BANCROFT ARCHITECTS + ENGINEERS

TO: **Frederick (Trey) Broome, Healthcare Engineer**

Birmingham VA Healthcare System, 700 19th Street S.

Birmingham, AL 35233

PROJECT NAME: Renovate Wards 2K and 2B

CONTRACT NO: 36C24724C0036

STATION PROJECT NO: 521-24-102

A/E PROJECT NO: 23-135

ADDENDUM NO. 001

ISSUE DATE: 11/06/2026

The following instructions and the listed documents below are hereby modified to be incorporated as part of the contract documents.

SPECIFICATIONS:

1. **02 82 11 – Added all hazardous materials testing report to the specification.**
2. **02 82 11 – revised ACM quantities to be obtained from drawings**
3. **27 13 23i - Communications Optical Fiber Backbone Cabling**
4. **08 71 00 – updated door hardware sets**
5. **00 00 00 – updated table of contents**

DRAWINGS:

1. AF102 FINISH FLOOR PLAN– revised basis of design for the window film on exterior glazing at general sheet notes, note “C”.
2. AE102.2 ENLARGED FLOOR PLAN – revised detail 4/AE102.2 to reference the window fil basis of design on AF102.
3. T001 – Revised General Telecommunications Notes #11.
4. TD102 – Clarified demo keynote #3.
5. T102.1 - Floor plan cutoff slightly overlapping with T102.2 for reference.
6. T102.2 - Clarified CATV riser is existing.

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7. T102.3 - Revised Keynote #2. Added Keynote #5. Clarified sleeve quantities.
8. T102 – Clarified new TBB bonding backbone path and added sleeve quantities.
9. TS102.2 - Remove physical access controls from corridor double door.
10. T411 – Revised Backbone Cabling Diagram. Added port mapping for clarification.
11. T511 – Revised detail 4 sleeve types.
12. T512 – Clarified Typical CATV Riser Detail.
13. AE601 DOOR SCHEDULE AND DETAILS – updated door hardware sets
14. E001 – Revised note 18
15. E002 – Revised for homerun reference.
16. EP001 – Added this drawing for phasing plan.
17. EPD101 – Revised electrical room layout.
18. ED500 – Revised detail 2.
19. EP102A – Revised conduit route.
20. E400 - Added enlarged electrical layout, and revised detail #3 for correct drawing reference.
21. E500 – Revised for added information.
22. E601 – Revised for MCB type.
23. E602 – Revised for MCB type.

END OF ADDENDUM NO. 001

DEPARTMENT OF VETERANS AFFAIRS
VHA MASTER SPECIFICATIONS

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01-01-21

NFPA
SECTION 02 82 11
TRADITIONAL ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 SUMMARY OF THE WORK

A. Contract Documents and Related Requirements: Drawings, general provisions of the contract, including general and supplementary conditions and other Division 01 specifications, shall apply to the work of this section. The contract documents show or describe the work to be done under the contract and related requirements and conditions impacting the project. Related requirements and conditions include applicable codes and regulations, notices and permits, existing site conditions and restrictions on use of the site, requirements for partial owner occupancy during the work, coordination with other work and the phasing of the work. In the event the Asbestos Abatement Contractor discovers a conflict in the contract documents and/or requirements or codes, the conflict must be brought to the immediate attention of the Contracting Officer for resolution. Whenever there is a conflict or overlap in the requirements, the most stringent shall apply. Any actions taken by the Contractor without obtaining guidance from the Contracting Officer shall become the sole risk and responsibility of the Asbestos Abatement Contractor. All costs incurred due to such action are also the responsibility of the Asbestos Abatement Contractor.

B. Extent of Work:

1. Below is a brief description of the estimated quantities of asbestos containing materials to be abated. These quantities are for informational purposes only and are based on the best information available at the time of the specification preparation. The Contractor shall satisfy themselves of the actual quantities to be abated. Nothing in this section may be interpreted as limiting the extent of work otherwise required by this contract and related documents.
2. Removal, clean-up and disposal of asbestos containing materials (ACM) and asbestos/waste contaminated elements or debris in an

appropriate regulated area for the following approximate quantities;**SEE DRAWINGS FOR QUANTITIES.**

( ) linear meters (feet) of <50 mm (2 inches) diameter pipe insulation.

( ) linear meters (feet) of 50 - 150 mm (2 inches - 6 inches) diameter pipe insulation.

( ) linear meters (feet) of >150 mm (6 inches) diameter pipe insulation.

( ) fittings (including saddle blocks) 50 - 150 mm (2 inches - 6 inches) in diameter.

( ) square meters (feet) of boiler/tank insulation.

( ) square meters (feet) of duct insulation.

( ) square meters (feet) of plaster ceiling/wall.

( ) square meters (feet) of drywall and/or drywall joint compound.

( ) square meters (feet) of sprayed or troweled on surfacing . materials

( ) square meters (feet) of miscellaneous material.

( ) cubic meters (feet) of contaminated soil/materials.

( ) other specify

3. Encapsulation of ACM in the following quantities
4. Enclosure of ACM in the following quantities

C. Related Work:

1. Section 07 84 00, FIRESTOPPING
2. Section 02 41 00, DEMOLITION
3. Division 09, FINISHES
4. Division 22, PLUMBING
5. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING
6. Section 22 05 23, GENERAL-DUTY VALVES FOR PLUMBING PIPING
7. Section 22 11 00, FACILITY WATER DISTRIBUTION
8. Section 22 13 00, FACILITY SANITARY AND VENT PIPING SEWERAGE
9. Section 23 05 11, COMMON WORK RESULTS FOR HVAC
10. Section 22 14 00, FACILITY STORM DRAINAGE
11. Section 23 07 11, HVAC AND BOILER PLANT INSULATION
12. Section 23 21 13, HYDRONIC PIPING
13. Section 23 22 13, STEAM AND CONDENSATE HEATING PIPING
14. Section 23 31 00, HVAC DUCTS AND CASINGS

15. Section 23 37 00, AIR OUTLETS AND INLETS

D. Tasks:

1. The work tasks are summarized briefly as follows:
   a. Pre-abatement activities including pre-abatement meeting(s), inspection(s), notifications, permits, submittal approvals, regulated area preparations, emergency procedures arrangements, and standard operating procedures for asbestos abatement work.
   b. Abatement activities including removal, encapsulation , enclosure, clean-up and disposal of ACM waste, recordkeeping, security, monitoring, and inspections.
   c. Cleaning and decontamination activities including final visual inspection, air monitoring and certification of decontamination.

E. Contractors Use of Premises:

2. The Contractor and Contractor's personnel shall cooperate fully with the VA representative/consultant to facilitate efficient use of buildings and areas within buildings. The Contractor shall perform the work in accordance with the VA specifications, drawings, phasing plan and in compliance with any/all applicable Federal, State and Local regulations and requirements.
3. The Contractor shall use the existing facilities in the building strictly within the limits indicated in contract documents as well as the approved VA Design and Construction Procedures. VA Design and Construction Procedures drawings of partially occupied buildings will show the limits of regulated areas; the placement of decontamination facilities; the temporary location of bagged waste ACM; the path of transport to outside the building; and the temporary waste storage area for each building/regulated area. Any variation from the arrangements shown on drawings shall be secured in writing from the VA representative through the pre-abatement plan of action. The following limitations of use shall apply to existing facilities shown on drawings:

1.2 VARIATIONS IN QUANTITY

A. The quantities and locations of ACM as indicated on the drawings and the extent of work included in this section are estimated which are limited by the physical constraints imposed by occupancy of the

buildings and accessibility to ACM. Accordingly, minor variations (+/- 10 percent) in quantities of ACM within the regulated area are considered as having no impact on contract price and time requirements of this contract. Where additional work is required beyond the above variation, the contractor shall provide unit prices for newly discovered ACM and those prices shall be used for additional work required under the contractor.

1.3 STOP ASBESTOS REMOVAL

A. If the Contracting Officer; their field representative; the facility Safety Officer/Manager or their designee, or the VA Professional Industrial Hygienist/Certified Industrial Hygienist (VPIH/CIH) presents a verbal **Stop Asbestos Removal Order**, the Contractor/Personnel shall immediately stop all asbestos removal and maintain HEPA filtered negative pressure air flow in the containment and adequately wet any exposed ACM. If a verbal Stop Asbestos Removal Order is issued, the VA shall follow-up with a written order to the Contractor as soon as it is practicable. The Contractor shall not resume any asbestos removal activity until authorized to do so in writing by the VA Contracting Officer. A stop asbestos removal order may be issued at any time the VA Contracting Officer determines abatement conditions/activities are not within VA specification, regulatory requirements or that an imminent hazard exists to human health or the environment. Work stoppage will continue until conditions have been corrected to the satisfaction of the VA. Standby time and costs for corrective actions will be borne by the Contractor, including the VPIH/CIH time. The occurrence of any of the following events shall be reported immediately by the Contractor's competent person to the VA Contracting Office or field representative using the most expeditious means (e.g., verbal or telephonic), followed up with written notification to the Contracting Officer as soon as practical. The Contractor shall immediately stop asbestos removal/disturbance activities and initiate fiber reduction activities if:

4. Airborne PCM analysis results equal to or greater than 0.01 f/cc above background levels inside the building but outside the regulated area;

5. breach or break in regulated area containment barrier(s);
6. less than –0.02 inch WCG pressure in the regulated area;
7. serious injury/death at the site;
8. fire/safety emergency at the site;
9. respiratory protection system failure;
10. power failure or loss or inadequate use of wetting agent;
11. any visible emissions observed outside the regulated area; or
12. failure to follow project specification requirements.

1.4 DEFINITIONS

A. General: Definitions and explanations here are neither complete nor exclusive of all terms used in the contract documents, but are general for the work to the extent they are not stated more explicitly in another element of the contract documents. Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated therein.

B. Glossary:

Abatement - Procedures to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosure, demolition, and renovation activities related to asbestos containing materials (ACM).

Adequately wet - Sufficiently mixed or penetrated with liquid to prevent the release of particulates. If visible emissions are observed coming from the ACM, then that material has not been adequately wetted.

Aerosol - Solid or liquid particulate suspended in air.

Aggressive method - Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact ACM.

Aggressive air sampling - EPA AHERA defined clearance sampling method using air moving equipment such as fans and leaf blowers to aggressively disturb and maintain in the air residual fibers after abatement.

AHERA - Asbestos Hazard Emergency Response Act. Asbestos regulations for schools issued in 1987.

Aircell - Pipe or duct insulation made of corrugated cardboard which contains asbestos.

Air monitoring - The process of measuring the fiber content of a known volume of air collected over a specified period of time. The NIOSH 7400 Method, Issue 3, Fifth Edition is used to determine the fiber levels in air. For personal samples, area air samples and clearance air testing using Phase Contrast Microscopy (PCM) analysis, the NIOSH Method 7402 (Issue 2, Fourth Edition) can be used when it is necessary to confirm fibers counted by PCM as being asbestos. The AHERA TEM analysis may be used for background, area samples and clearance samples when required by this specification, or at the discretion of the VPIH/CIH as appropriate.

Air sample filter - The filter used to collect fibers which are then counted. The filter is made of mixed cellulose ester (MCE) membrane for PCM (Phase Contrast Microscopy, 25 mm, 3-piece with 2 inches Static Extension Cowl, 0.8 micron pore size) and MCE for TEM (Transmission Electron Microscopy, 25 mm, 3-piece with 2 inches Static Extension Cowl, 0.45 micron pore size).

Amended water - Water to which a surfactant (wetting agent) has been added to increase the penetrating ability of the liquid.

Asbestos - Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated or altered. Asbestos also includes PACM, as defined below.

Asbestos Hazard Abatement Plan (AHAP) - Asbestos work procedures required to be submitted by the contractor before work begins.

Asbestos-containing material (ACM) - Any material containing more than one percent of asbestos.

Asbestos contaminated elements (ACE) - Building elements such as ceilings, walls, lights, or ductwork that are contaminated with asbestos.

Asbestos-contaminated soil (ACS) – Soil found in the work area or in adjacent areas such as crawlspaces or pipe tunnels which is contaminated with asbestos-containing material debris and cannot be easily separated from the material.

Asbestos-containing waste (ACW) material - Asbestos-containing material or asbestos contaminated objects requiring disposal.

Asbestos Project Monitor – Some states require that any person conducting asbestos abatement air sampling, clearance inspections and clearance air sampling be licensed as an asbestos project monitor.

Asbestos waste decontamination facility - A system consisting of drum/bag washing facilities and a temporary storage area for cleaned containers of asbestos waste. Used as the exit for waste and equipment leaving the regulated area. In an emergency, it may be used to evacuate personnel.

Authorized person - Any person authorized by the VA, the Contractor, or government agency and required by work duties to be present in regulated areas.

Authorized visitor - Any person approved by the VA; the contractor; or any government agency representative having jurisdiction over the regulated area (e.g., OSHA, Federal and State EPA).

Barrier - Any surface that isolates the regulated area and inhibits fiber migration from the regulated area.

Containment Barrier - An airtight barrier consisting of walls, floors, and/or ceilings of sealed plastic sheeting which surrounds and seals the outer perimeter of the regulated area.

Critical Barrier - The barrier responsible for isolating the regulated area from adjacent spaces, typically constructed of 2-layers of 6-mil independently installed plastic sheeting (Polyethylene) secured in place at openings such as doors, windows, penetrations or any other opening into the regulated area.

Primary Barrier – Plastic barriers placed over critical barriers and exposed directly to abatement work or to secondary barrier.

Secondary Barrier - Any additional plastic barriers used to isolate and provide protection from debris during abatement work.

Breathing zone - The hemisphere forward of the shoulders with a radius of about 150 - 225 mm (6 - 9 inches) from the worker's nose.

Bridging encapsulant - An encapsulant that forms a layer on the surface of the ACM.

Building/facility owner - The legal entity, including a lessee, which exercises control over management and recordkeeping functions relating to a building and/or facility in which asbestos activities take place.

Bulk testing - The collection and analysis of suspect asbestos containing materials.

Certified Industrial Hygienist (CIH) - A person certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.

Class I asbestos work - Activities involving the removal of Thermal System Insulation (TSI) and surfacing ACM and Presumed Asbestos Containing Material (PACM).

Class II asbestos work - Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.

Clean room/Changing room - An uncontaminated room having facilities for the storage of employee's street clothing and uncontaminated materials and equipment.

Clearance sample - The final air sample taken after all asbestos work has been done and visually inspected. Performed by the VA's professional industrial hygiene consultant/Certified Industrial Hygienist (VPIH/CIH).

Closely resemble - The major workplace conditions which have contributed to the levels of historic asbestos exposure, are no more protective than conditions of the current workplace.

Competent person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor.

Contractor's Professional Industrial Hygienist (CPIH/CIH) - The asbestos abatement contractor's industrial hygienist. The industrial hygienist must meet the qualification requirements of a PIH and may report to a certified industrial hygienist (CIH).

Count - Refers to the fiber count or the average number of fibers greater than five microns in length with a length-to-width (aspect) ratio of at least 3 to 1, per cubic centimeter of air.

Crawlspace – An area which can be found either in or adjacent to the work area. This area has limited access and egress and may contain asbestos materials and/or asbestos contaminated soil.

Decontamination area/unit - An enclosed area adjacent to and connected to the regulated area and consisting of an equipment room, shower room, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

Demolition - The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

Disposal bag - Typically 6-mil thick sift-proof, dustproof, leak-tight container used to package and transport asbestos waste from regulated areas to the approved landfill. Each bag/container must be labeled/marked in accordance with EPA, OSHA and DOT requirements.

Disturbance – Asbestos Operations and Maintenance Activities (OSHA Class III) that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or disposal bag, which shall not exceed 60 inches in length or width.

Drum - A rigid, impermeable container made of cardboard fiber, plastic, or metal which can be sealed in order to be sift-proof, dustproof, and leak-tight.

Employee exposure - The exposure to airborne asbestos that would occur if the employee were not wearing respiratory protection equipment.

Encapsulant - A material that surrounds or embeds asbestos fibers in an adhesive matrix and prevents the release of fibers.

Encapsulation - Treating ACM with an encapsulant.

Enclosure - The construction of an air tight, impermeable, permanent barrier around ACM to control the release of asbestos fibers from the material and also eliminate access to the material.

Equipment room - A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

Fiber - A particulate form of asbestos, 5 microns or longer, with a length to width (aspect) ratio of at least 3 to 1.

Fibers per cubic centimeter (f/cc) - Abbreviation for fibers per cubic centimeter, used to describe the level of asbestos fibers in air.

Filter - Media used in respirators, vacuums, or other machines to remove particulate from air.

Firestopping - Material used to close the open parts of a structure in order to prevent a fire from spreading.

Friable asbestos containing material - Any material containing more than one (1) percent asbestos as determined using the method specified in 40 CFR 763, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Glovebag - Not more than a 60 x 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which materials and tools may be handled.

High efficiency particulate air (HEPA) filter – An ASHRAE MERV 17 filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

HEPA vacuum - Vacuum collection equipment equipped with a HEPA filter system capable of collecting and retaining asbestos fibers.

Homogeneous area - An area of surfacing, thermal system insulation or miscellaneous ACM that is uniform in color, texture and date of application.

HVAC - Heating, Ventilation and Air Conditioning

Industrial hygienist (IH) - A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards. Meets definition requirements of the American Industrial Hygiene Association (AIHA).

Industrial hygienist technician (IH Technician) - A person working under the direction of an IH or CIH who has special training,

experience, certifications and licenses required for the industrial hygiene work assigned. Some states require that an industrial hygienist technician conducting asbestos abatement air sampling, clearance inspection and clearance air sampling be licensed as an asbestos project monitor.

Intact - The ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Lockdown - Applying encapsulant, after a final visual inspection, on all abated surfaces at the conclusion of ACM removal prior to removal of critical barriers.

