Management System is capable of controlling multiple remote sites, alarm monitoring, video imaging, ID badging, paging, digital video and video switching and control that allows for easy expansion or modification of inputs and remote control stations.

1. Additional card read licenses, camera licenses, additional Pro-Watch CE Client Licenses as well as additional MAXPRO VMS client licenses (as needed to support the installation of new devices or equipment) **shall be provided by the bidder as a part of this project.** In addition to the manufacturer's software support agreement (SSA) for all Pro-Watch licenses and sub-system licenses shall be included for the first year of the system operation. All required programming or licensing shall be coordinated through and provided by UDC's existing security systems integrator.

## 2.4 HARDWARE REQUIREMENTS

### A. INTELLIGENT CONTROLLERS

A. Manufacturers: Subject to compliance with requirements, provide Field Controllers or comparable product by one of the following:

1. Honeywell Security PW-6000
2. Honeywell Security PW-6101ICE

### B. FIELD HARDWARE

A. The security management system shall be equipped with access control field hardware required to receive alarms and administer all access granted/denied decisions. All field hardware shall meet UL requirements.

B. Intelligent Controller Board

1. Honeywell Security PW6K1IC

C. Dual Reader Module (DRM)

1. Honeywell Security PW6K1R2

D. Alarm Input Module (AIM)

1. Honeywell Security PW6K1IN

E. Relay Output Module (ROM)

1. Honeywell Security PW6K1OUT

F. Card Readers

1. Honeywell Security

a. iClass R40SE BLT Mobile Enabled, 13.56MHz Smart Card Reader, Single-gang Mount – READERS TO BE FACTORY ADDRESSED WITH THE UNIQUE UDC MOBILE KEY.

b. iClass R15SE BLT Mobile Enabled, 13.56MHz Smart Card Reader, Mullion Mount - READERS TO BE FACTORY ADDRESSED WITH THE UNIQUE UDC MOBILE KEY.

c. iClass R90SE, 13.56MHz Smart Card Reader, Long Range

2.6 Biometric Readers

A. Suprema Biometrics

B. MorphoTrak

2.7 System Interfaces/Sub-systems

A. Video Management Software & Computer Servers

1. *Description:* Video surveillance management software (referred to as “system” or “VMS”) supporting an unrestricted number of users, devices, servers and sites, with options for high availability, intelligent video walls, central surveillance operations and mobile devices.

2. *System Architecture:* The VMS shall consist of:

a. *Servers:* One or more VMS servers, as approved by UDC Public Safety.

I. Physical or virtualized Windows servers.

II. Virtualized Windows servers, using:

(1) Microsoft Hyper-V.

(2) VMWare.

III. UPS provided to physical servers.

b. *Server Software Components:* One or more Milestone XProtect Expert software components, or software components made by others as noted, per VMS server. Milestone device licenses shall be included and Milestone Care Plus software support shall be included for one year. At a minimum, projects including IP cameras must include additional Recording Server(s) unless determined not required by UDC Public Safety. Servers are to be configured to support 30 days of recording for the specified cameras, at maximum resolution, with the following settings: frame Rate of 10 fps, Scene activity – moderate, 100% recording (24x7).

I. *Management Server:* Central service component of the VMS responsible for handling system configuration, distributing the configuration to other system components, such as Recording Server services, and for facilitating user authentication.

II. *Recording Server:* Service responsible for communications, recording and event handling for all devices (cameras, video and audio encoders, I/O modules, metadata sources, etc.), including:

(1) Retrieving video, audio, metadata and I/O event streams from devices.

(2) Recording video, audio and metadata.

(3) Providing access to live and recorded video, audio and metadata.

(4) Transmit live audio from operator's microphone to one or more camera speakers or supported IP speakers.

(5) Providing access to device status.

(6) Triggering system and video events on device failures, events, etc.

(7) Writes video streams, audio streams and their metadata to a high-performance media database.

(8) Performing motion detection and generate smart search metadata.

III. *Failover Recording Server:* Implementation of Recording Server service designated to take over recording and other tasks should an active Recording Server fail.

(1) Failover Recording Server shall operate in two modes: cold-standby for monitoring multiple Recording Server services and hot-standby for monitoring a single Recording Server.

(2) Both cold- and hot-standby mechanisms shall offer fully automatic and user transparent failover in the event of hardware or system failure, with automatic synchronization of video, audio and metadata at system recovery.

3. *Computer Server Minimum Requirements:* Seneca or Dell servers configured for the specified project are acceptable. Other manufacturers must be approved by UDC Public Safety.

a. *Computer Running Management Server*:

I. *CPU:* Intel® Core™ i3 or better.

II. *RAM:* 8 GB or more.

III. *Network:* Ethernet 100 Mbit or better.

IV. *Graphics Adapter:* Onboard GFX, AGP or PCI-Express, minimum 1024×768, 16-bit color or better.

V. *Hard Disk Space:* 50 GB free or more (depends on number of servers, devices, rules, and logging settings).

VI. *Operating System*:

(1) *For Individual Servers*:

(i) Microsoft Windows 10 Pro (64 bit).

(ii) Microsoft Windows 10 Enterprise (64 bit).

(iii) Microsoft Windows Server 2012 (64 bit): Standard and Datacenter.

(iv) Microsoft Windows Server 2012 R2 (64 bit): Standard and Datacenter.

(v) Microsoft Windows Server 2016 (64 bit): Essentials, Standard and Datacenter.

(2) *To Run Clustering/Failover Management Server*:

(i) Microsoft Windows Server 2012/2012 R2 (64 bit) Standard or Datacenter.

(ii) Microsoft Windows Server 2016 (64 bit) Standard or Datacenter.

VII. *Software*:

(1) Microsoft .NET 3.5 SP1 and .NET 4.7 Framework.

(2) 300 Cameras or less: SQL Server Express Edition.

(3) For larger systems or to support frequent database backups, run a licensed version of Microsoft SQL Server on its own server.

b. *Computer Running Microsoft SQL Server (if not running Microsoft SQL Server Express Edition on Management Server computer)*:

I. *CPU:* Intel® Core™ i3 or better.

II. *RAM:* 8 GB or more.

III. *Network:* Ethernet 100 Mbit or better.

IV. *Graphics Adapter:* Onboard GFX, AGP or PCI-Express, minimum 1024×768, 16-bit color or better.

V. *Hard Disk Space:* 100 GB free or more (depends on number of servers, devices, rules, and logging settings).

VI. *Operating System*:

(1) Microsoft Windows Server 2012 (64 bit): Standard and Datacenter.

(2) Microsoft Windows Server 2012 R2 (64 bit): Standard and Datacenter.

(3) Microsoft Windows Server 2016 (64 bit): Essentials, Standard and Datacenter.

VII. *Software*:

(1) Microsoft .NET 4.7 Framework.

(2) *Microsoft SQL Server*:

(i) Microsoft SQL Server 2012 SP1.

(ii) Microsoft SQL Server 2014.

(iii) Microsoft SQL Server 2016.

c. *Computer Running Recording Server, Failover Recording Server, Event Server, Log Server or Service Channel*:

I. *CPU:* Intel® Core™ i3 or better.

II. *RAM:* 8 GB or more.

III. *Network:* Ethernet 100 Mbit or better.

IV. *Graphics Adapter:* Onboard GFX, AGP or PCI-Express, minimum 1024×768, 16-bit color or better.

V. *Hard Disk Space:* 10 GB free or more (depends on number of devices and recording settings).

VI. *Operating System*:

(1) *For Individual Servers*:

(i) Microsoft Windows 10 Pro (64 bit).

(ii) Microsoft Windows 10 Enterprise (64 bit).

(iii) Microsoft Windows Server 2012 (64 bit): Standard and Datacenter.

(iv) Microsoft Windows Server 2012 R2 (64 bit): Standard and Datacenter.

(v) Microsoft Windows Server 2016 (64 bit): Essentials, Standard and Datacenter.

VII. *Software:* Microsoft .NET 4.7 Framework.

d. *Computer Running Management Client*:

I. *CPU:* Intel® Core™ i3 or better.

II. *RAM:* 4 GB or more.

III. *Network:* Ethernet 100 Mbit or better.

IV. *Graphics Adapter:* Onboard GFX, AGP or PCI-Express, minimum 1024×768, 16-bit color or better.

V. *Hard Disk Space:* 1 GB free or more.

VI. *Operating System*:

(1) Microsoft Windows 10 Pro (64 bit).