National Emission Standards for Hazardous Air Pollutants (NESHAP) - EPA's rule to control emissions of asbestos to the environment (40 CFR part 61, Subpart M).

Negative initial exposure assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101 (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PEL or Excursion Limit (EL).

Negative pressure - Air pressure which is lower than the surrounding area, created by exhausting air from a sealed regulated area through HEPA equipped filtration units. OSHA requires maintaining -0.02 inch water column gauge inside the negative pressure enclosure.

Negative pressure respirator - A respirator in which the air pressure inside the facepiece is negative during inhalation relative to the air pressure outside the respirator facepiece.

Non-friable ACM - Material that contains more than 1 percent asbestos but cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Organic vapor cartridge - The type of cartridge used on air purifying respirators to remove organic vapor hazardous air contaminants.

Outside air - The air outside buildings and structures, including, but not limited to, the air under a bridge or in an open ferry dock.

Owner/operator - Any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

Penetrating encapsulant - Encapsulant that is absorbed into the ACM matrix without leaving a surface layer.

Permissible exposure limit (PEL) - The level of exposure OSHA allows for as an eight (8) hour time-weighted average (TWA). For asbestos fibers, the eight (8) hour time-weighted average PEL is 0.1 fibers per cubic centimeter (0.1 f/cc) of air and the 30-minute Excursion Limit (EL) is 1.0 fibers per cubic centimeter (1 f/cc).

Personal protective equipment (PPE) – equipment designed to protect user from injury and/or specific job hazard. Such equipment may include protective clothing, hard hats, safety glasses, fall protection, and respirators.

Personal sampling/monitoring - Representative air samples obtained in the breathing zone for one or more workers within the regulated area using a filter cassette and a calibrated air sampling pump to determine asbestos exposure.

Pipe tunnel – An area, typically located adjacent to mechanical spaces or boiler rooms in which the pipes servicing the heating system in the building are routed to allow the pipes to access heating elements. These areas may contain asbestos pipe insulation, asbestos fittings, debris or asbestos-contaminated soil.

Polarized light microscopy (PLM) - Light microscopy using dispersion staining techniques and refractive indices to identify and quantify the type of asbestos present in a bulk sample.

Polyethylene sheeting - Strong plastic barrier material 4 to 6-mils thick, semi-transparent, flame retardant per NFPA 241.

Positive/negative fit check - A method of verifying the seal of a facepiece respirator by temporarily occluding the filters and breathing in (inhaling) and then temporarily occluding the exhalation valve and breathing out (exhaling) while checking for inward or outward leakage of the respirator, respectively.

Presumed ACM (PACM) - Thermal system insulation, surfacing, and flooring material installed in buildings prior to 1981. If the building owner has actual knowledge, or should have known through the exercise of due diligence that other materials are ACM, they too must be treated as PACM. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 (k)(5).

Professional IH - An IH who meets the definition requirements of AIHA; meets the definition requirements of OSHA as a "Competent Person" at 29 CFR 1926.1101 (b); has completed two specialized EPA approved courses on management and supervision of asbestos abatement projects; has formal training in respiratory protection and waste disposal; and has a minimum of four projects of similar complexity with this project of which at least three projects serving as the supervisory IH. The PIH may be either the VA's PIH (VPIH/CIH) or Contractor's PIH (CPIH/CIH).

Project designer - A person who has successfully completed the training requirements for an asbestos abatement project designer as required by 40 CFR 763 Subpart E, Appendix C, Part I; (B)(5).

Assigned protection factor - A value assigned by OSHA/NIOSH to indicate the expected protection provided by each respirator class, when the respirator is properly selected and worn correctly. The number indicates the reduction of exposure level from outside to inside the respirator facepiece.

Qualitative fit test (QLFT) - A fit test using a challenge material that can be sensed by the wearer if leakage in the respirator occurs.

Quantitative fit test (QNFT) - A fit test using a challenge material which is quantified outside and inside the respirator thus allowing the determination of the actual fit factor.

Regulated area - An area established by the employer to demarcate where Class I, II, III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work may accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the PEL.

Regulated ACM (RACM) - Friable ACM; Category I non-friable ACM that has become friable; Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or; Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of the demolition or renovation operation.

Removal - All operations where ACM, PACM and/or RACM is taken out or stripped from structures or substrates, including demolition operations.

Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of asbestos from a facility component which does not involve demolition activity.

Repair - Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.

Shower room - The portion of the PDF where personnel shower before leaving the regulated area.

Supplied air respirator (SAR) - A respiratory protection system that supplies minimum Grade D respirable air per ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-2018.

Surfacing ACM - A material containing more than 1 percent asbestos that is sprayed, troweled on or otherwise applied to surfaces for acoustical, decorative, fireproofing and other purposes.

Surfactant - A chemical added to water to decrease water's surface tension thus making it more penetrating into ACM.

Thermal system ACM - A material containing more than 1 percent asbestos applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

Transmission electron microscopy (TEM) - A microscopy method that can identify and count asbestos fibers.

VA Professional Industrial Hygienist (VPIH/CIH) – The Department of Veterans Affairs Professional Industrial Hygienist must meet the qualifications of a PIH, and may report to a Certified Industrial Hygienist (CIH).

VA Representative - The VA official responsible for on-going project work.

VA Total – means a building or substantial part of the building is completely removed, torn or knocked down, bulldozed, flattened, or razed, including removal of building debris.

Visible emissions - Any emissions, which are visually detectable without the aid of instruments, coming from ACM/PACM/RACM/ACS or ACM waste material.

Waste/Equipment decontamination facility (W/EDF) – The area in which equipment is decontaminated before removal from the regulated area.

Waste generator - Any owner or operator whose act or process produces asbestos-containing waste material.

Waste shipment record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

Wet cleaning - The process of thoroughly eliminating, by wet methods, any asbestos contamination from surfaces or objects.

C. Referenced Standards Organizations: See Section 01 42 19 REFERENCED STANDARDS.

1.5 APPLICABLE CODES AND REGULATIONS

A. General Applicability of Codes, Regulations, and Standards:

1. All work under this contract shall be done in strict accordance with all applicable Federal, State, and Local regulations, standards and codes governing asbestos abatement, and any other trade work done in conjunction with the abatement. All applicable codes, regulations and standards are adopted into this specification and will have the same force and effect as this specification.
2. The most recent edition of any relevant regulation, standard, document or code shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirement(s) shall be utilized.
3. Copies of all standards, regulations, codes and other applicable documents, including this specification and those listed in Section 1.5 shall be available at the worksite in the clean change area of the worker decontamination system and/or the Contractor’s on-site Field Office. These standards, regulations, codes and other applicable documents, including this specification and those listed in Section 1.5 may be made available electronically.

B. Asbestos Abatement Contractor Responsibility: The Asbestos Abatement Contractor (Contractor) shall assume full responsibility and liability for compliance with all applicable Federal, State and Local regulations related to any and all aspects of the asbestos abatement project. The Contractor is responsible for providing and maintaining training, accreditations, medical exams, medical records, personal protective equipment (PPE), respiratory protection, and respirator fit testing, as required by applicable Federal, State and Local regulations. The

Contractor shall hold the VA and VPIH/CIH consultants harmless for any Contractor's failure to comply with any applicable work, packaging, transporting, disposal, safety, health, or environmental requirement on the part of himself, his employees, or his subcontractors. The Contractor will incur all costs of the CPIH/CIH, including all sampling/analytical costs to assure compliance with OSHA/EPA/State/Local requirements related to failure to comply with the regulations applicable to the work.

C. Federal Requirements:

1. Federal requirements which govern asbestos abatement include, but are not limited to, the following regulations:
   a. Occupational Safety and Health Administration **(OSHA)**
      1) Title 29 CFR 1926.1101 - Construction Standard for Asbestos
      2) Title 29 CFR 1926 Subpart E - Personal Protective Equipment and Life Saving Equipment
      3) Title 29 CFR 1910.134 - Respiratory Protection
      4) Title 29 CFR 1926 - Construction Industry Standards
      5) Title 29 CFR 1926.33 - Access to Employee Exposure and Medical Records
      6) Title 29 CFR 1926.59 same as 1910.1200 - Hazard Communication
      7) Title 29 CFR 1926 Subpart C – General Safety and Health Provisions and Subpart D – Occupational Health and Environmental Controls
   b. Environmental Protection Agency **(EPA):**
      1) 40 CFR 61 Subpart M - National Emission Standard for Hazardous Air Pollutants - Asbestos.
      2) 40 CFR 763 - Asbestos Hazard Emergency Response Act (AHERA) and Asbestos Hazard Abatement Reauthorization Act (ASHARA)
   c. Department of Transportation **(DOT)**
      1) Title 49 CFR 171 - 180 – Transportation

D. State Requirements:

1. State requirements that apply to the asbestos abatement work, disposal, clearance, etc., include, but are not limited to, the following:

E. Local Requirements:

1. If local requirements are more stringent than federal or state standards, the local standards are to be followed.

F. Standards:
   1. Standards which govern asbestos abatement activities include, but are not limited to, the following:
      a. American National Standards Institute (ANSI)/ASSP Z9.2-2018 - Fundamentals Governing the Design and Operation of Local Exhaust Systems and ANSI/ASSE Z88.2-2015 - Practices for Respiratory Protection.
      b. Underwriters Laboratories (UL) 586-2009 - UL Standard for Safety of HEPA Filter Units, 9th Edition; ANSI Approval 2017-12-19.
   2. Standards which govern encapsulation work include, but are not limited to the following:
      a. American Society for Testing and Materials International (ASTM)
   3. Standards which govern the fire and safety concerns in abatement work include, but are not limited to, the following:
      a. National Fire Protection Association (NFPA) 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.
      b. NFPA 701 - Standard Methods for Fire Tests for Flame Resistant Textiles and Film.
      c. NFPA 101 - Life Safety Code

G. EPA Guidance Documents:
   1. EPA guidance documents which discuss asbestos abatement work activities are listed below. These documents are made part of this section by reference.
   2. Guidance for Controlling ACM in Buildings (Purple Book) EPA 560/5-85-024
   3. Asbestos Waste Management Guidance EPA 530-SW-85-007
   4. A Guide to Respiratory Protection for the Asbestos Abatement Industry EPA-560-OPTS-86-001
   5. Guide to Managing Asbestos in Place (Green Book) TS 799 20T July 1990

H. Notices:
   1. State and Local agencies: Send written notification as required by State and Local regulations prior to beginning any work on ACM as follows:

2. Copies of notifications shall be submitted to the VA for the facility's records in the same time frame notification are given to EPA, State, and Local authorities.

I. Permits/Licenses: The contractor shall apply for and have all required permits and licenses to perform asbestos abatement work as required by Federal, State, and Local regulations.

J. Posting and Filing of Regulations: Maintain two (2) copies of applicable Federal, State, and Local regulations. Post one copy of each in the clean room at the regulated area where workers will have daily access to the regulations and keep another hard copy or electronic copy in the Contractor's office.

K. VA Responsibilities prior to commencement of work:

1. Notify occupants adjacent to regulated areas of project dates and requirements for relocation, if needed. Arrangements must be made prior to starting work for relocation of desks, files, equipment, and personal possessions to avoid unauthorized access into the regulated area. **Note: Notification of adjacent personnel is required by OSHA in 29 CFR 1926.1101 (k) to prevent unnecessary or unauthorized access to the regulated area.**
2. Submit to the Contractor results of background air sampling; including location of samples, person who collected the samples, equipment utilized, calibration data and method of analysis. During abatement, submit to the Contractor, results of bulk material analysis and air sampling data collected during the course of the abatement. This information shall not release the Contractor from any responsibility for OSHA compliance.

L. Emergency Action Plan and Arrangements:

1. An Emergency Action Plan shall be developed prior to commencing abatement activities and shall be agreed to by the Contractor and the VA. The Plan shall meet the requirements of 29 CFR 1926, Subpart C, Standard 1926.35 Employee Emergency Action Plans.
2. Emergency procedures shall be in written form and prominently posted in the clean room and equipment room of the decontamination unit. Everyone, prior to entering the regulated area, must read and sign

these procedures to acknowledge understanding of the regulated area layout, location of emergency exits and emergency procedures.

3. Emergency planning shall include written notification of police, fire, and emergency medical personnel of planned abatement activities; work schedule; layout of regulated area; and access to the regulated area, particularly barriers that may affect response capabilities.
4. Emergency planning shall include consideration of fire, explosion, hazardous atmospheres, electrical hazards, slips/trips and falls, confined spaces, and heat stress illness. Written procedures for response to emergency situations shall be developed and employee training in procedures shall be provided.
5. Employees shall be trained in regulated area/site evacuation procedures in the event of workplace emergencies.
   a. For non-life-threatening situations - employees injured or otherwise incapacitated shall be decontaminated following normal procedures with assistance from fellow workers, if necessary, before exiting the regulated area to obtain proper medical treatment.
   b. For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, medical personnel shall remove them from the regulated area if back or neck injury is present, and secure proper medical treatment.
6. Telephone numbers of any/all emergency response personnel shall be prominently posted in the clean room, along with the location of the nearest telephone.
7. The Contractor shall provide verification of first aid/CPR training for personnel responsible for providing first aid/CPR. OSHA requires medical assistance within 3-4 minutes of a life-threatening injury/illness. Bloodborne Pathogen training shall also be verified for those personnel required to provide first aid/CPR.
8. The Emergency Action Plan shall provide for a Contingency Plan in the event that an incident occurs that may require the modification of the standard operating procedures during abatement. Such incidents include, but are not limited to, fire; accident; power

failure; negative pressure failure; and supplied air system failure. The Contractor shall detail procedures to be followed in the event of an incident assuring that asbestos abatement work is stopped and wetting is continued until correction of the problem.

M. Pre-Construction Meeting:

1. Prior to commencing the work, the Contractor shall meet with the VA Certified Industrial Hygienist (VPIH/CIH) to present and review, as appropriate, the items following this paragraph. The Contractor's Competent Person(s) who will be on-site shall participate in the pre-start meeting. The pre-start meeting is to discuss and determine procedures to be used during the project. At this meeting, the Contractor shall provide:

   a. Proof of Contractor licensing.
   b. Proof the Competent Person(s) is trained and accredited and approved for working in this State. Verification of the experience of the Competent Person(s) shall also be presented.
   c. A list of all workers who will participate in the project, including experience and verification of training and accreditation.
   d. A list of and verification of training for all personnel who have current first-aid/CPR training. A minimum of one person per shift must have adequate training.
   e. Current medical written opinions for all personnel working on-site meeting the requirements of 29 CFR 1926.1101 (m).
   f. Current fit-tests for all personnel wearing respirators on-site meeting the requirements of 29 CFR 1926.1101 (h) and Appendix C.
   g. A copy of the Contractor's Asbestos Hazard Abatement Plan. In these procedures, the following information must be detailed, specific for this project.
      1) Regulated area preparation procedures;
      2) Notification requirements procedure of Contractor as required in 29 CFR 1926.1101 (d) Multi-Employer Worksites;
      3) Decontamination area set-up/layout and decontamination procedures for employees;
      4) Abatement methods/procedures and equipment to be used;
      5) Personal protective equipment to be used.

h. At this meeting the Contractor shall provide all submittals as required.

i. Procedures for handling, packaging and disposal of asbestos waste.

j. Emergency Action Plan and Contingency Plan Procedures.

1.6 PROJECT COORDINATION

A. The following are the minimum administrative and supervisory personnel necessary for coordination of the work.

1. Personnel:

a. Administrative and supervisory personnel shall consist of a qualified Competent Person(s) as defined by OSHA in the Construction Standards and the Asbestos Construction Standard; Contractor Professional Industrial Hygienist and Industrial Hygiene Technicians. These employees are the Contractor's representatives responsible for compliance with these specifications and all other applicable requirements.

b. Non-supervisory personnel shall consist of an adequate number of qualified personnel to meet the schedule requirements of the project. Personnel shall meet required qualifications. Personnel utilized on-site shall be pre-approved by the VA representative. A request for approval shall be submitted for any person to be employed during the project giving the person's name; last four digits of social security number; qualifications; accreditation card with color picture, if required by state; Certificate of Worker's Acknowledgment; and Affidavit of Medical Surveillance and Respiratory Protection and current Respirator Fit Test.

c. Minimum qualifications for Contractor and assigned personnel are:

1) The Contractor has conducted within the last three (3) years, three (3) projects of similar complexity and dollar value as this project; has not been cited and penalized for serious violations of Federal (and State or Local as applicable) EPA and OSHA asbestos regulations in the past three (3) years; has adequate liability/occurrence insurance for asbestos work as required by the state; is licensed in applicable state; has adequate and qualified personnel available to complete the work; has comprehensive standard operating procedures for

asbestos work; has adequate materials, equipment and supplies to perform the work.

2) The Competent Person has four (4) years of abatement experience of which two (2) years were as the Competent Person on the project; meets the OSHA definition of a Competent Person; has been the Competent Person on two (2) projects of similar size and complexity as this project within the past three (3) years; has completed EPA AHERA/OSHA/State/Local training requirements/accreditation(s) and refreshers; and has all required OSHA documentation related to medical and respiratory protection.

3) The Contractor Professional Industrial Hygienist/CIH (CPIH/CIH) shall have five (5) years of monitoring experience and supervision of asbestos abatement projects; has participated as senior IH on five (5) abatement projects, three (3) of which are similar in size and complexity as this project; has specialized EPA AHERA/OSHA training in asbestos abatement management, respiratory protection, waste disposal and asbestos inspection; has completed the NIOSH 582 Course or equivalent, Contractor/Supervisor course; and has appropriate medical/respiratory protection records/documentation.

4) The Abatement Personnel shall have completed the EPA AHERA/OSHA abatement worker course; have training on the standard operating procedures of the Contractor; has one year of asbestos abatement experience within the past three (3) years of similar size and complexity; has applicable medical and respiratory protection documentation; has certificate of training/current refresher and State accreditation/license.

d. All personnel shall be in compliance with OSHA construction safety training as applicable and submit certification.

1.7 RESPIRATORY PROTECTION

A. General - Respiratory Protection Program: The Contractor shall develop and implement a written Respiratory Protection Program (RPP) which is in compliance with OSHA requirements found at 29 CFR 1926.1101 and 29 CFR 1910.134. ANSI Standard Z88.2-2015 provides excellent guidance for

developing a respiratory protection program. All respirators used must be NIOSH approved for asbestos abatement activities. The written RPP shall, at a minimum, contain the basic requirements found at 29 CFR 1910.134 (c) - Respiratory Protection Program.

B. Respiratory Protection Program Coordinator: The Respiratory Protection Program Coordinator (RPPC) must be identified and shall have two (2) years of experience coordinating RPP of similar size and complexity. The RPPC must submit a signed statement attesting to the fact that the program meets the above requirements.

C. Selection and Use of Respirators: The procedure for the selection and use of respirators must be submitted to the VA as part of the Contractor's qualifications. The procedure must be written clearly enough for workers to understand. A copy of the Respiratory Protection Program must be available in the clean room of the decontamination unit or in the onsite Contractor’s office, for reference by employees or authorized visitors.

D. Minimum Respiratory Protection: Shall be a ½-mask negative pressure air purifying respirator equipped with P100 filters, provided personal air samples in the workplace remain at or below 0.1 f/cc, determined as an 8-hour TWA. Full face powered air purifying respirator equipped with P100 filters shall be required until Contractor demonstrates that personal air samples are at or below 0.1 f/cc, determined as an 8-hour TWA. A higher level of respiratory protection shall be required, if fiber levels exceed 1 f/cc as an 8-hour TWA, inside the regulated work area. Respirator selection shall meet the requirements of 29 CFR 1926.1101 (h) and 29 CFR 1910.134 (d)(3)(i)(A) Table 1, except as indicated in this paragraph. Abatement personnel must have a respirator for their exclusive use.

E. Medical Written Opinion: No employee shall be allowed to wear a respirator unless a physician or other licensed health care professional has provided a written determination they are medically qualified to wear the class of respirator to be used on the project while wearing whole body impermeable garments and subjected to heat or cold stress.

F. Respirator Fit Test: All personnel wearing respirators shall have a current qualitative/quantitative fit test which was conducted in

accordance with 29 CFR 1910.134 (f) and Appendix A. Quantitative fit tests shall be done for PAPRs which have been put into a motor/blower failure mode.

G. Respirator Fit Check: The Competent Person shall assure that the positive/negative pressure user seal check is done each time the respirator is donned by an employee. Head coverings must cover respirator head straps. Any situation that prevents an effective facepiece to face seal as evidenced by failure of a user seal check shall preclude that person from entering the regulated area until resolution of the problem.

H. Maintenance and Care of Respirators: The Respiratory Protection Program Coordinator shall submit evidence and documentation showing compliance with 29 CFR 1910.134 (h) Maintenance and Care of Respirators.

I. Supplied Air Systems: If a supplied air system is used, the system shall meet all requirements of 29 CFR 1910.134 and the ANSI/Compressed Gas Association (CGA) Commodity Specification for Air current requirements for Type 1 - Grade D breathing air. Low pressure systems are not allowed to be used on asbestos abatement projects. Supplied Air respirator use shall be in accordance with EPA/NIOSH publication EPA-560-OPTS-86-001 "A Guide to Respiratory Protection for the Asbestos Abatement Industry". The competent person on site will be responsible for the supplied air system to ensure the safety of the worker.

1.8 WORKER PROTECTION

A. Training of Abatement Personnel: Prior to beginning any abatement activity, all personnel shall be trained in accordance with OSHA 29 CFR 1926.1101 (k)(9) and any additional State/Local requirements. Training must include, at a minimum, the elements listed at 29 CFR 1926.1101 (k)(9)(viii). Training shall have been conducted by a third party, EPA/State approved trainer meeting the requirements of EPA 40 CFR 763 Appendix C (AHERA MAP). Initial training certificates and current refresher and accreditation proof must be submitted for each person working at the site.

B. Medical Examinations: Medical examinations meeting the requirements of 29 CFR 1926.1101 (m) shall be provided for all personnel working in the regulated area, regardless of exposure levels. A current physician's written opinion as required by 29 CFR 1926.1101 (m)(4) shall be

provided for each person and shall include in the medical opinion that the person has been evaluated for working in a heat and cold stress environment while wearing personal protective equipment (PPE) and is able to perform the work without risk of material health impairment.

C. Regulated Area Entry Procedure: The Competent Person shall ensure that each time workers enter the regulated area; they remove ALL street clothes in the clean room of the decontamination unit and put on new disposable coveralls, head coverings, a clean respirator, and then proceed through the shower room to the equipment room where they put on non-disposable required personal protective equipment.

D. Decontamination Procedure: The Competent Person shall require all personnel to adhere to following decontamination procedures whenever they leave the regulated area.

1. When exiting the regulated area, remove disposable coveralls, and ALL other clothes, disposable head coverings, and foot coverings or boots in the equipment room.
2. Still wearing the respirator and completely naked, proceed to the shower. Showering is MANDATORY. Care must be taken to follow reasonable procedures in removing the respirator to avoid inhaling asbestos fibers while showering. The following procedure is required as a minimum:
   a. Thoroughly wet body including hair and face. If using a PAPR hold blower above head to keep filters dry.
   b. With respirator still in place, thoroughly decontaminate body, hair, respirator face piece, and all other parts of the respirator except the blower and battery pack on a PAPR. Pay particular attention to cleaning the seal between the face and respirator facepiece and under the respirator straps.
   c. Take a deep breath, hold it and/or exhale slowly, completely wetting hair, face, and respirator. While still holding breath, remove the respirator and hold it away from the face before starting to breathe.
3. Carefully decontaminate the facepiece of the respirator inside and out. If using a PAPR, shut down using the following sequence: a) first cap inlets to filters; b) turn blower off to keep debris collected on the inlet side of the filter from dislodging and

contaminating the outside of the unit; c) thoroughly decontaminate blower and hoses; d) carefully decontaminate battery pack with a wet rag being cautious of getting water in the battery pack thus preventing destruction. **(THIS PROCEDURE IS NOT A SUBSTITUTE FOR RESPIRATOR CLEANING!)**

4. Shower and wash body completely with soap and water. Rinse thoroughly.
5. Rinse shower room walls and floor to drain prior to exiting.
6. Proceed from shower to clean room; dry off and change into street clothes or into new disposable work clothing.

E. Regulated Area Requirements: The Competent Person shall meet all requirements of 29 CFR 1926.1101 (o) and assure that all requirements for regulated areas at 29 CFR 1926.1101 (e) are met. All personnel in the regulated area shall not be allowed to eat, drink, smoke, chew tobacco or gum, apply cosmetics, or in any way interfere with the fit of their respirator.

1.9 DECONTAMINATION FACILITIES

A. Description: Provide each regulated area with separate personnel decontamination facilities (PDF) and waste/equipment decontamination facilities (W/EDF). Ensure that the PDF are the only means of ingress and egress to the regulated area and that all equipment, bagged waste, and other material exit the regulated area only through the W/EDF.

B. General Requirements: All personnel entering or exiting a regulated area must go through the PDF and shall follow the requirements at 29 CFR 1926.1101 (j)(1) and these specifications. All waste, equipment and contaminated materials must exit the regulated area through the W/EDF and be decontaminated in accordance with these specifications. Walls and ceilings of the PDF and W/EDF must be constructed of a minimum of 3 layers of 6-mil opaque fire retardant polyethylene sheeting and be securely attached to existing building components and/or an adequate temporary framework. A minimum of 3 layers of 6-mil poly shall also be used to cover the floor under the PDF and W/EDF units. Construct doors so that they overlap and secure to adjacent surfaces. Weight inner doorway sheets with layers of duct tape or approved equivalent so that they close quickly after release. Put arrows on sheets so they show direction of travel and overlap. If the building adjacent area is

occupied, construct a solid barrier on the occupied side(s) to protect the sheeting and reduce potential for non-authorized personnel entering the regulated area.

C. Temporary Facilities to the PDF and W/EDF: The Competent Person shall provide temporary water service connections to the PDF and W/EDF. Backflow prevention must be provided at the point of connection to the VA system. Water supply must be of adequate pressure and meet requirements of 29 CFR 1910.141(d)(3). Provide adequate temporary overhead electric power with ground fault circuit interruption (GFCI) protection. Provide a sub-panel equipped with GFCI protection for all temporary power in the clean room. Provide adequate lighting to provide a minimum of 50 foot candles in the PDF and W/EDF. Provide temporary heat, if needed, to maintain 70 degrees F throughout the PDF and W/EDF.

D. Personnel Decontamination Facility (PDF): The Competent Person shall provide a PDF consisting of shower room which is contiguous to a clean room and equipment room which is connected to the regulated area. The PDF must be sized to accommodate the number of personnel scheduled for the project. The shower room, located in the center of the PDF, shall be fitted with as many portable showers as necessary to insure all employees can complete the entire decontamination procedure within 15 minutes. The PDF shall be constructed of opaque poly for privacy. The PDF shall be constructed to eliminate any parallel routes of egress without showering.

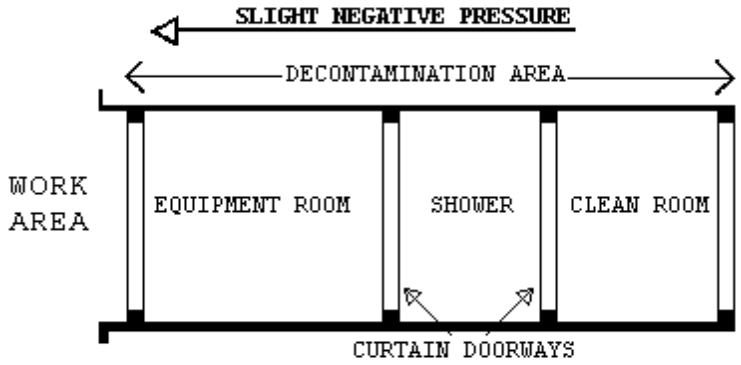
1. Clean Room: The clean room must be physically and visually separated from the rest of the building to protect the privacy of personnel changing clothes. The clean room shall be constructed of at least 3 layers of 6-mil opaque fire retardant poly to provide an air tight room. Provide a minimum of 2 - 900 mm (3 foot) wide 6-mil poly opaque fire retardant doorways. One doorway shall be the entry from outside the PDF and the second doorway shall be to the shower room of the PDF. The floor of the clean room shall be maintained in a clean, dry and sanitary condition. Shower overflow shall not be allowed into the clean room. Provide 1 storage locker per person. A portable fire extinguisher, minimum 10 pounds capacity, Type ABC, shall be provided in accordance with OSHA and NFPA Standard 10. All persons entering the regulated area shall remove all street clothing

in the clean room and dress in disposable protective clothing and respiratory protection. Any person entering the clean room does so either from the outside with street clothing on or is coming from the shower room completely naked and thoroughly washed. Male/Females required to enter the regulated area shall be ensured of their privacy throughout the entry/exit process by posting guards at both entry points to the PDF so no male/female can enter or exit the PDF during his/her stay in the PDF.

2. Shower Room: The Competent Person shall assure that the shower room is a completely water tight compartment to be used for the movement of all personnel from the clean room to the equipment room and for the showering of all personnel going from the equipment room to the clean room. Each shower shall be constructed so water runs down the walls of the shower and into a drip pan. Install a freely draining smooth floor on top of the shower pan. The shower room shall be separated from the rest of the building and from the clean room and equipment room using air tight walls made from at least 3 layers of 6-mil opaque fire retardant poly. The shower shall be equipped with a shower head and controls, hot and cold water, drainage, soap dish and continuous supply of soap, and shall be maintained in a sanitary condition throughout its use. The controls shall be arranged so an individual can shower without assistance. Provide a flexible hose shower head, hose bibs and all other items shown on Shower Schematic. Waste water will be pumped to a drain after being filtered through a minimum of a 100 micron sock in the shower drain; a 20 micron filter; and a final 5 micron filter. Filters will be changed a minimum of daily or more often as needed. Filter changes must be done in the shower to prevent loss of contaminated water. Hose down all shower surfaces after each shift and clean any debris from the shower pan. Residue is to be disposed of as asbestos waste.
3. Equipment Room: The Competent Person shall provide an equipment room which shall be an air tight compartment for the storage of work equipment/tools, reusable personal protective equipment, except for a respirator and for use as a gross decontamination area for personnel exiting the regulated area. The Competent Person shall ensure that most gross contamination is removed from the outside of

PPE, suits and respirators in the regulated work area, prior to entering the Equipment Room. The equipment room shall be separated from the regulated area by a minimum 3 foot wide door made with 2 layers of 6-mil opaque fire retardant poly. The equipment room shall be separated from the regulated area, the shower room and the rest of the building by air tight walls and ceiling constructed of a minimum of 3 layers of 6-mil opaque fire retardant poly. Damp wipe all surfaces of the equipment room after each shift change. Provide an additional loose layer of 6-mil fire retardant poly per shift change and remove this layer after each shift. If needed, provide a temporary electrical sub-panel equipped with GFCI in the equipment room to accommodate any equipment required in the regulated area.

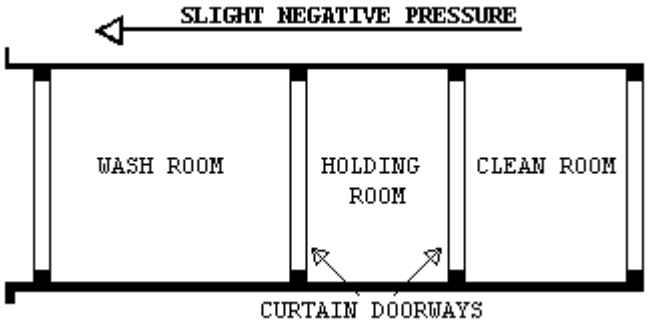
4. The PDF shall be as follows: Clean room at the entrance followed by a shower room followed by an equipment room leading to the regulated area. Each doorway in the PDF shall be a minimum of 2 layers of 6-mil opaque fire retardant poly.



E. Waste/Equipment Decontamination Facility (W/EDF):

1. The Competent Person shall provide a W/EDF consisting of a wash room, holding room, and clean room for removal of waste, equipment and contaminated material from the regulated area. Personnel shall not enter or exit the W/EDF except in the event of an emergency. Clean debris and residue in the W/EDF daily. All surfaces in the W/EDF shall be wiped/hosed down after each shift and all debris shall be cleaned from the shower pan. The W/EDF shall consist of the following:

a. Wash Down Station: Provide an enclosed shower unit in the regulated area just outside the Wash Room as an equipment bag and container cleaning station.
b. Wash Room: Provide a wash room for cleaning of bagged or containerized asbestos containing waste materials passed from the regulated area. Construct the wash room using 50 x 100 mm (2 inches x 4 inches) wood framing or approved equivalent and 3 layers of 6-mil fire retardant poly. Locate the wash room so that packaged materials, after being wiped clean, can be passed to the Holding Room. Doorways in the wash room shall be constructed of 2 layers of 6-mil fire retardant poly.
c. Holding Room: Provide a holding room as a drop location for bagged materials passed from the wash room. Construct the holding room using 50 x 100 mm (2 inches x 4 inches) wood framing or approved equivalent and 3 layers of 6-mil fire retardant poly. The holding room shall be located so that bagged material cannot be passed from the wash room to the clean room unless it goes through the holding room. Doorways in the holding room shall be constructed of 2 layers of 6-mil fire retardant poly.
d. Clean Room: Provide a clean room to isolate the holding room from the exterior of the regulated area. Construct the clean room using 2 inches x 4 inches wood framing or approved equivalent and 2 layers of 6-mil fire retardant poly. The clean room shall be located so as to provide access to the holding room from the building exterior. Doorways to the clean room shall be constructed of 2 layers of 6-mil fire retardant poly. When a negative pressure differential system is used, a rigid enclosure separation between the W/EDF clean room and the adjacent areas shall be provided.
e. The W/EDF shall be as follows: Wash Room leading to a Holding Room followed by a Clean Room leading to outside the regulated area. See diagram.



F. Waste/Equipment Decontamination Procedures: At the washdown station in the regulated area, thoroughly wet clean contaminated equipment and/or sealed polyethylene bags and pass into Wash Room after visual inspection. When passing anything into the Wash Room, close all doorways of the W/EDF, other than the doorway between the washdown station and the Wash Room. Keep all outside personnel clear of the W/EDF. Once inside the Wash Room, wet clean the equipment and/or bags. After cleaning and inspection, pass items into the Holding Room. Close all doorways except the doorway between the Holding Room and the Clean Room. Workers from the Clean Room/Exterior shall enter the Holding Room and remove the decontaminated/cleaned equipment/bags for removal and disposal. At no time shall personnel from the clean side be allowed to enter the Wash Room.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. General Requirements: Prior to the start of work, the contractor shall provide and maintain a sufficient quantity of materials and equipment to assure continuous and efficient work throughout the duration of the project. Work shall not start unless the following items have been delivered to the site and the CPIH/CIH has submitted verification to the VA's representative.

1. All materials shall be delivered in their original package, container or bundle bearing the name of the manufacturer and the brand name (where applicable).
2. Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Flammable and combustible materials cannot be

stored inside buildings. Replacement materials shall be stored outside of the regulated area until abatement is completed.