(2) Microsoft Windows 10 Enterprise (64 bit).

(3) Microsoft Windows Server 2012 (64 bit): Standard and Datacenter.

(4) Microsoft Windows Server 2012 R2 (64 bit): Standard and Datacenter.

(5) Microsoft Windows Server 2016 (64 bit): Essentials, Standard and Datacenter.

VII. Software:

(1) Microsoft .NET 4.7 Framework.

(2) DirectX 11 or newer.

e. Computer Running XProtect Smart Client or Accessing Remote Client:

I. CPU: Intel® Core™ i3 or better.

II. RAM: 1 GB or more.

III. Network: Ethernet 100 Mbit or better.

IV. Graphics Adapter: Onboard GFX, AGP or PCI-Express, minimum 1024×768, 16-bit color or better.

V. Hard Disk Space: 500 MB free or more.

VI. Operating System:

(1) Microsoft Windows 10 Pro (32- or 64 bit).

(2) Microsoft Windows 10 Enterprise (32- or 64 bit).

(3) Microsoft Windows Server 2012 (64 bit): Standard and Datacenter.

(4) Microsoft Windows Server 2012 R2 (64 bit): Standard and Datacenter.

(5) Microsoft Windows Server 2016 (64 bit): Essentials, Standard and Datacenter.

VII. *Software*:

(1) Microsoft .NET 4.7 Framework.

(2) DirectX 11.0 or newer.

B. IP Cameras

1. To ensure standardization and compatibility cameras shall be manufactured by Axis unless otherwise approved by UDC Public Safety.

2. Unless otherwise specified the following cameras, or most current Axis replacement camera, shall be provided for the listed application. The compatible Axis mount and accessories shall be included for the application.

a. Indoor fixed position dome camera: Axis 3046-V2.4 (4MP)

b. Outdoor fixed position dome camera: Axis 3026-VE (3MP)

c. Indoor 360 degree camera: Axis 3048-P (12MP)

d. Outdoor 360 degree camera: Axis M3058-PLVE (12MP)

e. Outdoor 180 degree camera: Axis P3807-PVE (8MP)

f. PTZ camera: Axis Q6125-LE (2MP)

g. PTZ with 360 degree view: Axis Q6000-E MkII with Q60E

B. Intrusion Detection Panels:

1. Honeywell Vista 128BPT, and Vista 250BPT Controllers

a. All projects including Intrusion Detection must include a Honeywell TUXW Controller. Controller must be configured on the UDC network as indicated by UDC Police.

b. All projects including Intrusion Detection must provide integration with ProWatch for Disarming by entry card reader and arming by a dedicated arming card reader.

C. Intercom Interface:

1. Manufacturer(s) and part numbers:

a. Stentofon/Zenitel Alphacom series intercoms

D. Salto SVN Integration:

1. Manufacturer(s) and part numbers:

b. PWWRDR for locks purchased through Honeywell

c. PWWRDR3P for locks purchased through a 3rd party

2. Pro-Watch Hardware Requirements

a. PW6K1IC Controller

b. Salto Wireless Gateway

c. Salto Wireless HUB

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Examine site conditions to determine site conditions are acceptable without qualifications. Notify UDC in writing if deficiencies are found. Starting work is evidence that site conditions are acceptable.

### 3.2 INSTALLATION

B. Security Management System, including but not limited to access control, alarm monitoring, CCTV and ID badging system shall be installed in accordance with the manufacturer’s installation instructions.

C. Supervise installation to appraise ongoing progress of other trades and contracts, make allowances for all ongoing work, and coordinate the requirements of the installation of the Security Management System.

## 3.3 FIELD TESTING AND CERTIFICATION

1. Conduct a complete inspection and test of all installed access control and security monitoring equipment. This includes testing and verifying connection to equipment of other divisions such as life safety and elevators.

2. Provide staff to test all devices and all operational features of the Security Management System for witness by the Owner's representative and authorities having jurisdiction as applicable.

3. Correct deficiencies until satisfactory results are obtained.

4. Submit written copies of test results

5. **Installer and Security Integrator** are required to obtain sign off from UDC Police Department on all camera views and or access control functionality and operation. **Installer and Security Integrator** must coordinate an appointment to display all video views to the UDC Police representative and make any requested changes to positioning, focal length and focus.

**END OF SECTION 281300**

UDC POLICE DEPARTMENT - SECURITY TECHNOLOGY MATRIX

# UDC POLICE DEPARTMENT - SECURITY TECHNOLOGY MATRIX
## 2021

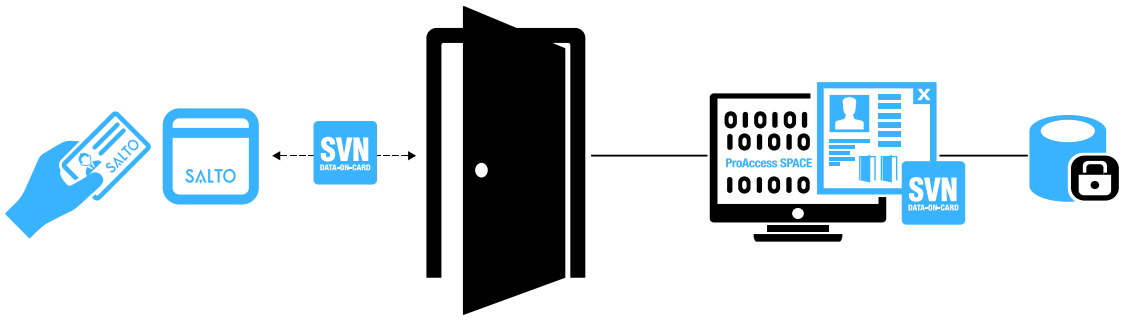
| | ACCESS CONTROL | | | | | | VIDEO | INTRUSION DETECTION | | | | Personal Safety | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Wired (iClass) | | | | | | | | | |
| | KEYED | SALTO | SALTO W/PIN | Standard - Single reader | TWO-FACTOR Authentication w/PIN | TWO-FACTOR Authentication w/Iris Scanner | CCTV | Asset ProtectionSensors | Alarm (Vista/Tuxedo) | Door Contacts - ProWatch | Motion Detection - ProWatch | Panic Device | Emergency Phone |
| Main Suite Entrances | | | | X | | | X | | | X | | | |
| Classroom/Lecture Space | | X | | | | | | X | | | | | |
| Laboratory/Classroom | | X | | | | | | | | | | X | X |
| Laboratory - Storage areas with dangerous elements | | | X | | | | X | X | | | | X | X |
| Office - Single Occupant/user (Long Term) | X | | | | | | | | | | | | |
| Office - Single Occupant/user (Short Term/semester) | | X | | | | | | | | | | | |
| Office - more than one occupant/user | | X | | | | | | | | | | | |
| Meeting Spaces | | X | | | | | X | | | | | | |
| Common Areas/Social Gathering | | | | | | | X | | | | | X | |
| Permiter Doors - Non Egress | | | | | | | X | | | X | | | |
| Perimiter Doors - Egress Only | | | | | | | X | | | X | | | |
| Permiter Doors - Ingress (Main Door/Access) | | | | X | | | X | | | X | | | |
| Perimiter Doors - Ingress (Non Reader) | | | | | | | X | | | X | | | |
| Perimiter Doors - Egress only by public - First Responder Access Override | | | | X | | | X | | | X | | | |
| Mechanical Closet | | | X | | | | | | | | | | |
| Electrical Closet | | | X | | | | | | | | | | |
| Telephone Closet | | | X | | | | | | | | | | |
| IDF | | | X | | | | | | | | | | |
| MDF | | | X | | | | X | | | | | | |
| Fire Control - Closet | | | X | | | | | | | | | | |
| Main Server Room (**DATA CENTER**) | | | | | | X | X | | X | X | | | |
| Elevator Lobbies | | | | | | | X | | | | | X | |
| Stairwells - Landings | | | | | | | X | | | | | X | |
| Common Hallways | | | | | | | X | | | | | X | |
| Cashier/Cash Handling Operations | | | X | | X | | X | | X | X | X | X | |
| University Artwork/large capital asset | | | | | | | X | X | X | | X | | |
| **Salto Note: Hotspots are required for each site using Salto devices.** | | | | | | | | | | | | | |