3. The Contractor shall not block or hinder use of buildings by patients, staff, and visitors to the VA in partially occupied buildings by placing materials/equipment in any unauthorized location.
4. The Competent Person shall inspect for damaged, deteriorating or previously used materials. Such materials shall not be used and shall be removed from the worksite and disposed of properly.
5. Polyethylene sheeting for walls in the regulated area shall be a minimum of 4-mils. For floors and all other uses, sheeting of at least 6-mil shall be used in widths selected to minimize the frequency of joints. Fire retardant poly shall be used throughout.
6. The method of attaching polyethylene sheeting shall be agreed upon in advance by the Contractor and the VA and selected to minimize damage to equipment and surfaces. Method of attachment may include any combination of moisture resistant duct tape, poly tape, furring strips, spray glue, staples, nails, screws, lumber and plywood for enclosures or approved equivalent procedures capable of sealing polyethylene to dissimilar finished or unfinished surfaces under both wet and dry conditions.
7. Polyethylene sheeting utilized for the PDF shall be opaque white or black in color, 6-mil fire retardant poly.
8. Installation and plumbing hardware, showers, hoses, drain pans, sump pumps and waste water filtration system shall be provided by the Contractor.
9. An adequate number of HEPA vacuums, scrapers, sprayers, nylon brushes, brooms, disposable mops, rags, sponges, staple guns, shovels, ladders and scaffolding of suitable height and length as well as meeting OSHA requirements, fall protection devices, water hose to reach all areas in the regulated area, airless spray equipment, and any other tools, materials or equipment required to conduct the abatement project. All electrically operated hand tools, equipment, electric cords shall be connected to GFCI protection.

10. Special protection for objects in the regulated area shall be detailed (e.g., plywood over carpeting or hardwood floors to prevent damage from scaffolds, water and falling material).
11. Disposal bags – 2 layers of 6-mil poly for asbestos waste shall be pre-printed with labels, markings and address as required by OSHA, EPA and DOT regulations.
12. The VA shall be provided an advance copy of the Safety Data Sheets (SDS) as required for all hazardous chemicals under OSHA 29 CFR 1910.1200 - Hazard Communication in the pre-start meeting submittal. Chlorinated compounds shall not be used with any spray adhesive, mastic remover or other product. Appropriate encapsulant(s) shall be provided.
13. OSHA DANGER demarcation signs, as many and as required by OSHA 29 CFR 1926.1101(k)(7) shall be provided and placed by the Competent Person. All other posters and notices required by Federal and State regulations shall be posted in the Clean Room.
14. Adequate and appropriate PPE for the project and number of personnel/shifts shall be provided. All personal protective equipment issued must be based on a written hazard assessment conducted under 29 CFR 1910.132(d).

2.2 MONITORING, INSPECTION AND TESTING

A. General:

1. Perform throughout abatement work monitoring, inspection and testing inside and around the regulated area in accordance with the OSHA requirements and these specifications. OSHA requires that the employee exposure to asbestos must not exceed 0.1 fiber per cubic centimeter (f/cc) of air, averaged over an 8-hour work shift. The CPIH/CIH is responsible for and shall inspect and oversee the performance of the Contractor IH Technician. The IH Technician shall continuously inspect and monitor conditions inside the regulated area to ensure compliance with these specifications. In addition, the CPIH/CIH shall personally manage air sample collection, analysis, and evaluation for personnel, regulated area, and adjacent area samples inside the building, but outside the regulated area. Inside the building, but outside the regulated area air samples shall be collected in the Clean Room of the PDF, at the approximate

location of HEPA exhaust discharge, and at a minimum of three (3) locations in areas immediately outside the regulated work area to satisfy this specification. Additional inspection and testing requirements are also indicated in other parts of this specification.

2. The VA will employ an independent industrial hygienist (VPIH/CIH) consultant and/or use its own IH to perform various services on behalf of the VA. The VPIH/CIH will perform the necessary monitoring, inspection, testing, and other support services to ensure that VA patients, employees, and visitors will not be adversely affected by the abatement work, and that the abatement work proceeds in accordance with these specifications, that the abated areas or abated buildings have been successfully decontaminated. The work of the VPIH/CIH consultant in no way relieves the Contractor from their responsibility to perform the work in accordance with contract/specification requirements, to perform continuous inspection, monitoring and testing for the safety of their employees, and to perform other such services as specified. The cost of the VPIH/CIH and their services will be borne by the VA except for any repeat of final inspection and testing that may be required due to unsatisfactory initial results. Any repeated final inspections and/or testing, if required, will be paid for by the Contractor.
3. If fibers counted by the VPIH/CIH during abatement work, either inside or outside the regulated area, utilizing the NIOSH 7400 air monitoring method, exceed the specified respective limits, the Contractor shall stop work. The Contractor may request confirmation of the results by analysis of the samples by TEM. Request must be in writing and submitted to the VA's representative. Cost for the confirmation of results will be borne by the Contractor for both the collection and analysis of samples and for the time delay that may/does result for this confirmation. Confirmation sampling and analysis will be the responsibility of the CPIH/CIH with review and approval of the VPIH/CIH. An agreement between the CPIH/CIH and the VPIH/CIH shall be reached on the exact details of the confirmation effort, in writing, including such things as the number of samples,

location, collection, quality control on-site, analytical laboratory, interpretation of results and any follow-up actions. This written agreement shall be co-signed by the IH's and delivered to the VA's representative.

B. Scope of Services of the VPIH/CIH Consultant:

1. The purpose of the work of the VPIH/CIH is to: assure quality; adherence to the specification; resolve problems; prevent the spread of contamination beyond the regulated area; and assure clearance at the end of the project. In addition, their work includes performing the final inspection and testing to determine whether the regulated area or building has been adequately decontaminated. All air monitoring is to be done utilizing PCM/TEM. The VPIH/CIH will perform the following tasks:
   a. Task 1: Establish background levels before abatement begins by collecting background samples. Retain samples for possible TEM analysis.
   b. Task 2: Perform representative air monitoring, inspection, and testing outside the regulated area during actual abatement work to detect any faults in the regulated area isolation and any adverse impact on the surroundings from regulated area activities.
   c. Task 3: Perform unannounced visits to spot check overall compliance of work with contract/specifications. These visits may include any inspection, monitoring, and testing inside and outside the regulated area and all aspects of the operation except personnel monitoring.
   d. Task 4: Provide support to the VA representative such as evaluation of submittals from the Contractor, resolution of conflicts, interpret data, etc.
   e. Task 5: Perform, in the presence of the VA representative, final inspection and testing of a decontaminated regulated area at the conclusion of the abatement to certify compliance with all regulations and VA requirements/specifications.
   f. Task 6: Issue certificate of decontamination for each regulated area and project report.

2. All documentation, inspection results and testing results generated by the VPIH/CIH will be available to the Contractor for information and consideration. The Contractor shall cooperate with and support the VPIH/CIH for efficient and smooth performance of their work.
3. The monitoring and inspection results of the VPIH/CIH will be used by the VA to issue any Stop Removal orders to the Contractor during abatement work and to accept or reject a regulated area or building as decontaminated.

C. Monitoring, Inspection and Testing by Contractor CPIH/CIH: The Contractor's CPIH/CIH is responsible for managing all monitoring, inspections, and testing required by these specifications, as well as any and all regulatory requirements adopted by these specifications. The CPIH/CIH is responsible for the continuous monitoring of all subsystems and procedures which could affect the health and safety of the Contractor's personnel. Safety and health conditions and the provision of those conditions inside the regulated area for all persons entering the regulated area is the exclusive responsibility of the Contractor/Competent Person. The person performing the personnel and area air monitoring inside the regulated area shall be an IH Technician, who shall be trained and shall have specialized field experience in sampling and analysis. The IH Technician shall have successfully completed a NIOSH 582 Course or equivalent and provide documentation. The IH Technician shall participate in the AIHA Asbestos Analysis Registry or participate in the Proficiency Analytical Testing program of AIHA for fiber counting quality control assurance. The IH Technician shall also be an accredited EPA AHERA/State Contractor/Supervisor and Building Inspector. The IH Technician shall have participated in five abatement projects collecting personal and area samples and have experience in substantially similar projects in size and scope. The analytical laboratory used by the Contractor to analyze the samples shall be AIHA accredited for asbestos PAT and approved by the VA prior to start of the project. A daily log shall be maintained by the CPIH/CIH or IH Technician, documenting all OSHA requirements for personal and area air monitoring for asbestos in 29 CFR 1926.1101(f), (g) and Appendix A. This log shall be made available to the VA representative and the VPIH/CIH upon request. The log will

contain, at a minimum, information on personnel or area samples, other persons represented by the sample, the date of sample collection, start and stop times for sampling, sample volume, flow rate, and fibers/cc. The CPIH/CIH shall collect and analyze samples for each representative job being done in the regulated area, i.e., removal, wetting, clean-up, and load-out. No fewer than two (2) personal air samples or 25 percent of representative workforce per shift shall be collected, whichever is greater, in the regulated area; a minimum of three (3) area air samples at locations inside the building but immediately outside the regulated work area; one (1) area air sample shall be collected daily in the Clean Room of the PDF; and one (1) area air sample shall be collected daily at the approximate location of HEPA exhaust discharge. In addition to the continuous monitoring required, the CPIH/CIH will perform inspection and testing at the final stages of abatement for each regulated area as specified in the CPIH/CIH responsibilities. Additionally, the CPIH/CIH will monitor and record pressure readings within the containment daily with a minimum of two readings at the beginning and at the end of a shift, and submit the data in the daily report.

2.3 ASBESTOS HAZARD ABATEMENT PLAN

A. The Contractor shall have an established an Asbestos Hazard Abatement Plan (AHAP) in printed form and loose leaf folder consisting of simplified text, diagrams, sketches, and pictures that establish and explain clearly the procedures to be followed during all phases of the work by the Contractor's personnel. The AHAP must be modified as needed to address specific requirements of this project and the specifications. The AHAP shall be submitted for review and approval to the VA prior to the start of any abatement work. The minimum topics and areas to be covered by the AHAPs are:

1. Minimum Personnel Qualifications
2. Emergency Action Plan/Contingency Plans and Arrangements
3. Security and Safety Procedures
4. Respiratory Protection/Personal Protective Equipment Program and Training
5. Medical Surveillance Program and Recordkeeping

6. Regulated Area Requirements - Containment Barriers/Isolation of Regulated Area
7. Decontamination Facilities and Entry/Exit Procedures (PDF and W/EDF)
8. Negative Pressure Systems Requirements
9. Monitoring, Inspections, and Testing
10. Removal Procedures for ACM
11. Removal of Contaminated Soil (if applicable)
12. Encapsulation Procedures for ACM
13. Disposal of ACM waste/equipment
14. Regulated Area Decontamination/Clean-up
15. Regulated Area Visual and Air Clearance
16. Project Completion/Closeout

2.4 SUBMITTALS

A. Pre-Start Meeting Submittals:

1. Submit to the VA a minimum of 14 days prior to the pre-start meeting the following for review and approval. Meeting this requirement is a prerequisite for the pre-start meeting for this project:
   a. Submit a detailed work schedule for the entire project reflecting contract documents and the phasing/schedule requirements from the CPM chart.
   b. Submit a staff organization chart showing all personnel who will be working on the project and their capacity/function. Provide their qualifications, training, accreditations, and licenses, as appropriate. Provide a copy of the "Certificate of Worker's Acknowledgment" and the "Affidavit of Medical Surveillance and Respiratory Protection" for each person.
   c. Submit Asbestos Hazard Abatement Plan developed specifically for this project, incorporating the requirements of the specifications, prepared, signed and dated by the CPIH/CIH.
   d. Submit the specifics of the materials and equipment to be used for this project with manufacturer names, model numbers, performance characteristics, pictures/diagrams, and number available for the following:
      1) Supplied air system, negative air machines, HEPA vacuums, air monitoring pumps, calibration devices, pressure differential monitoring device and emergency power generating system.

2) Waste water filtration system, shower system, containment barriers.
3) Encapsulants, surfactants, hand held sprayers, airless sprayers, glovebags, and fire extinguishers.
4) Respirators, protective clothing, fall protection and other required personal protective equipment.
5) Fire safety equipment to be used in the regulated area.

e. Submit the name, location, and phone number of the approved landfill; proof/verification the landfill is approved for ACM disposal; the landfill's requirements for ACM waste; the type of vehicle to be used for transportation; and name, address, and phone number of subcontractor, if used. Proof of asbestos training for transportation personnel shall be provided.
f. Submit required notifications and arrangements made with regulatory agencies having regulatory jurisdiction and the specific contingency/emergency arrangements made with local health, fire, ambulance, hospital authorities and any other notifications/arrangements.
g. Submit the name, location and verification of the laboratory and/or personnel to be used for analysis of air and/or bulk samples. Personal air monitoring must be done in accordance with OSHA 29 CFR 1926.1101(f) and Appendix A. Area or clearance air monitoring shall be conducted in accordance with EPA AHERA protocols.
h. Submit qualifications verification: Submit the following evidence of qualifications. Make sure that all references are current and verifiable by providing current phone numbers and documentation.
1) Asbestos Abatement Company: Project experience within the past 3 years; listing projects first most similar to this project: Project Name; Type of Abatement; Duration; Cost; Reference Name/Phone Number; Final Clearance; Completion Date
2) List of project(s) halted by owner, A/E, IH, regulatory agency in the last 3 years: Project Name; Reason; Date; Reference Name/Number; Resolution
3) List asbestos regulatory citations (e.g., OSHA), notices of violations (e.g., Federal and state EPA), penalties, and

legal actions taken against the company including the company's officers (including damages paid) in the last 3 years. Provide copies and all information needed for verification.

i. Submit information on personnel: Provide a resume; address each item completely; copies of certificates, accreditations, and licenses. Submit an affidavit signed by the CPIH/CIH stating that all personnel submitted below have medical records in accordance with OSHA 29 CFR 1926.1101(m) and that the company has implemented a medical surveillance program and written respiratory protection program, and maintains recordkeeping in accordance with the above regulation. Submit the phone number and doctor/clinic/hospital used for medical evaluations.

1) CPIH/CIH and IH Technician: Name; years of abatement experience; list of projects similar to this one; certificates, licenses, accreditations for proof of AHERA/OSHA specialized asbestos training; professional affiliations; medical opinion; and current respirator fit test.
2) Competent Person(s)/Supervisor(s): Number; names; last four digits of social security numbers; years of abatement experience as Competent Person/Supervisor; list of similar projects in size/complexity as Competent Person/Supervisor; as a worker; certificates, licenses, accreditations; proof of AHERA/OSHA specialized asbestos training; maximum number of personnel supervised on a project; medical opinion (asbestos surveillance and respirator use); and current respirator fit test.
3) Workers: Numbers; names; last four digits of social security numbers; years of abatement experience; certificates, licenses, accreditations; training courses in asbestos abatement and respiratory protection; medical opinion (asbestos surveillance and respirator use); and current respirator fit test.

j. Submit copies of State license for asbestos abatement; copy of insurance policy, including exclusions with a letter from agent

stating in plain language the coverage provided and the fact that asbestos abatement activities are covered by the policy; copy of AHAPs incorporating the requirements of this specification; information on who provides your training, how often; who provides medical surveillance, how often; who performs and how is personal air monitoring of abatement workers conducted; a list of references of independent laboratories/IH's familiar with your air monitoring and standard operating procedures; and copies of monitoring results of the five referenced projects listed and analytical methods used.

k. Rented equipment must be decontaminated prior to returning to the rental agency.

l. Submit, before the start of work, the manufacturer's technical data for all types of encapsulants, all SDS and application instructions.

B. Submittals During Abatement:

1. The Competent Person shall maintain and submit a daily log at the regulated area documenting the dates and times of the following: purpose, attendees and summary of meetings; all personnel entering/exiting the regulated area; document and discuss the resolution of unusual events such as barrier breeching, equipment failures, emergencies, and any cause for stopping work; and representative air monitoring and results/TWA's/EL's. Submit this information daily to the VA's representative.
2. The CPIH/CIH shall document and maintain the inspection and approval of the regulated area preparation prior to start of work and daily during work.
   a. Removal of any poly barriers.
   b. Visual inspection/testing by the CPIH/CIH or IH Technician prior to application of lockdown encapsulant.
   c. Packaging and removal of ACM waste from regulated area.
   d. Disposal of ACM waste materials; copies of Waste Shipment Records/landfill receipts to the VA's representative on a weekly basis.

C. Submittals at Completion of Abatement: The CPIH/CIH shall submit a project report consisting of the daily log book requirements and

documentation of events during the abatement project including Waste Shipment Records signed by the landfill's agent. It will also include information on the containment and transportation of waste from the containment with applicable Chain of Custody forms. The report shall include a certificate of completion, signed and dated by the CPIH/CIH, in accordance with Attachment #1. All clearance and perimeter area samples must be submitted. The VA representative will retain the abatement report after completion of the project and provide copies of the abatement report to VAMC Office of COR and the Safety Office.

2.5 ENCAPSULANTS

A. Types of Encapsulants:

1. The following four types of encapsulants, if used, must comply with performance requirements as stated in paragraph 2.5.2:
   a. Removal encapsulant - used as a wetting agent to remove ACM.
   b. Bridging encapsulant - provides a tough, durable coating on ACM.
   c. Penetrating encapsulant - penetrates/encapsulates ACM at least 13 mm (1/2 inches).
   d. Lockdown encapsulant - seals microscopic fibers on surfaces after ACM removal.

B. Performance Requirements:

1. Encapsulants shall meet the latest requirements of EPA; shall not contain toxic or hazardous substances; or solvents; and shall comply with the following performance requirements:
   a. General Requirements for all Encapsulants:
      1) ASTM E84: Flame spread of 25; smoke emission of 50.
      2) University of Pittsburgh Protocol: Combustion Toxicity; zero mortality.
      3) ASTM C732: Accelerated Aging Test; Life Expectancy - 20 years.
      4) ASTM E96: Permeability - minimum of 0.4 perms.
   b. Bridging/Penetrating Encapsulants:
      1) ASTM E736: Cohesion/Adhesion Test - 24 kPa (50 pounds/square foot).
      2) ASTM E119: Fire Resistance - 3 hours (Classified by UL for use on fibrous/cementitious fireproofing).