SALTO VIRTUAL NETWORK (SVN)
WIRE-FREE NETWORKED
ACCESS CONTROL

# SALTO VIRTUAL NETWORK (SVN)
## WIRE-FREE NETWORKED ACCESS CONTROL

The SALTO Virtual Network (SVN) is a data-on-card system based on a patented read/write technology. In SVN all user-related access information is stored on ID credentials which act as credentials. The access rights are updated at hard-wired online IP access points. Optionally, any update can be recorded on the credentials directly at the system manager without any hard-wiring. All other access control products, like electronic escutcheons and cylinders are battery-operated, non-wired offline elements and virtually networked through the credentials. The exchange of information between the credentials and the offline elements is in a two-way communication. For example, a lost or stolen credential is written on credentials and so transmitted in no time to the offline elements. A credential that is listed as lost or stolen is deleted immediately when it is presented at an offline reader which has been informed about the loss. Low battery status of an offline escutcheon/cylinder is written on the valid credentials and transmitted to the system manager through update points.
The exchange of information via RFID credentials is secured and encrypted. SALTO offers all mainstream RFID technologies and allows multi-applications. One single credential can be the access credential and also be used in time and attendance or cashless payment systems.
If required, SALTO SVN can be fitted easily and economically if customers already use an RFID application.

### A ACCESS **AT ONLINE POINT**

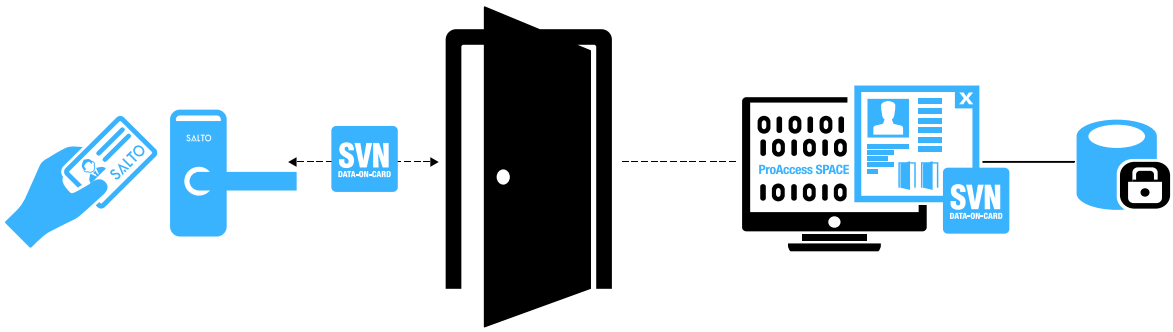



**Card transmits to the system via wall reader:**
- User access event
- Visited door battery status

**Wall reader transmits to card:**
- Deleted card list
- Updated user access rights
- Expiry date renovation

**Functions:**
- Add or delete users remotely
- User profiles updated easily (calendars, shifts ...)
- Dynamic event audit trail
- Remote stand-alone device battery status report
- Expiry date renovation

### B ACCESS **AT OFFLINE POINT**




**Card transmits to cylinder/ escutcheon:**
- Deleted cards list
- User access rights

**Wall reader transmits to card:**
- Access event
- Battery status

**Main benefits of SALTO Virtual Network (SVN)**

- Cost-effective, quick and easy installation as only update points require hard-wiring.
- Control and management of all access points remotely from one or more work stations.
- Available for all mainstream RFID technologies, also multi-applications.
- Extremely secure investment as SALTO SVN can be extended up to 64,000 doors, even on different sites in different countries, if required.
- In the case of a power failure the access control system keeps functioning because of its battery-operated escutcheons and cylinders.

RFID technologies, examples:

**MIFARE DESFire**
**Ultralight C**

NFC

iCLASS by HID

Zurich University of Teacher Education
Image: © Mark Röthlisberger, Hochbauamt Kt. Zürich

# B.6 PRICE BREAKDOWN

## B.6 PRICE BREAKDOWN

B.6.1 The bidder shall complete this breakdown of prices from CLIN B3.001 and submit it with its bid. In case of any discrepancy in the bid price entered here and the lump sum price in B3.001, STAR Biomedical Research Labs, Section B.6.l below shall govern.