3) ASTM D2794: Gardner Impact Test; Impact Resistance - minimum 11.5 kg-mm (43 in/lb).
4) ASTM D522: Mandrel Bend Test; Flexibility - no rupture or cracking.

c. Lockdown Encapsulants:
1) ASTM E119: Fire resistance - 3 hours (tested with fireproofing over encapsulant applied directly to steel member).
2) ASTM E736: Bond Strength - 48 kPa (100 pounds/square foot) (test compatibility with cementitious and fibrous fireproofing).
3) In certain situations, encapsulants may have to be applied to hot pipes/equipment. The encapsulant must be able to withstand high temperatures without cracking or creating any noxious gaseous or vapors during or after application.

C. Certificates of Compliance: The Contractor shall submit to the VA representative certification from the manufacturer indicating compliance with performance requirements for encapsulants when applied according to manufacturer recommendations.

PART 3 - EXECUTION

3.1 REGULATED AREA PREPARATIONS

A. Site Security:
1. Regulated area access is to be restricted only to authorized, trained/accredited and protected personnel. These may include the Contractor's employees, employees of Subcontractors, VA employees and representatives, State and Local inspectors, and any other designated individuals. A list of authorized personnel shall be established prior to commencing the project and be posted in the clean room of the decontamination unit.
2. Entry into the regulated area by unauthorized individuals shall be reported immediately to the Competent Person by anyone observing the entry. The Competent Person shall immediately require any unauthorized person to leave the regulated area and then notify the VA Contracting Officer or VA Representative using the most expeditious means.

3. A log book shall be maintained in the clean room of the decontamination unit. Anyone who enters the regulated area must record their name, affiliation, time in, and time out for each entry.
4. Access to the regulated area shall be through a single decontamination unit. All other access (doors, windows, hallways, etc.) shall be sealed and demarcated as an asbestos regulated work area to prevent entry to or exit from the regulated area unless in the event of an emergency. The only exceptions for this requirement are the waste/equipment load-out area which shall be sealed except during the removal of containerized asbestos waste from the regulated area, and emergency exits. Emergency exits shall not be locked from the inside; however, they shall be sealed with poly sheeting and taped until needed. In any situation where exposure to high temperatures which may result in a flame hazard, fire retardant poly sheeting must be used.
5. The Contractor's Competent Person shall control site security during abatement operations in order to isolate work in progress and protect adjacent personnel. A 24-hour security system shall be provided at the entrance to the regulated area to assure that all entrants are logged in/out and that only authorized personnel are allowed entrance.
6. The Contractor will have the VA's assistance in notifying adjacent personnel of the presence, location and quantity of ACM in the regulated area and enforcement of restricted access by the VA's employees.
7. The regulated area shall be locked during non-working hours and secured by VA Representative or Competent Person. The VA Police shall be informed of asbestos abatement regulated areas to provide security checks during facility rounds and emergency response.

B. Signage and Power Management:

1. Post OSHA DANGER signs meeting the specifications of OSHA 29 CFR 1926.1101 at any location and approaches to the regulated area. Signs shall be posted at a distance sufficiently far enough away from the regulated area to permit any personnel to read the sign and take the necessary measures to avoid exposure. Additional signs

will be posted following construction of the regulated area enclosure.

2. Shut down and lock out/tag out electric power to the regulated area. Provide temporary power and lighting. Insure safe installation including GFCI of temporary power sources and equipment by compliance with all applicable electrical code and OSHA requirements for temporary electrical systems. Electricity shall be provided by the VA.
3. Shut down and lock out/tag out heating, cooling, and air conditioning system (HVAC) components that are in, supply or pass through the regulated area. Investigate the regulated area and agree on pre-abatement condition with the VA's representative. Seal all intake and exhaust vents in the regulated area with duct tape and 2 layers of independently installed 6-mil poly. Also, seal any seams in system components that pass through the regulated area. Remove all contaminated HVAC system filters and place in labeled 6-mil polyethylene disposal bags for staging and eventual disposal as asbestos waste.

C. Negative Pressure Filtration System:

1. The Contractor shall provide enough HEPA negative air machines to effect $\geq$ - 0.02 inch WCG pressure differential inside the regulated work area. The Competent Person shall determine the number of units needed for the regulated area by dividing the cubic feet in the regulated area by 15 and then dividing that result by the cubic feet per minute (CFM) for each unit to determine the number of units needed to effect $\geq$ - 0.02 inch WCG pressure inside the regulated work area. Provide standby units in the event of machine failure and/or emergency in an adjacent area. HEPA equipped negative air machines shall be discharged outside of the building a minimum of 30 feet from building make-up air, doors, open windows, patients, visitors and staff.
2. NIOSH has done extensive studies and has determined that negative air machines typically operate at ~50 percent efficiency. The contractor shall consider this in their determination of number of units needed to provide $\geq$ - 0.02 inch WCG pressure differential inside the regulated work area. The contractor shall use double the

number of machines, based on their calculations, or submit proof their machines operate at stated capacities, at a 2 inches pressure drop across the filters.

3. Design and Layout:
   a. Before start of work submit the design and layout of the regulated area and the negative air machines. The submittal shall indicate the number of, location of and size of negative air machines. The point(s) of exhaust, air flow within the regulated area, anticipated negative pressure differential, and supporting calculations for sizing shall be provided. In addition, submit the following:
      1) Method of supplying power to the units and designation/location of the panels.
      2) Description of testing method(s) for correct air volume and pressure differential.
      3) If auxiliary power supply is to be provided for the negative air machines, provide a schematic diagram of the power supply and manufacturer's data on the generator and switch.
4. Negative Air Machines (Hepa Units):
   a. Negative Air Machine Cabinet: The cabinet shall be constructed of steel or other durable material capable of withstanding potential damage from rough handling and transportation. The width of the cabinet shall be less than 30 inches in order to fit in standard doorways. The cabinet must be factory sealed to prevent asbestos fibers from being released during use, transport, or maintenance. Any access to and replacement of filters shall be from the inlet end. The unit must be on casters or wheels.
   b. Negative Air Machine Fan: The rating capacity of the fan must indicate the CFM under actual operating conditions. Manufacturer's typically use "free-air" (no resistance) conditions when rating fans. The fan must be a centrifugal type fan.
   c. Negative Air Machine Final Filter: The final filter shall be a HEPA filter. The filter media must be completely sealed on all edges within a structurally rigid frame. The filter shall align with a continuous flexible gasket material in the negative air

machine housing to form an air tight seal. Each HEPA filter shall be certified by the manufacturer to have an efficiency of not less than 99.97 percent. Testing shall have been done in accordance with Military Standard MIL-STD-282 and Army Instruction Manual 136-300-175A. Each filter must bear a UL586 label to indicate ability to perform under specified conditions. Each filter shall be marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.

d. Negative Air Machine Pre-filters: The pre-filters, which protect the final HEPA filter by removing larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. A first stage pre-filter shall be a low efficiency type for particles 10 µm or larger. A second stage pre-filter shall have a medium efficiency effective for particles down to 5 µm or larger. Pre-filters shall be installed either on or in the intake opening of the NAM and the second stage filter must be held in place with a special housing or clamps.
e. Negative Air Machine Instrumentation: Each unit must be equipped with a gauge to measure the pressure drop across the filters and to indicate when filters have become loaded and need to be changed. A table indicating the cfm for various pressure readings on the gauge shall be affixed near the gauge for reference or the reading shall indicate at what point the filters shall be changed, noting cfm delivery. The unit must have an elapsed time meter to show total hours of operation.
f. Negative Air Machine Safety and Warning Devices: An electrical/ mechanical lockout must be provided to prevent the fan from being operated without a HEPA filter. Units must be equipped with an automatic shutdown device to stop the fan in the event of a rupture in the HEPA filter or blockage in the discharge of the fan. Warning lights are required to indicate normal operation; too high a pressure drop across filters; or too low of a pressure drop across filters.
g. Negative Air Machine Electrical: All electrical components shall be approved by the National Electrical Manufacturer's Association

(NEMA) and Underwriters Laboratories (UL). Each unit must be provided with overload protection and the motor, fan, fan housing, and cabinet must be grounded.

h. It is essential that replacement HEPA filters be tested using an "in-line" testing method, to ensure the seal around the periphery was not damaged during replacement. Damage to the outer HEPA filter seal could allow contaminated air to bypass the HEPA filter and be discharged to an inappropriate location. Contractor will provide written documentation of test results for negative air machine units with HEPA filters.

5. Pressure Differential: The fully operational negative air system within the regulated area shall continuously maintain a pressure differential $\geq$ - 0.02 inch WCG inside the regulated work area. Before any disturbance of any asbestos material, this shall be demonstrated to the VA by use of a pressure differential meter/manometer as required by OSHA 29 CFR 1926.1101(g)(5)(i). The Competent Person shall be responsible for providing, maintaining, and documenting the negative pressure and air changes as required by OSHA and this specification.
6. Monitoring: The pressure differential shall be continuously monitored and recorded between the regulated area and the area outside the regulated area with a monitoring device that incorporates a strip chart recorder. The strip chart recorder shall become part of the project log and shall indicate at least $\geq$ - 0.02 inch WCG pressure differential inside the regulated work area for the duration of the project.
7. Auxiliary Generator: If the building is occupied during abatement, provide an auxiliary gasoline/diesel generator located outside the building in an area protected from the weather. In the event of a power failure of the general power grid and the VAMC emergency power grid, the generator must automatically start and supply power to a minimum of 50 percent of the negative air machines in operation.
8. Supplemental Make-Up Air Inlets: Provide, as needed for proper air flow in the regulated area, in a location approved by the VA, openings in the plastic sheeting to allow outside air to flow into the regulated area. Auxiliary makeup air inlets must be located as

far from the negative air machines as possible, off the floor near the ceiling, and away from the barriers that separate the regulated area from the occupied clean areas. Cover the inlets with weighted flaps which will seal in the event of failure of the negative pressure system.

9. Testing The System: The negative pressure system must be tested before any ACM is disturbed in any way. After the regulated area has been completely prepared, the decontamination units set up, and the negative air machines installed, start the units up one at a time. Demonstrate and document the operation and testing of the negative pressure system to the VA using smoke tubes and a negative pressure gauge. Verification and documentation of adequate negative pressure differential across each barrier must be done at the start of each work shift.
10. Demonstration of the Negative Pressure Filtration System:
    a. The demonstration of the operation of the negative pressure system to the VA shall include, but not be limited to, the following:
        1) Plastic barriers and sheeting move lightly in toward the regulated area.
        2) Curtains of the decontamination units move in toward regulated area.
        3) There is a noticeable movement of air through the decontamination units. Use the smoke tube to demonstrate air movement from the clean room to the shower room to the equipment room to the regulated area.
        4) Use smoke tubes to demonstrate air is moving across all areas in which work is to be done. Use a differential pressure gauge to indicate a negative pressure of at > - 0.02 inch across every barrier separating the regulated area from the rest of the building. Modify the system as necessary to meet the above requirements.
11. Use of the Negative Pressure Filtration System During Abatement Operations:
    a. Start units before beginning any disturbance of ACM occurs. After work begins, the units shall run continuously, maintaining 4

actual air changes per hour at a negative pressure differential of > - 0.02 inch water column gauge, for the duration of the work until a final visual clearance and final air clearance has been successfully completed.

b. No negative air units shall be shut down at any time unless authorized by the VA Contracting Officer, verbally and in writing.

c. Pre-cleaning of ACM contaminated items shall be performed after the enclosure has been erected and negative pressure has been established in the work area. After items have been pre-cleaned and decontaminated, they may be removed from the work area for storage until the completion of abatement in the work area.

d. Abatement work shall begin at a location farthest from the units and proceed towards them. If an electric failure occurs, the Competent Person shall stop all abatement work and immediately begin wetting all exposed asbestos materials for the duration of the power outage. Abatement work shall not resume until power is restored and all units are operating properly again.

e. The negative air machines shall continue to run after all work is completed and until a final visual clearance and a final air clearance has been successfully completed for that regulated area.

12. Dismantling The System: After completion of the final visual and final air clearance has been obtained by the VPIH/CIH, the units may be shut down. The unit exterior surfaces shall have been completely decontaminated; pre-filters are not to be removed and the units inlet/outlet sealed with 2 layers of 6-mil poly immediately after shut down. No filter removal shall occur at the VA site following successful completion of site clearance. OSHA/EPA/DOT asbestos labels shall be attached to the units.

D. Containment Barriers and Coverings in the Regulated Area:

1. General: Seal off the perimeter to the regulated area to completely isolate the regulated area from adjacent spaces. All surfaces in the regulated area must be covered to prevent contamination and to facilitate clean-up. Should adjacent areas become contaminated as a result of the work, Contractor shall immediately stop work and clean

up the contamination at no additional cost to the VA. Provide firestopping and identify all fire barrier penetrations due to abatement work as specified in Section 3.1.4.8; FIRESTOPPING.

2. Preparation Prior To Sealing: The Regulated Area: Place all tools, scaffolding, materials and equipment needed for working in the regulated area prior to erecting any plastic sheeting. All uncontaminated removable furniture, equipment and/or supplies shall be removed by the VA from the regulated area before commencing work. Any objects not scheduled for removal remaining in the regulated area shall be completely covered with 2 layers of 6-mil fire retardant poly sheeting and secured with duct tape. Lock out and tag out any HVAC/electrical systems in the regulated area.
3. Controlling Access to The Regulated Area: Access to the regulated area is allowed only through the personnel decontamination facility (PDF). All other means of access shall be eliminated and OSHA DANGER demarcation signs posted as required by OSHA. If the regulated area is adjacent to, or within view of an occupied area, provide a visual barrier of 6-mil opaque fire retardant poly to prevent building occupant observation. If the adjacent area is accessible to the public, the barrier must be solid and capable of withstanding the negative pressure.

4. Critical Barriers: Completely separate any operations in the regulated area from adjacent areas using 2 layers of 6-mil fire retardant poly and duct tape. Individually seal with 2 layers of 6-mil poly and duct tape all HVAC openings into the regulated area. Individually seal all lighting fixtures, clocks, doors, windows, convectors, speakers, or any other objects/openings in the regulated area. Heat must be shut off any objects covered with poly.
5. Primary Barriers:
   a. Cover the regulated area with two layers of 6-mil fire retardant poly on the floors and two layers of 4 mil, fire retardant poly on the walls, unless otherwise directed in writing by the VA representative. Floor layers must form a right angle with the wall and turn up the wall at least 300 mm (12 inches). Seams must overlap at least 1800 mm (6 feet) and must be spray glued and taped. Install sheeting so that layers can be removed

independently from each other. Carpeting shall be covered with three layers of 6-mil poly. Corrugated cardboard sheets must be placed between the bottom and middle layers of poly. Mechanically support and seal with duct tape and glue all wall layers.

b. If stairs and ramps are covered with 6-mil plastic, two layers must be used. Provide 19 mm (3/4 inch) exterior grade plywood treads held in place with duct tape/glue on the plastic. Do not cover rungs or rails with any isolation materials.

6. Secondary Barriers: A loose layer of 6-mil shall be used as a drop cloth to protect the primary layers from debris generated during the abatement. This layer shall be replaced as needed during the work.
7. Extension of the Regulated Area: If the enclosure of the regulated area is breached in any way that could allow contamination to occur, the affected area shall be included in the regulated area and constructed as per this section. Decontamination measures must be started immediately and continue until air monitoring indicates background levels are met.
8. Firestopping:
   a. Through penetrations caused by cables, cable trays, pipes, sleeves, conduits, etc. must be firestopped with a fire-rated firestop system providing an air tight seal.
   b. Firestop materials that are not equal to the wall or ceiling penetrated shall be brought to the attention of the VA Representative. The contractor shall list all areas of penetration, the type of sealant used, and whether or not the location is fire rated. Any discovery of penetrations during abatement shall be brought to the attention of the VA representative immediately. All walls, floors and ceilings are considered fire rated unless otherwise determined by the VA Representative or Fire Marshall.
   c. Any visible openings whether or not caused by a penetration shall be reported by the Contractor to the VA Representative for a sealant system determination. Firestops shall meet ASTM E814 and UL 1479 requirements for the opening size, penetrant, and fire rating needed.

E. Sanitary Facilities: The Contractor shall provide sanitary facilities for abatement personnel and maintain them in a clean and sanitary condition throughout the abatement project.

F. Personal Protective Equipment: Provide whole body clothing, head coverings, gloves and foot coverings and any other personal protective equipment as determined by conducting the hazard assessment required by OSHA at 29 CFR 1910.132 (d). The Competent Person shall ensure the integrity of personal protective equipment worn for the duration of the project. Duct tape shall be used to secure all suit sleeves to wrists and to secure foot coverings at the ankle.

G. Pre-Cleaning:

1. The VA will provide water for abatement purposes. The Contractor shall connect to the existing VA system. The service to the shower(s) shall be supplied with backflow prevention.
2. Pre-cleaning of ACM contaminated items shall be performed after the enclosure has been erected and negative pressure has been established in the work area. All workers performing pre-cleaning activities must don appropriate personal protective equipment (PPE), as specified throughout this document and as approved in the Contractor’s work plan. After items have been pre-cleaned and decontaminated, they may be removed from the work area for storage until the completion of abatement in the work area.
3. Pre-clean all movable objects within the regulated area using a HEPA filtered vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects shall be removed from the regulated area and carefully stored in an uncontaminated location. Drapes, clothing, upholstered furniture and other fabric items shall be disposed of as asbestos contaminated waste. Cleaning these asbestos contaminated items utilizing HEPA vacuum techniques and off-premises steam cleaning is very difficult and cannot guarantee decontamination. Carpeting will be disposed of prior to abatement if in the regulated area. If ACM floor tile is attached to the carpet while the Contractor is removing the carpet that section of the carpet will be disposed of as asbestos waste.
4. Pre-clean all fixed objects in the regulated area using HEPA filtered vacuums and/or wet cleaning techniques as appropriate.

Careful attention must be paid to machinery behind grills or gratings where access may be difficult but contamination may be significant. Also, pay particular attention to wall, floor and ceiling penetration behind fixed items. After pre-cleaning, enclose fixed objects with 2 layers of 6-mil poly and seal securely in place with duct tape. Objects (e.g., permanent fixtures, shelves, electronic equipment, laboratory tables, sprinklers, alarm systems, closed circuit TV equipment and computer cables) which must remain in the regulated area and that require special ventilation or enclosure requirements should be designated here along with specified means of protection. Contact the manufacturer for special protection requirements.

5. Pre-clean all surfaces in the regulated area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not disturb asbestos-containing materials during this pre-cleaning phase.

H. Pre-Abatement Activities:

1. Pre-Abatement Meeting: The VA representative, upon receipt, review, and substantial approval of all pre-abatement submittals and verification by the CPIH/CIH that all materials and equipment required for the project are on the site, will arrange for a pre-abatement meeting between the Contractor, the CPIH/CIH, Competent Person(s), the VA representative(s), and the VPIH/CIH. The purpose of the meeting is to discuss any aspect of the submittals needing clarification or amplification and to discuss any aspect of the project execution and the sequence of the operation. The Contractor shall be prepared to provide any supplemental information/documentation to the VA's representative regarding any submittals, documentation, materials or equipment. Upon satisfactory resolution of any outstanding issues, the VA's representative will issue a written order to proceed to the Contractor. No abatement work of any kind described in the following provisions shall be initiated prior to the VA written order to proceed.
2. Pre-Abatement Construction and Operations:

a. Perform all preparatory work for the first regulated area in accordance with the approved work schedule and with this specification.
b. Upon completion of all preparatory work, the CPIH/CIH will inspect the work and systems and will notify the VA's representative when the work is completed in accordance with this specification. The VA's representative may inspect the regulated area and the systems with the VPIH/CIH and may require that upon satisfactory inspection, the Contractor's employees perform all major aspects of the approved AHAP(s), especially worker protection, respiratory systems, contingency plans, decontamination procedures, and monitoring to demonstrate satisfactory operation. The operational systems for respiratory protection and the negative pressure system shall be demonstrated for proper performance.
c. The CPIH/CIH shall document the pre-abatement activities described above and deliver a copy to the VA's representative.
d. Upon satisfactory inspection of the installation of and operation of systems, the VA's representative will notify the Contractor in writing to proceed with the asbestos abatement work in accordance with this specification and all applicable regulations.

3. Pre-Abatement Inspections and Preparations:
   a. Before any work begins on the construction of the regulated area, the Contractor will:
      1) Conduct a space-by-space inspection with an authorized VA representative and prepare a written inventory of all existing damage in those spaces where asbestos abatement will occur. Still or video photography may be used to supplement the written damage inventory. Document will be signed and certified as accurate by both parties.
      2) A NESHAP (destructive) ACM inspection shall be conducted on all building structures that will be demolished. Ensure the following areas are inspected on the project: lay-in ceilings concealing ACM; ACM behind walls/windows from previous renovations; inside utility chases/walls; transite piping/ductwork/sheets; behind radiators; lab fume hoods;

transite lab countertops; roofing materials; below window sills; water/sewer lines; electrical conduit coverings; crawlspaces (previous abatement contamination); flooring/mastic covered by carpeting/new flooring; exterior insulated wall panels; on underground fuel tanks; and steam line trench coverings. Verify during NESHAP survey that no other suspect ACM is present.

3) Ensure that all furniture, machinery, equipment, curtains, drapes, blinds, and other movable objects required to be removed from the regulated area have been cleaned and removed or properly protected from contamination.

4) If present and required, remove and dispose of carpeting from floors in the regulated area.
5) Inspect existing firestopping in the regulated area. Correct as needed.

3.2 REMOVAL OF ACM

A. Wetting ACM:

1. Use amended water for the wetting of ACM prior to removal. The Competent Person shall assure the wetting of ACM meets the definition of "adequately wet" in the EPA NESHAP regulation and OSHA’s “wet methods” for the duration of the project. A removal encapsulant may be used instead of amended water with written approval of the VA's representative.
2. Amended Water: Provide water to which a surfactant has been added to wet the ACM and reduce the potential for fiber release during disturbance of ACM. The mixture must be equal to or greater than the wetting provided by water amended by a surfactant consisting of one ounce of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with 5 gallons (19L) of water.
3. Removal Encapsulant: When authorized by VA, provide a removal encapsulant designed specifically for the removal of ACM. The material must, when used, result in adequate wetting of the ACM and retard fiber release during removal.

B. Secondary Barrier and Walkways:

1. Install as a drop cloth a 6-mil poly sheet at the beginning of each work shift where removal is to be done during that shift. Completely

cover floors and any walls within 10 feet (3 meters) of the area where work is to done. Secure the secondary barrier with duct tape to prevent it from moving or debris from getting behind it. Remove the secondary barrier at the end of the shift or as work in the area is completed. Keep residue on the secondary barrier wetted. When removing, fold inward to prevent spillage and place in a disposal bag.

2. Install walkways using 6-mil black poly between the regulated area and the decontamination facilities (PDF and W/EDF) to protect the primary layers from contamination and damage. Install the walkways at the beginning of each shift and remove at the end of each shift.

C. Wet Removal of ACM:

1. Adequately and thoroughly wet the ACM to be removed prior to removal with amended water or when authorized by VA, removal encapsulant to reduce/prevent fiber release to the air. Adequate time must be allowed for the amended water or removal encapsulant to saturate the ACM. Abatement personnel must not disturb dry ACM. Use a fine spray of amended water or removal encapsulant. Saturate the material sufficiently to wet to the substrate without causing excessive dripping. The material must be sprayed repeatedly/continuously during the removal process in order to maintain adequately wet conditions. Removal encapsulants must be applied in accordance with the manufacturer's written instructions. Perforate or carefully separate, using wet methods, an outer covering that is painted or jacketed in order to allow penetration and wetting of the material. Where necessary, carefully remove covering while wetting to minimize fiber release. **In no event shall dry removal occur except when authorized in writing by the VPIH/CIH and VA when a greater safety hazard (e.g., electricity) is present.**

2. If ACM does not wet well with amended water due to composition, coating or jacketing, remove as follows:
   a. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.
   b. Remove saturated ACM in small sections. Do not allow material to dry out. As material is removed, bag material, while still wet

into disposal bags. Twist the bag neck tightly, bend over (gooseneck) and seal with a minimum of three tight wraps of duct tape. Clean /decontaminate the outside of the bag of any residue and move to washdown station adjacent to W/EDF.

c. Fireproofing or Architectural Finish on Scratch Coat: Spray with a fine mist of amended water or removal encapsulant. Allow time for saturation to the substrate. Do not over saturate causing excess dripping. Scrape material from substrate. Remove material in manageable quantities and control falling to staging or floor. If the falling distance is over 20 feet (6 meters), use a drop chute to contain material through descent. Remove residue remaining on the scratch coat after scraping is done using a stiff bristle hand brush. If a removal encapsulant is used, remove residue completely before the encapsulant dries. Periodically re-wet the substrate with amended water as needed to prevent drying of the material before the residue is removed from the substrate.

d. Fireproofing or Architectural Finish on Wire Lath: Spray with a fine mist of amended water or removal encapsulant. Allow time to completely saturate the material. Do not over saturate causing excess dripping. If the surface has been painted or otherwise coated, cut small holes as needed and apply amended water or removal encapsulant from above. Cut saturated wire lath into 2 feet x 6 feet (50mm x 150mm) sections and cut hanger wires. Roll up complete with ACM, cover in burlap and hand place in disposal bag. Do not drop to floor. After removal of lath/ACM, remove any overspray on decking and structure using stiff bristle nylon brushes. Depending on hardness of overspray, scrapers may be needed for removal.

e. Pipe/Tank/Vessel/Boiler Insulation: Remove the outer layer of wrap while spraying with amended water in order to saturate the ACM. Spray ACM with a fine mist of amended water or removal encapsulant. Allow time to saturate the material to the substrate. Cut bands holding pre-formed pipe insulation sections. Slit jacketing at the seams, remove and hand place in a disposal bag. Do not allow dropping to the floor. Remove molded fitting

insulation/mud in large pieces and hand place in a disposal bag. Remove any residue on pipe or fitting with a stiff bristle nylon brush. In locations where pipe fitting insulation is removed from fibrous glass or other non-asbestos insulated straight runs of pipe, remove fibrous material at least 6 inches from the point it contacts the ACM.

D. Wet Removal of Amosite:

1. The following areas shown on drawings indicate locations of amosite ACM which will require local exhaust ventilation and collection as described below, in addition to wet removal. Provide specific description /locations/ drawings.
2. Provide local exhaust ventilation and collection systems to assure collection of amosite fibers at the point of generation. A 300 mm (12") flexible rigid non-collapsing duct shall be shall be located no more than 600 mm (2 feet) from any scraping/brushing activity. Primary filters must be replaced every 30 minutes on the negative air machines. Each scraping/brushing activity must have a negative air machine devoted to it. For pre-molded pipe insulation or cutting wire lathe attach a 1200 mm (4 feet) square flared end piece on the intake of the duct. Support the duct horizontally at a point 600 mm (2 feet) below the work to effect capture. One person in the crew shall be assigned to operate the duct collection system on a continual basis.
3. Amosite does not wet well with amended water. Submit full information/documentation on the wetting agent proposed prior to start for review and approval by the VPIH/CIH and VA Contracting Officer. Insure that the material is worked on in small sections and is thoroughly and continuously wetted. Package as soon as possible while wet. Remove as required.

E. Removal of ACM/Dirt Floors and Other Special Procedures:

1. Major Abatement on Dirt Floors: When working on dirt floors, remove all visible asbestos debris using wet methods after set-up of PDF, W/EDF, negative air systems as required. Perform work and decontaminate/clean-up; perform lockdown as needed and complete work

as required in these specifications. The asbestos contaminated soil (ACS) shall be removed and/or enclosed.

2. Options for abatement of asbestos contaminated soil include: Removal of top 6 inches of soil; encapsulate the soil using shotcrete or other spray applied concrete materials. Considerations for which option to be used will be made by the VA representative. Factors which may affect which option to be used may include: access to the work area; height of the area (such as is there sufficient height to use concrete materials in the area, etc.). Soils covered with permanent barriers **MUST HAVE PERMANENT SIGNAGE INSTALLED TO WARN AGAINST PENETRATION ASSOCIATED WITH POTENTIAL DISTURBANCE OF ASBESTOS.**
   a. Remove ACS as shown on drawings to a minimum depth of 6 using wet methods. After wetting with amended water to minimize dust, shovel dirt into disposal bags. The CPIH/CIH shall closely monitor work conditions and take appropriate action to protect workers from over exposure to asbestos and heat stress. The minimum number of air changes per hour shall be six using negative air machines. Use of special vacuum truck equipped with HEPA filtration to remove soil is an acceptable option.
   b. Enclosure of ACS using a concrete layer of 4 inches over the entire surface may also be done. Thoroughly dampen soil first with amended water before pouring concrete. Personnel shall be proficient in concrete finishing as well as asbestos trained.
3. Crawlspaces/Pipe Tunnels: When working in crawlspaces or pipe tunnels, remove all visible asbestos debris using wet methods (if possible) after set-up of PDF, W/EDF, and after establishing negative air systems as required. Perform work and decontaminate/clean-up; perform lockdown as needed and complete work as required in these specifications. The asbestos contaminated soil (ACS) shall be removed and/or enclosed. Clearance requirements include confirmation sampling of affected soil by Polarized Light Microscopy (PLM). Clearance sampling requirements are specified in Sections 3.6.4 3.6.5 and 3.6.6.

4. Options for abatement of asbestos contaminated soil include: Removal of top 6 inches of soil; encapsulate the soil using shotcrete or other spray applied concrete materials. Considerations for which option to be used will be made by the VA representative. Factors which may affect which option to be used may include: access to the work area; height of the area (such as is there sufficient height to use concrete materials in the area, etc.).

3.3 LOCKDOWN ENCAPSULATION

A. General: Lockdown encapsulation is an integral part of the ACM removal. At the conclusion of ACM removal and before removal of the primary barriers, the contractor shall encapsulate all surfaces with a bridging encapsulant.

B. Delivery and Storage: Deliver materials to the job site in original, new and unopened containers bearing the manufacturer's name and label as well as the following information: name of material, manufacturer's stock number, date of manufacture, thinning instructions, application instructions and the SDS for the material.

C. Worker Protection: Before beginning work with any material for which an SDS has been submitted, provide workers with any required personal protective equipment. The required personal protective equipment shall be used whenever exposure to the material might occur. In addition to OSHA/specification requirements for respiratory protection, a paint pre-filter and an organic vapor cartridge, at a minimum, shall be used in addition to the HEPA filter when an organic solvent based encapsulant or other solvent is used. The CPIH/CIH shall be responsible for provision of adequate respiratory protection. Note: Flammable and combustible encapsulants or solvents shall not be used, unless authorized in writing by the VA.

D. Encapsulation of Scratch Coat Plaster or Piping:

1. Apply two coats of lockdown encapsulant to the scratch coat plaster or piping after all ACM has been removed. Apply in strict accordance with the manufacturer's instructions. Any deviation from the instructions must be approved by the VA's representative in writing prior to commencing the work.
2. Apply the lockdown encapsulant with an airless sprayer at a pressure and using a nozzle orifice as recommended by the manufacturer. Apply

the first coat while the scratch coat is still damp from the asbestos removal process, after passing the visual inspection. If the surface has been allowed to dry, wet wipe or HEPA vacuum prior to spraying with encapsulant. Apply a second coat over the first coat in strict conformance with the manufacturer's instructions. Color the lockdown encapsulant and contrast the color in the second coat so that visual confirmation of completeness and uniform coverage of each coat is possible. Adhere to the manufacturer's instructions for coloring. At the completion of the encapsulation, the surface must be a uniform third color produced by the mixture.

E. Sealing Exposed Edges: Seal edges of ACM exposed by removal work which is inaccessible, such as a sleeve, wall penetration, etc., with two coats of bridging encapsulant. Prior to sealing, permit the exposed edges to dry completely to permit penetration of the bridging encapsulant. Apply in accordance with 3.3.4 (B).

3.4 DISPOSAL OF ACM WASTE MATERIALS

A. General: Dispose of waste ACM and debris which is packaged in accordance with these specifications, in accordance with OSHA, EPA, State, Local and DOT requirements. The landfill requirements for packaging must also be met. Transport will be in compliance with 49 CFR 171-180 regulations. Disposal shall be done at an approved landfill. Disposal of non-friable ACM shall be done in accordance with applicable regulations.

B. Procedures:

1. The VA must be notified at least 24 hours in advance of any waste removed from the containment.
2. Asbestos waste shall be packaged and moved through the W/EDF into a covered transport container in accordance with procedures is this specification. Waste shall be double-bagged and wetted with amended water prior to disposal. Wetted waste can be very heavy. Bags shall not be overfilled. Bags shall be evacuated with HEPA vacuum and securely sealed to prevent accidental opening and/or leakage. The top shall be tightly twisted and goose necked prior to tightly sealing with at least three wraps of duct tape. Ensure that unauthorized persons do not have access to the waste material once it is outside the regulated area. All transport containers must be

covered at all times when not in use. NESHAP signs must be on containers during loading and unloading. Material shall not be transported in open vehicles. If drums are used for packaging, the drums shall be labeled properly and shall not be re-used.

3. Waste Load Out: Waste load out shall be done in accordance with the procedures in W/EDF Decontamination Procedures. Sealed waste bags shall be decontaminated on exterior surfaces by wet cleaning and HEPA vacuuming before being placed in the second waste bag and sealed, which then must also be wet wiped and HEPA vacuumed.
4. Asbestos waste with sharp edged components, i.e., nails, screws, lath, strapping, tin sheeting, jacketing, metal mesh, etc., which might tear poly bags shall be wrapped securely in burlap before packaging and, if needed, use a poly lined fiber drum as the second container, prior to disposal.

3.5 PROJECT DECONTAMINATION

A. General:
   1. The entire work related to project decontamination shall be performed under the close supervision and monitoring of the CPIH/CIH.
   2. If the asbestos abatement work is in an area which was contaminated prior to the start of abatement, the decontamination will be done by cleaning the primary barrier poly prior to its removal and cleanings of the surfaces of the regulated area after the primary barrier removal.
   3. If the asbestos abatement work is in an area which was uncontaminated prior to the start of abatement, the decontamination will be done by cleaning the primary barrier poly prior to its removal, thus preventing contamination of the building when the regulated area critical barriers are removed.

B. Regulated Area Clearance: Clearance air testing and other requirements which must be met before release of the Contractor and re-occupancy of the regulated area space are specified in Final Testing Procedures.

C. Work Description: Decontamination includes the clearance air testing in the regulated area and the decontamination and removal of the enclosures/facilities installed prior to the abatement work including

primary/critical barriers, PDF and W/EDF facilities, and negative pressure systems.

D. Pre-Decontamination Conditions:
   1. Before decontamination starts, all ACM waste from the regulated area shall be collected and removed, and the loose 6-mil layer of poly removed while being adequately wetted with amended water and disposed of along with any gross debris generated by the work.
   2. At the start of decontamination, the following shall be in place:
      a. Primary barriers consisting of 2 layers of 6-mil poly on the floor and 4 mil poly on the walls.
      b. Critical barriers consisting of 2 layers of 6-mil poly which is the sole barrier between the regulated area and openings to the rest of the building or outside.
      c. Decontamination facilities for personnel and equipment in operating condition and the negative pressure system in operation.