| DIVISION NO. * | DESCRIPTION | TOTAL PRICE BREAKDOWN |
|---|---|---|
| Div. 01 | General Requirements | $ |
| Div. 02 | Existing Conditions | $ |
| Div. 03 | Concrete | $ |
| Div. 04 | Masonry | $ |
| Div. 05 | Metals | $ |
| Div. 06 | Wood, Plastic | $ |
| Div. 07 | Thermal and Moisture Protection | $ |
| Div. 08 | Openings | $ |
| Div. 09 | Finishes | $ |
| Div. 10 | Specialties | $ |
| Div. 11 | Equipment | $ |
| Div. 12 | Furnishings | $ |
| Div. 13 | Special Construction | $ |
| Div. 14 | Conveying Systems | $ |
| Div. 21 | Fire Suppression | $ |
| Div. 22 | Plumbing | $ |
| Div. 23 | Heating, Ventilating & Air Conditioning | $ |
| Div. 25 | Integrated Automation | $ |
| Div. 26 | Electrical | $ |
| Div. 27 | Communications | $ |
| Div. 28 | Electronic Safety & Security | $ |
| Div. 31 | Earthworks | $ |
| Div. 32 | Exterior Improvements | $ |
| Div. 33 | Utilities | $ |
| Div. 34 | Transportation | $ |
| Allowance | Signage Package – Fabrication & Install | $ 25,000.00 |
| **Lump Sum Bid Price** | Lump Sum Bid Price | $ |

* Division means a discrete component of the work for which a separate price is requested. The "Total Price Breakdown" is the sum of all components and must equal the Lump Sum Bid Price.

UDC SEAS – School of Engineering and Applied Sciences
Building 32/42/43 100%
Construction Doc.

# SECTION 08 71 13 – AUTOMATIC DOOR OPERATORS

## PART 1 GENERAL

### 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

A. This section includes the following types of automatic door operators:
   1. Low-energy door operators for swinging doors.

B. Related Sections:
   1. Division 7 Sections for caulking to the extent not specified in this section.
   2. Division 8 Sections for “Aluminum-Framed Entrances and Storefronts” for entrances furnished and installed separately in Division 8 Section.
   3. Division 8 Section “Door Hardware” for hardware to the extent not specified in this section.
   4. Division 8 Section “Glazing” for materials and installation requirements of glazing for automatic entrances.
   5. Division 26 and 28 Sections for electrical connections including conduit and wiring for automatic entrance operators and access-control devices.

### 1.3 REFERENCES

A. References: Comply with the version year adopted by the Authority Having Jurisdiction.
   1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
   2. ICC/IBC - International Building Code.
   3. CUL – Approved for use in Canada.
   4. NFPA 70 - National Electrical Code.
   5. NFPA 80 - Fire Doors and Windows.
   6. NFPA 101 - Life Safety Code.
   7. NFPA 105 - Installation of Smoke Door Assemblies.

B. American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA).
   1. ANSI/BHMA A156.19 Standards for Power Assist and Low Energy Power Operated Doors.

C. Underwriters Laboratories (UL).
   1. UL10C – Positive Pressure Fire Tests of Door Assemblies.
   2. UL 325 - Standard for Safety for Door, Drapery, Gate, Louver, and Window Operators and Systems.

D. American Association of Automatic Door Manufacturers (AAADM).

E. American Society for Testing and Materials (ASTM).
   1. ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
   2. ASTM B209 Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.

F. American Architectural Manufacturers Association (AAMA).
   1. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.

G. National Association of Architectural Metal Manufacturers (NAAMM).
   1. Metal Finishes Manual for Architectural Metal Products.

H. International Code Council (IBC).
   1. IBC: International Building Code Building Code.

1.4 DEFINITIONS

A. Activation device: Device that, when actuated, sends an electrical signal to the door operator to initiate the door operation.

B. Monitored Safety Devices: A tested system that works in conjunction with the automatic door control that detects the presence of a person or an object within a zone where contact could occur and provides a signal to stop the movement of the door.

C. AAADM: American Association of Automatic Door Manufacturers.

D. Operating ambient Temperature Range: 5 Degrees F to plus 122 degrees F (minus 15 C to 50 degrees C).

E. For automatic door terminology, refer to ANSI/BHMA A 156.19 for definitions of terms.

1.5 PERFORMANCE REQUIREMENTS

A. General: Provide automatic doors that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturers corresponding systems.

B. Compliance:
   1. ICC/IBC International Building Code
   2. ANSI/BHMA A 156.19 American National Standard for Power Operated Doors Pedestrian Doors.
   3. UL 325 Listed
   4. NFPA 70 National Electrical Code.
   5. NFPA 101 Life Safety Code
   6. CUL Approved for use in Canada
   7. UL Listed Fire Door Operator with Automatic Closer

C. Automatic Door equipment accommodates medium to heavy pedestrian traffic.

D. Opening Force Requirements:
   1. Power-Operated swinging doors shall open with a manual force not to exceed 30 lbf (133N) to set the door in motion and 15 lbf to fully open the door with force applied at 1" (25mm) from the latched edge of the door. The required force to prevent a stopped door from opening or closing shall to exceed 15 lbf (67N) measured 1" (25mm) from the latch edge of the door at any point during the opening or closing.

E. Closing Time:
   1. Door operators shall be field adjustable to close 90 degrees to 10 degrees in 3 seconds or longer per ANSI/BHMA A 156.19 standard.
   2. Door shall be field adjusted to close from 10 degrees to fully closed position in not less than 1.5 seconds.

## 1.6 SUBMITTALS

A. Comply with Division 01 – Submittal Procedures.

B. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles fabrication, operational descriptions and finishes.

C. Shop Drawings: For automatic entrances. Include plans, elevations, sections, details, hardware mounting heights, additional accessories and attachments to other work.

D. Samples: color samples of exposed finish as required.

E. Informational Submittals: Manufacturers product information and applicable sustainability program credits that are available towards a LEED rated product certification.
   1. Credit MR 4.1 and 4.2: Manufacture's or fabricator's certificate indicating percentage of post-consumer recycled content by weight and pre-consumer recycled content by weight for each product specified under this section.

F. Manufacturers Field Reports: Submit manufacturer's field reports from AAADM certified technician of inspection and approval of doors for compliance with ANSI/BHMA A 156.19 after completion of installation.

G. Operating and Maintenance Manuals: Provide manufacturers operating, owners and maintenance manuals for each item specified as required in Division 01, Closeout Submittals.

## 1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: 10 years minimum of documented experience in manufacturing door equipment similar to that indicated within this specification with a proven record of successful service performance. A manufacturer with company certificate issued by AAADM.

B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 5 years documented experience installing and maintenance of units similar in material, design, and extent to that indicated in this specification and whose work has resulted in construction with

a record of successful in-service performance. Manufacturer's authorized representative who is trained and approved for installation and maintenance of units by AAADM required for this Project

C. Source Limitations for Automatic Operators: Obtain each type of automatic door operator and senor components specified in this section from single source from single manufacturer.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Power-Operated Door Standard: ANSI/BHMA A 156.19 Current year.

F. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrances serving as a required means of egress.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings to receive automatic entrances by field measurements before fabrication.

1.9 COORDINATION

A. Coordinate door operators with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish. Coordinate hardware for automatic entrances with hardware required for rest of project.

B. Electrical System Roughing-in: Coordinate layout and installation of automatic power door operator with connections to power supplies and access-control system.

1.10 WARRANTY

A. Automatic Door Operators to be free of defects in material and workmanship for a period of Two (2) years from the date of substantial completion.

B. [Safety Sensors to be free of defects in material and workmanship for a period of One (1) year from the date of substantial completion.]

C. During the warranty period a factory trained technician shall preform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form submitted to the owner.

D. During the warranty period all warranty work shall be performed during normal working hours.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. See Hardware Schedule

2.2 AUTOMATIC SWING DOOR OPERATOR

1. Automatic Door Configuration:
   a. Configuration: Single swing door or pair of doors swinging.
   b. Traffic Pattern: [One-way] [ two-way] [as shown on drawings]
   c. Mounting: Surface applied

B. Control Features

1. Power-hold Close
2. Built in Lock Delay
3. On-Off-Hold Open switch control to control door function, (Automatic-Hold Open-Exit Only)
4. On-Off Power Switch
5. Fire Alarm Integration
6. Field Adjustable Handing
7. Push and Go
8. Power Assist Opening Activation
9. Intergraded Connections for Monitored Safety Sensors and other accessories.
10. Integrated access control

C. Door Control Features

1. Wind Load and Stack Pressure microprocessor monitored with power boost to ensure secure opening and closing in changing conditions.
2. Door Weight Max. [ED 100 220 lbs.] [ED 250 600 lbs.]