E. First Cleaning: Carry out a first cleaning of all surfaces of the regulated area including items of remaining poly sheeting, tools, scaffolding, ladders/staging by wet methods and HEPA vacuuming. Do not use dry dusting/sweeping/air blowing methods. Use each surface of a wetted cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible residue from abated surfaces or poly or other surfaces. Remove all filters in the air handling system and dispose of as ACM waste in accordance with these specifications. The negative pressure system shall remain in operation during this time. Additional cleaning(s) may be needed as determined by the CPIH/VPIH/CIH.

F. Pre-Clearance Inspection and Testing: The CPIH/CIH and VPIH/CIH will perform a thorough and detailed visual inspection at the end of the cleaning to determine whether there is any visible residue in the regulated area. If the visual inspection is acceptable, the CPIH/CIH will perform pre-clearance sampling using aggressive clearance as detailed in 40 CFR 763 Subpart E (AHERA) Appendix A (III)(B)(7)(d). If the sampling results show values below 0.01 f/cc, then the Contractor shall notify the VA's representative of the results with a brief report from the CPIH/CIH documenting the inspection and sampling results and a

statement verifying that the regulated area is ready for lockdown encapsulation. The VA reserves the right to utilize their own VPIH/CIH to perform a pre-clearance inspection and testing for verification.

G. Lockdown Encapsulation of Abated Surfaces: With the express written permission of the VA's representative, perform lockdown encapsulation of all surfaces from which asbestos was abated in accordance with the procedures in this specification. Negative pressure shall be maintained in the regulated area during the lockdown application.

3.6 FINAL VISUAL INSPECTION AND AIR CLEARANCE TESTING

A. General: Notify the VA representative 24 hours in advance for the performance of the final visual inspection and testing. The final visual inspection and testing will be performed by the VPIH/CIH starting after the final cleaning.

B. Final Visual Inspection: Final visual inspection will include the entire regulated area, the PDF, all poly sheeting, seals over HVAC openings, doorways, windows, and any other openings. If any debris, residue, dust or any other suspect material is detected, the final cleaning shall be repeated at no additional cost to the VA. Dust/material samples may be collected and analyzed at no additional cost to the VA at the discretion of the VPIH/CIH to confirm visual findings. When the regulated area is visually clean the final testing can be done.

C. Final Air Clearance Testing:

1. After an acceptable final visual inspection by the VPIH/CIH and VA Representative, the VPIH/CIH will perform the final clearance testing. Air samples will be collected and analyzed in accordance with procedures for AHERA in this specification. If work is less than 260 lf/160 sf/35 cf, 5 PCM samples shall be collected for clearance and a minimum of two field blank. If work is equal to or more than 260 lf/160 sf/35 cf, AHERA TEM sampling shall be performed for clearance. TEM analysis shall be done in accordance with procedures for EPA AHERA presented in this specification. If the release criteria are not met, the Contractor shall repeat the final cleaning and continue decontamination procedures until clearance is achieved. **All Additional inspection and testing costs will be borne by the Contractor.**

2. If release criteria are met, proceed to perform the abatement closeout and to issue the certificate of completion in accordance with these specifications.

D. Final Air Clearance Procedures:

1. Contractor's Release Criteria: Work in a regulated area is complete when the regulated area is visually clean and airborne fiber levels have been reduced to or below 0.01 f/cc as measured by the AHERA PCM protocol and < 70 AHERA asbestos structures per square millimeter (s/mm2) by AHERA TEM. No averaging of results will be used for this project. All five (5) TEM samples inside the regulated area shall be at or below 70 asbestos s/mm2 to satisfy the project final clearance criteria.
2. Air Monitoring and Final Clearance Sampling: To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the VPIH/CIH will secure samples and analyze them according to the following procedures:
   a. Fibers Counted: "Fibers" referred to in this section shall be either all fibers regardless of composition as counted in the NIOSH 7400 PCM method or asbestos fibers counted using the AHERA TEM method.
   b. Aggressive Sampling: All final air testing samples shall be collected using aggressive sampling techniques except where soil is not encapsulated or enclosed. Samples will be collected on 0.8µ MCE filters for PCM analysis and 0.45µ MCE for TEM. A minimum of 3850 Liters of air using calibrated sampling pumps shall be collected for PCM samples and a minimum of 1200 Liters of air using calibrated sampling pumps shall be collected for TEM clearance samples. Before pumps are started, initiate aggressive air mixing sampling as detailed in 40 CFR 763 Subpart E (AHERA) Appendix A (III)(B)(7)(d). Air samples will be collected in areas subject to normal air circulation away from corners, obstructed locations, and locations near windows, doors, or vents. After air sampling pumps have been shut off, circulating fans shall be shut off. The negative pressure system shall continue to operate.

c. Final clearance for soil that is not encapsulated, samples will be collected on 0.8µ MCE filters for PCM analysis and 0.45µ MCE filters for TEM. A minimum of 3850 Liters of air using calibrated sampling pumps shall be collected for PCM samples and a minimum of 1200 Liters of air using calibrated sampling pumps shall be collected for TEM clearance samples. Air clearance of work areas where contaminated soil has been removed is in addition to the requirement for clearance by bulk sample analysis discussed within these specifications. There will be no aggressive air sampling for the clearance of soil due to the fact that aggressive air sampling may overload the cassettes.

d. Random bulk samples shall be collected from areas of soil which have been abated to ensure that the soil has been properly decontaminated. The total number of samples to be collected from the soil areas shall be; <1000 square feet of soil – 3 samples; >1000 to <5000 square feet of soil – 5 samples; and >5000 square feet of soil – 7 samples. The soil samples shall be collected in a statistically random manner and shall be analyzed by PLM method. The clearance level to determine the soil clean is <1 percent asbestos by weight as analyzed by PLM method. If this level is achieved, the soil areas shall be considered clear. If the levels are >1 percent asbestos, the areas shall be re-cleaned until the sample results are <1 percent.

E. Clearance Sampling Using PCM – Less than 260LF/160SF:

1. The VPIH/CIH will perform clearance samples as indicated by the specification.
2. The NIOSH 7400 PCM method will be used for clearance sampling with a minimum collection volume of 3850 Liters of air. A minimum of 5 PCM clearance samples shall be collected. All samples must be equal to or less than 0.01 f/cc to clear the regulated area.
3. Random bulk samples shall be collected from areas of soil which have been abated to ensure that the soil has been properly decontaminated. The total number of samples to be collected from the soil areas shall be; <1000 square feet of soil – 3 samples; >1000 to <5000 square feet of soil – 5 samples; and >5000 square feet of soil – 7 samples. The soil samples shall be collected in a statistically

random manner and shall be analyzed by PLM method. The clearance level to determine the soil clean is <1 percent asbestos by weight as analyzed by PLM method. If this level is achieved, the soil areas shall be considered clear. If the levels are >1 percent asbestos, the areas shall be re-cleaned until the sample results are <1 percent.

F. Clearance Sampling Using Tem – Equal to or more than 260LF/160SF: TEM
   1. Clearance requires 13 samples be collected; 5 inside the regulated area; 5 outside the regulated area; and 3 field blanks.
   2. The TEM method will be used for clearance sampling with a minimum collection volume of 1200 Liters of air. A minimum of 13 clearance samples shall be collected. All samples must be equal to or less than 70 AHERA structures per square millimeter (s/mm2) AHERA TEM, no averaging of results for this specific project.

G. Laboratory Testing of PCM Clearance Samples: The services of an AIHA accredited laboratory will be employed by the VA to perform analysis for the PCM air samples. The accredited laboratory shall be successfully participating in the AIHA Proficiency Analytical Testing (PAT) program. Samples will be sent daily by the VPIH/CIH so that verbal/faxed reports can be received within 24-36 hours. A complete record, certified by the laboratory, of all air monitoring tests and results will be furnished to the VA’s representative and the Contractor.

H. Laboratory Testing of Tem Samples: Samples shall be sent by the VPIH/CIH to a NIST NVLAP accredited laboratory for analysis by TEM. The laboratory shall be successfully participating in the NIST Airborne Asbestos Analysis (TEM) program. Verbal/faxed results from the laboratory shall be available within 24-36 hours after receipt of the samples. A complete record, certified by the laboratory, of all TEM results shall be furnished to the VA's representative and the Contractor.

I. Laboratory Testing of Bulk Samples: Samples shall be sent by the VPIH/CIH or CPIH/CIH to a NIST NVLAP accredited laboratory for analysis by PLM. The laboratory shall successfully participate in the NIST NVLAP Bulk Asbestos Analysis (PLM) program. Verbal/faxed results from the laboratory shall be available within 24-36 hours after receipt of the

samples. A complete record, certified by the laboratory, of all PLM and/or TEM results shall be furnished to the VA's representative and the Contractor.

3.7 ABATEMENT CLOSEOUT AND CERTIFICATE OF COMPLIANCE

A. Completion of Abatement Work:

1. After thorough decontamination, seal negative air machines with 2 layers of 6-mil poly and duct tape to form a tight seal at the intake/outlet ends before removal from the regulated area. Complete asbestos abatement work upon meeting the regulated area visual and air clearance criteria and fulfilling the following:
   a. Remove all equipment and materials from the project area.
   b. Dispose of all packaged ACM waste as required.
   c. Repair or replace all interior finishes damaged during the abatement work, as required.
   d. Fulfill other project closeout requirements as required in this specification.

B. Certificate of Completion By Contractor: The CPIH/CIH shall complete and sign the "Certificate of Completion" in accordance with Attachment 1 at the completion of the abatement and decontamination of the regulated area.

C. Work Shifts: All work shall generally be done during administrative hours (8:00 AM to 4:30 PM) Monday - Friday excluding Federal Holidays. Any change in the work schedule must be approved in writing by the VA Representative.

D. Re-Insulation: If required as part of the contract, replace all asbestos containing insulation/fire-proofing with suitable non-asbestos material. Provide SDS’s for all replacement materials in advance of installation for VA approval. Refer to Section 23 07 11, HVAC, PLUMBING, AND BOILER PLANT INSULATION.

ATTACHMENT #1
CERTIFICATE OF COMPLETION

DATE: _____ VA Project #: _____

PROJECT NAME: _____ Abatement Contractor: _____

VAMC/ADDRESS: _____

1. I certify that I have personally inspected, monitored and supervised the abatement work of (specify regulated area or Building):
   which took place from / / to / /
2. That throughout the work all applicable requirements/regulations and the VA's specifications were met.
3. That any person who entered the regulated area was protected with the appropriate personal protective equipment and respirator and that they followed the proper entry and exit procedures and the proper operating procedures for the duration of the work.
4. That all employees of the Abatement Contractor engaged in this work were trained in respiratory protection, were experienced with abatement work, had proper medical surveillance documentation, were fit-tested for their respirator, and were not exposed at any time during the work to asbestos without the benefit of appropriate respiratory protection.
5. That I performed and supervised all inspection and testing specified and required by applicable regulations and VA specifications.
6. That the conditions inside the regulated area were always maintained in a safe and healthy condition and the maximum fiber count never exceeded 0.5 f/cc, except as described below.
7. That all abatement work was done in accordance with OSHA requirements and the manufacturer’s recommendations.

CPIH/CIH Signature/Date: _____

CPIH/CIH Print Name: _____

Abatement Contractor Signature/Date: _____

Abatement Contractor Print Name: _____

ATTACHMENT #2
CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME: _____ DATE: _____

PROJECT ADDRESS: _____

ABATEMENT CONTRACTOR'S NAME: _____

WORKING WITH ASBESTOS CAN BE HAZARDOUS TO YOUR HEALTH. INHALING ASBESTOS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCERS. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, YOUR CHANCES OF DEVELOPING LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You must be supplied with the proper personal protective equipment including an adequate respirator and be trained in its use. You must be trained in safe and healthy work practices and in the use of the equipment found at an asbestos abatement project. You must receive/have a current medical examination for working with asbestos. These things shall be provided at no cost to you. By signing this certificate of worker's acknowledgement you are indicating to the owner that your employer has met these obligations.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators and have been informed of the type of respirator to be used on the above indicated project. I have a copy of the written Respiratory Protection Program issued by my employer. I have been provided for my exclusive use, at no cost, with a respirator to be used on the above indicated project.

TRAINING COURSE: I have been trained by a third party, State/EPA accredited trainer in the requirements for an AHERA/OSHA Asbestos Abatement Worker training course, 32-hours minimum duration. I currently have a valid State accreditation certificate. The topics covered in the course include, as a minimum, the following:

- Physical Characteristics and Background Information on Asbestos
- Potential Health Effects Related to Exposure to Asbestos
- Employee Personal Protective Equipment
- Establishment of a Respiratory Protection Program
- State of the Art Work Practices
- Personal Hygiene
- Additional Safety Hazards
- Medical Monitoring
- Air Monitoring
- Relevant Federal, State and Local Regulatory Requirements, Procedures, and Standards
- Asbestos Waste Disposal

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, occupational history, pulmonary function test, and may have included a chest x-ray evaluation. The physician issued a positive written opinion after the examination.

Signature: _____

Printed Name: _____

Social Security Number:_____

Witness:_____

ATTACHMENT #3
AFFIDAVIT OF MEDICAL SURVEILLANCE, RESPIRATORY PROTECTION AND TRAINING/ACCREDITATION

VA PROJECT NAME AND NUMBER:_____

VA MEDICAL FACILITY:_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:_____

1. I verify that the following individual

Name:_____ Social Security Number:_____

who is proposed to be employed in asbestos abatement work associated with the above project by the named Abatement Contractor, is included in a medical surveillance program in accordance with 29 CFR 1926.1101(m), and that complete records of the medical surveillance program as required by 29 CFR 1926.1101(m)(n) and 29 CFR 1910.20 are kept at the offices of the Abatement Contractor at the following address.

Address:_____

2. I verify that this individual has been trained, fit-tested and instructed in the use of all appropriate respiratory protection systems and that the person is capable of working in safe and healthy manner as expected and required in the expected work environment of this project.

3. I verify that this individual has been trained as required by 29 CFR 1926.1101(k). This individual has also obtained a valid State accreditation certificate. Documentation will be kept on-site.

4. I verify that I meet the minimum qualifications criteria of the VA specifications for a CPIH.

Signature of CPIH/CIH:_____ Date:_____

Printed Name of CPIH/CIH:_____

Signature of Contractor:_____ Date:_____

Printed Name of Contractor:_____

ATTACHMENT #4
ABATEMENT CONTRACTOR/COMPETENT PERSON(S) REVIEW AND ACCEPTANCE OF THE VA'S ASBESTOS SPECIFICATIONS

VA Project Location:_____

VA Project #:_____

VA Project Description:_____

1. This form shall be signed by the Asbestos Abatement Contractor Owner and the Asbestos Abatement Contractor's Competent Person(s) prior to any start of work at the VA related to this Specification. If the Asbestos Abatement Contractor's/Competent Person(s) has not signed this form, they shall not be allowed to work on-site.

2 I, the undersigned, have read VA's Asbestos Specification regarding the asbestos abatement requirements. I understand the requirements of the VA's Asbestos Specification and agree to follow these requirements as well as all required rules and regulations of OSHA/EPA/DOT and State/Local requirements. I have been given ample opportunity to read the VA's Asbestos Specification and have been given an opportunity to ask any questions regarding the content and have received a response related to those questions. I do not have any further questions regarding the content, intent and requirements of the VA's Asbestos Specification.

3. At the conclusion of the asbestos abatement, I will certify that all asbestos abatement work was done in accordance with the VA's Asbestos Specification and all ACM was removed properly and no fibrous residue remains on any abated surfaces.

Abatement Contractor Owner's Signature_____Date_____

- - - E N D - - -

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

Lead Based Paint Inspection

Birmingham VA Health Care System
700 19th Street S
Birmingham, AL 35233

Inspection Date: April 9, 2026

Report Date: March 26, 2026

Prepared by:

Shive-Hattery
2839 Northgate Drive
Iowa City, IA 52245

Project # 2240008440

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1. Introduction

In accordance with the request by the property owners and Bancroft, we have completed a selective XRF lead inspection at *700 19th Street S, Birmingham, AL 35233*.

2. Property Background

The area of construction is separated into two wings on second floor. The K-wing is a new addition built in 2010 that houses mental and behavioral health, and the B-wing is part of the original building that houses optometry. The building has always been used as a hospital.

3. Project Description

This project is to provide a proactive lead inspection for painted surfaces affected by renovation activities in the two areas of the building identified above. A certified lead inspector/risk assessor conducted lead inspections according to Iowa Administrative Code 641.70.

4. Methods and Procedures

Paint has been tested by X-ray fluorescence using adequate quality control to determine the presence of lead-based paint on a surface.

The X-ray fluorescence analyzer used for this inspection meets the requirements and was used according to IAC 641.70.

The certified lead inspector/risk assessor shall change a positive classification to negative only if the results of the laboratory analysis indicate that the surface is not painted with lead-based paint. The certified lead inspector/risk assessor may assume that all inconclusive readings are positive and classify them as such or take another recognized reading for the same location.

XRF calibration readings were taken prior to and after paint analysis for each inspection or day of inspection per IAC 641.70 to demonstrate that the XRF was properly calibrated.

All painted and/or finished components were tested according to the specifications described in the protocols for LBP testing in Iowa Administrative Code 641 – Chapter 70 and applicable Federal, State, and Local regulations. During the inspection, the standard of 1.0 mg/cm^2 was followed to determine the components that contained LBP.

During the evaluation, XRF testing was performed on at least one location per testing combination, except for interior walls, where four readings were taken (or one on each wall). The XRF testing was conducted using a NITON (Serial #209027), X-Ray fluorescence (XRF) lead paint analyzer. A surface by surface visual inspection of the painted and/or finished surfaces was conducted to determine which lead coated surfaces/components are deteriorated at or above the standard level of 1.0 mg/cm^2. The visual assessment identified the following:

If a testing combination is painted and not tested, it shall be assumed to be painted with lead-based paint.

4a Definitions

A Room Equivalent is an identifiable part of a building, such as a room, an exterior side, or an exterior area. Hallways, stairways, and exterior areas, such as loading docks, parking lots, and each side of a building, are all considered room equivalents.