D. Header Size: Narrow header at 4” height by 6” depth [optional – Fine header height at 2 ¾” by 5” 1/8” depth.]

2.3 [ACTIVATION BY SMOKE EVACUATION SYSTEM]

A. General: Provide activation by smoke alarm evacuation. Coordinate other required activation devices and safety devices with door operation and door operator controls.

B. Activation: Smoke evacuation system shall provide activation of the operator by means of a contact point within the door operator to control the opening and closing of the door in the event of an alarm condition. Doors are to be held open until the smoke evacuation system is reset. Door position status integrated within operator and control without additional relays or magnets.

2.4 ACTIVATION DEVICES

A. Activation Device:

1. [Push Plate: Hard wired, [4-3/4 inch square] [6 inch round] stainless steel push plate engraved with "Push to Open" with a handicap logo.]
2. [Push Plate: [Hard wired] [Wireless], 36 inch x 6 inch stainless steel push plate engraved with "Push to Open" with a handicap logo.]
3. [Push Plate: Jamb mounted, hard wired, 1-1/2 inch x 4-3/4 inch, stainless steel push plate switches engraved with "Push to Open" with a handicap logo.]
4. [Push Plate: Radio controlled, 900 MHZ wireless, [4-3/4 inch square] [6 inch round] stainless steel push plate engraved with "Push to Open" with a handicap logo.]

5. [Touchless Wave Plate: [2-3/4 inch x 4-1/2 inch] [4-1/2 inch square] activation senor plate in black. Microwave technology has an adjustable range of 2 inches to 24 inches.]
6. [Access control activator: as selected by architect.]

B. Electrical 115 V AC +/- 10% 50/60 Hz 6.6 A max.

2.5 ALUMINUM FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Anodized Finish:
1. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm.
2. [Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class I, 0.018 mm]
3. [Dark Bronze Anodic Finish: AAMA 611, AA-M12C22A44, Class I, 0.018 mm].
4. [Color Anodic Finish: AAMA 611, AA-M12C22A44, Class I, 0.018 mm]. [To match architects sample]

C. Painted Finish:
1. [Powder coat painted to match architects sample] [Manufactures standard colors]
2. Kynar paint finish with 20 year finish warranty by finisher, [2 coat] [3 coat] [to match architects sample]

D. Clad Finish: Cladding shall be factory finished at manufacturers facility using .36 thick metal cladding panel surface utilizing tesa® 4965 tape. Heat and humidity resistant, the specialized adhesive tape is comprised of a polyester backing coated on both sides with a transparent modified acrylic adhesive and a tensile strength of 20 N/cm. tesa® 4965 is recognized per UL standard 969. UL file: MH 18055.
1. [Stainless Steel with No. 4 Satin Finish]
2. [Stainless Steel with No. 8 Mirror-like Finish]
3. [Bronze with Satin Finish]
4. [Bronze with Polished, Non-directional Finish]
5. [Brass with Satin Finish]
6. [Brass with Polished, Non-directional Finish]

EXECUTION

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames with Installer present, for compliance with requirements for installation tolerances, wall and floor construction and other conditions affecting performance of automatic entrances.

B. Examine roughing in for electrical source power to verify actual locations of wiring connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints.

B. Entrances: Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
   1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
   2. Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.

C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections [including smoke evacuation and/or fire detection system.]

D. Sealants: Comply with requirements specified in Division 07 Section "Joint Sealants" to provide seal between the operator housing and wall surface. installation.

E. Signage: Apply signage on both sides of each door and each sidelight as required by ANSI/BHMA A 156.19

3.3 FIELD QUALITY CONTROL

A. Manufacturer’s representative shall provide technical assistance and guidance for installation of automatic doors.
   1. Factory trained and AAADM certified representative shall test and inspect each automatic door to determine compliance of the installed system to ANSI/BHMA A 156.19

3.4 ADJUSTING

A. Adjust door operators and controls for smooth and safe operation.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by automatic operator installation promptly after installation .

3.6 DEMONSTRATION

A. Engage a factory authorized representative to train Owner's maintenance personnel to adjust, operate, and maintain safe operation of automatic entrances.

END OF SECTION 087113

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