Each room equivalent is made up of Components. Components may be located inside or outside a building. For example, components in a room could be its ceiling, floor, walls, a door and its casing, the window sash, and window casings. The Substrate is the material underneath the paint of a component. Although many different substrates exist, HUD guidelines recommend classifying substrates into one of six types: (1) brick; (2) concrete; (3) drywall; (4) metal; (5) plaster; and (6) wood. If the true substrate under investigation is not one of the aforementioned types, HUD guidelines mandate the inspector/risk assessor to select the substrate type that most closely resembles one of the six defined substrate types. For substrates that are layered, such as plaster on concrete, the substrate directly beneath the painted surface is identified during an LBP inspection. A Testing Combination is characterized by the room equivalent, component, substrate, and visible color of paint. The Test Location is a specific area on a testing combination where the XRF (x-ray fluorescence) instrument was used to test for LBP.

4b Sampling Strategies

According to the standard guidelines, a lead reading by XRF of 1.0 mg/cm^2 or above is considered positive for the presence of LBP. An XRF reading below 1.0 mg/cm^2 is considered negative; however, a reading below 1.0 mg/cm^2 could still be harmful if proper precautions are not taken during activities that disturb these paint films. If there are any inconclusive readings, a paint-chip sample may be collected for laboratory analysis. Laboratory analysis of samples collected will only be performed by an EPA approved National Lead Laboratory Accreditation Program (NLLAP) laboratory. There is no inconclusive range for laboratory measurements/results.

Only painted or finished components of a facility are tested during an LBP inspection. Wall “A” in each room is the wall where the entrance door opening is in the room. For hallways, corridors or stair towers, wall A is consistent with the side that would be to the main entrance of the building. Going clockwise from Wall “A”, Wall “B” will always be to the left, Wall “C” directly in front and Wall “D” at the right. Doors, windows and closets are designated by the wall they are on, and may be indicated as left, center or right depending on their location on the wall.

4c Assessment Logic

An LBP Risk Assessment is performed by use of the following assessment logic. Any paint found to contain lead below the standard level of 1.0 mg/cm^2, regardless of condition, is considered non-hazardous. Components having lead levels at or above 1.0 mg/cm^2 are visually assessed for condition and approximate surface area. The paint condition is placed into one of the categories using the risk assessor's professional judgment. These categories are: (1) intact or fair, and (2) deteriorated. Based on the approximate surface area of deteriorated paint, the risk assessor then determines the condition of the LBP as intact/fair or deteriorated. This is performed for all painted surfaces determined to be at or above the standard level of 1.0 mg/cm^2.

5. Property Information

The inspection was conducted to identify lead-based paint and lead-based paint hazards in the construction area of the facility:

Date of each inspection:	August 19, 2021
Property Address:	*address*
Date of construction:	1910
Room Numbers/Identification:	See Appendix A
Authorizing Entity:	
Name:	*Brent Setar*
Address:	*Bancroft Architect + Engineers* *3300 Dundee Rd, Suite B* *Northbrook, IL 60062*

6. Inspection Firm Information

Certified firm(s) conducting the inspection; name, address, telephone number, and certification number:

Shive-Hattery, Inc.
2839 Northgate Drive
Iowa City, IA 52445
319.354.3040

Laboratory conducting an analysis of any collected samples; name, address, and telephone number:

No paint chip, dust, or soil samples were taken as part of this survey.

X-ray fluorescence (XRF) analyzer information; manufacturer, serial number, software, and operating mode of XRF:

Thermo Scientific
SN: 25430
Software: Niton Data Transfer
Operating mode of XRF: Standard

7. Findings

For purposes of this report, any positive result is considered a lead-based paint hazard if it is in any other condition than “intact.” All painted or finished components that were not tested must be assumed to contain lead-based paint. There is no available history of lead-based paint that has previously existed on exterior components that has been removed, enclosed, or encapsulated.

8. Positive Test Results:

There were no positive results found and no inaccessible areas encountered during the LBP evaluation.

9. Conclusions

The above listed components (see Section 8) were found “positive” for lead, as defined by the guidelines as containing lead in concentrations equal to or greater than 1.0 mg/cm^2.

According to HUD guidelines, if one testing combination (i.e. window, door) is positive for lead in an interior or exterior room equivalent, then all other similar testing combinations in those areas are also assumed to be positive for lead. Likewise, the same is true for negative readings. All inaccessible areas are assumed to be positive, even though they were not tested. Any inaccessible areas encountered during the LBP evaluation are noted in Section 8.

This inspection was completed in accordance with Lead Safe Housing Rule 24 CFR Part 35 subpart F as amended (2004). Appendix A contains a spreadsheet of all areas that were tested. The surface conditions of the paint ranged from intact to deteriorated at the time of the inspection. Those components, which were found to contain LBP and were found to be intact or fair condition, should be monitored by the owner of the structure; any further deterioration of these components or components that are already in deteriorated condition should undergo corrective action to maintain the LBP surface.

In compliance with HUD’s Final Rule, potential hazards resulting from LBP must be subjected to corrective action to stabilize all deteriorated LBP in housing built before 1978, unless the property is exempt. Upon completion of paint stabilization activities, HUD requires a clearance examination to determine that the paint stabilization efforts were performed adequately. Paint stabilization repairs any defect in the substrate and/or in building components that are causing the paint deterioration, removes all loose paint and other material from the surface to be treated utilizing lead-safe work practices, and, in most cases, applies a new protective coating or paint. Any stabilization/construction activities which affect the existing paint films (including sanding and demolition) must be initiated by workers who have received proper training in the handling of lead contaminated materials.

Pursuant to HUD, EPA and IDPH regulations and codes, the owner will determine whether lead hazard reduction will be performed at the property.

10. Recommendations

Shive-Hattery has determined that there is no lead-based paint in this area. As a result, OSHA Lead in Construction Standards for air quality control are not required when performing work.

The owner is obligated to disclose known lead-based paint and lead-based paint hazards upon sale or lease of property as required by Subpart H of 24 CFR.

Information regarding Iowa’s pre-renovation notification requirements can be found in 641—Chapter 69; and information regarding Iowa’s regulations for renovation found in 641—Chapter 70.

11. Disclosure Responsibilities

The Occupational Safety and Health Administration (OSHA) Lead in Construction Standard states that "negative" readings (i.e. those below the HUD/EPA definition of what constitutes LBP [1.0 mg/cm^2]) **do not** relieve contractors from performing exposure assessments (personal air monitoring) on their employees per the OSHA Lead Standard, and should not be interpreted as lead free. Although a reading may indicate "negative", airborne lead concentrations still may exceed the OSHA Action Level or the OSHA Permissible Exposure Limit (PEL) depending on the work activity.

"The location and nature of this inspection are required to be reported to the Iowa Department of Public Health for tracking purposes. The Iowa Department of Public Health may review this report for compliance purposes. It is a violation of law for anyone other than the certified lead professional signing it to alter this report. This report may be supplemented with additional information, so long as any addendum is signed by a lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor certified according to Iowa Administrative Code 641—70.3(135) and 70.5(135)."

12. Disclaimer

This is our report of a visual survey, and X-Ray Fluorescence (XRF) analysis of the readily accessible areas of this building and tested components. The presence or absence of LBP or LBP hazards applies only to the tested or assessed surfaces on the date of the field visit and it should be understood that conditions may change due to deterioration or maintenance. The results and material conditions noted within this report were accurate at the time of the inspection and in no way reflect the conditions at the property after the date of the inspection. No other environmental concerns or conditions were addressed during this inspection.

NOTES:

1. Components covered with vinyl and/or metal siding were not inspected during the inspection because the surfaces underneath these components were not visible or accessible. This leaves the possibility that LBP components could be located beneath these coverings.

2. Wallpaper is not considered a substrate and consequently any positive readings taken on wallpaper should not be construed as containing lead therein. Negative readings should not be interpreted as a complete absence of lead-based paint on any subsurface beneath wallpaper. Observation of physical condition of the wallpaper may not in any way be indicative of the condition of any possible lead bearing surface neither underneath nor to the classification of such surface as to whether they are hazardous or non-hazardous.

13. Summary

It must be stressed that all findings and opinions represent conditions at the time of evaluation. These opinions are based on results from the procedures conducted at that point in time.

Our conclusions and recommendations are based on review of the above information and our field investigation. Should any information become available that materially affects the validity of the aforementioned information, we reserve the right to modify this report accordingly.

This report was prepared by Shive-Hattery, Inc. All opinions, recommendations, and conclusions expressed during the course of this assignment are rendered by the staff of Shive-Hattery as employees, rather than as individuals.

Please contact Sam Becker at (319) 530-2456 if you have any questions or comments.

Sincerely,

SHIVE-HATTERY, INC.



Samuel Becker
Civil Designer
Lead Inspector/Risk Assessor
ILEAD-INSP10002

SSB/mas

Encs.: Appendix A

EXHIBIT A

Time	Type	Duration	Units	Results	Component	Substrate	Side	Condition	Color	Site	Inspector	Floor	Room	Pb	Pb Error
3/25/2026 13:59	Action Lead Paint	20	mg / cm ^2	Inconclusive			CALIBRATE	INTACT	RED	VA BIRMINGHAM	SSB	ADDITION	LOBBY	1.06	0.1
3/25/2026 14:00	Action Lead Paint	0.17	mg / cm ^2	Inconclusive			CALIBRATE	INTACT	RED	VA BIRMINGHAM	SSB	ADDITION	LOBBY		
3/25/2026 14:00	Action Lead Paint	1.2	mg / cm ^2	Positive			CALIBRATE	INTACT	RED	VA BIRMINGHAM	SSB	ADDITION	LOBBY	1.37	0.25
3/25/2026 14:01	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	LOBBY	<LOD	0.01
3/25/2026 14:02	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	LOBBY	<LOD	0.01
3/25/2026 14:02	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	DRYWALL	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ADDITION	LOBBY	<LOD	0.03
3/25/2026 14:03	Action Lead Paint	0.46	mg / cm ^2	Negative	DOOR FRAME	METAL	C	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	LOBBY	<LOD	0.03
3/25/2026 14:04	Action Lead Paint	0.47	mg / cm ^2	Negative	DOOR FRAME	METAL	C	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	HALL	<LOD	0.04
3/25/2026 14:04	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	DRYWALL	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ADDITION	HALL	<LOD	0.37
3/25/2026 14:05	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ADDITION	HALL	<LOD	0.24
3/25/2026 14:07	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	C	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2817	<LOD	0.03
3/25/2026 14:08	Action Lead Paint	0.51	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2817	<LOD	0.31
3/25/2026 14:08	Action Lead Paint	0.51	mg / cm ^2	Negative	WALL	DRYWALL	C	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2809	<LOD	0.12
3/25/2026 14:10	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2815	<LOD	0.02
3/25/2026 14:10	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2815	<LOD	0.01
3/25/2026 14:11	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2818	<LOD	0.16
3/25/2026 14:11	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2818	<LOD	0.01
3/25/2026 14:12	Action Lead Paint	0.51	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2807	<LOD	0.29
3/25/2026 14:12	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2807	<LOD	0.15
3/25/2026 14:12	Action Lead Paint	0.52	mg / cm ^2	Negative	DOOR FRAME	METAL	A	INTACT	WHITE	VA BIRMINGHAM	SSB	ADDITION	2807	<LOD	0.31
3/25/2026 14:15	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.02
3/25/2026 14:15	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	PLASTER	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.03
3/25/2026 14:16	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	PLASTER	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.01
3/25/2026 14:16	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.01
3/25/2026 14:17	Action Lead Paint	0.51	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.01
3/25/2026 14:17	Action Lead Paint	0.46	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.01
3/25/2026 14:17	Action Lead Paint	0.52	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.29
3/25/2026 14:18	Action Lead Paint	0.51	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.03
3/25/2026 14:18	Action Lead Paint	0.47	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.02
3/25/2026 14:18	Action Lead Paint	0.48	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.02
3/25/2026 14:18	Action Lead Paint	0.52	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.07
3/25/2026 14:18	Action Lead Paint	0.52	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.03
3/25/2026 14:18	Action Lead Paint	0.48	mg / cm ^2	Negative	DOOR FRAME	METAL	B	INTACT	WHITE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.04
3/25/2026 14:19	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	PLASTER	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.02
3/25/2026 14:19	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	PLASTER	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.01
3/25/2026 14:19	Action Lead Paint	0.51	mg / cm ^2	Negative	WALL	PLASTER	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.01
3/25/2026 14:19	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	PLASTER	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	HALL	<LOD	0.02
3/25/2026 14:21	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2209	<LOD	0.18
3/25/2026 14:21	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	PLASTER	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2209	<LOD	0.08
3/25/2026 14:22	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	PLASTER	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2209	<LOD	0.2
3/25/2026 14:23	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	PLASTER	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2208	<LOD	0.02
3/25/2026 14:23	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	PLASTER	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2208	<LOD	0.02
3/25/2026 14:23	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2208	<LOD	0.06
3/25/2026 14:25	Action Lead Paint	0.46	mg / cm ^2	Negative	WALL	PLASTER	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2207	<LOD	0.07
3/25/2026 14:26	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	PLASTER	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2215	<LOD	0.01
3/25/2026 14:26	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2215	<LOD	0.03
3/25/2026 14:28	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2226	<LOD	0.05
3/25/2026 14:29	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2226	<LOD	0.01
3/25/2026 14:30	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2225	<LOD	0.01
3/25/2026 14:30	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2225	<LOD	0.03
3/25/2026 14:30	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2225	<LOD	0.03
3/25/2026 14:31	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2223	<LOD	0.02
3/25/2026 14:31	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2223	<LOD	0.02
3/25/2026 14:31	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2223	<LOD	0.03
3/25/2026 14:32	Action Lead Paint	0.51	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2222c	<LOD	0.01
3/25/2026 14:32	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2222c	<LOD	0.04
3/25/2026 14:34	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2202	<LOD	0.01
3/25/2026 14:34	Action Lead Paint	0.48	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2202	<LOD	0.02
3/25/2026 14:34	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	B	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2202b	<LOD	0.02
3/25/2026 14:35	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2202b	<LOD	0.01
3/25/2026 14:35	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	A	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2201a	<LOD	0.01
3/25/2026 14:36	Action Lead Paint	0.52	mg / cm ^2	Negative	WALL	DRYWALL	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2201a	<LOD	0.01
3/25/2026 14:36	Action Lead Paint	0.51	mg / cm ^2	Negative	WALL	PLASTER	C	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2201a	<LOD	0.07
3/25/2026 14:38	Action Lead Paint	0.47	mg / cm ^2	Negative	WALL	PLASTER	D	INTACT	BEIGE	VA BIRMINGHAM	SSB	ORIGINAL	2218	<LOD	0.07
3/25/2026 14:48	Action Lead Paint	1.57	mg / cm ^2	Positive			CALIBRATE	INTACT	RED	VA BIRMINGHAM	SSB	ORIGINAL		1.38	0.22
3/25/2026 14:48	Action Lead Paint	3.49	mg / cm ^2	Positive			CALIBRATE	INTACT	RED	VA BIRMINGHAM	SSB	ORIGINAL		1.23	0.12
3/25/2026 14:49	Action Lead Paint	20	mg / cm ^2	Inconclusive			CALIBRATE	INTACT	RED	VA BIRMINGHAM	SSB	ORIGINAL		1.06	0.1

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

September 2, 2025

Bancroft Architect + Engineers
ATTN: Ms. Vickie Bastin, Project Manager
1471 E. Business Center Drive #900
Mt. Prospect, IL 60056

RE: DVA-Birmingham AL Medical Center Reno – Asbestos Survey

Dear Ms. Bastin:

Per your request and authorization, Shive-Hattery, Inc. performed an asbestos survey for the above referenced project on August 12, 2025. It is our understanding that the building will undergo renovation that may disturb suspect asbestos-containing building materials. It was the intent of the survey to determine what materials within the project area actually contain asbestos.

Methods and Procedures

The review for this project was performed by personnel trained and licensed in the State of Iowa. Available drawings were reviewed, and visual observations of the as-built construction were performed to search out possible suspect materials. Destructive testing was not performed to reveal concealed conditions.

The asbestos survey was conducted using Asbestos Hazard Emergency Response Act (AHERA) standards. Homogeneous areas of similar construction materials were defined. Samples from each suspect homogeneous area were collected from inconspicuous locations. Pertinent information such as location, color, etc. was recorded for each suspect material. The samples were then sent to an accredited laboratory for analysis.

The samples were analyzed for asbestos fibers utilizing the Polarized Light Microscopy method of analysis by EMLab P&K of Phoenix, AZ. Each sample was analyzed for the six different types of fibrous asbestos forms of which a percentage, by volume, is estimated and summarized. As defined by the U.S. Environmental Protection Agency mandated AHERA regulations, the suspect material is considered an asbestos-containing material (ACM) if the material contains more than 1.0 percent of any one or a combination of asbestos fibers.

Pertinent information for each bulk sample has been summarized on the sample analytical results which can be found at the end of this report.

Shive-Hattery | 2839 Northgate Drive | Iowa City, IA 52245 | 319.354.3040 | fax 319.354.6921 | shive-hattery.com

Summary of Findings

Forty-eight (48) samples were collected from sixty-five (65) homogeneous areas. Materials tested with an asbestos content greater than 1.0% are asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area	Asbestos Content
K-Wing	
Ceilings	
1. 2'x2' Gray Ceiling Tile with White Surface	0%
Walls	
2. White Drywall with Brown Paper	0%
3. White Joint Compound on Drywall	0%
4. Cream Tape on Drywall	0%
5. White Compound on Drywall	0%
Flooring	
6. 12"x12" White Floor Tile	0%
7. Yellow Mastic under 12"x12" White Floor Tile	0%
8. Brown Wood Pattern Flooring	0%
9. Blue Mastic under Brown Wood Pattern Flooring	0%
10. Multicolored Carpet	0%
11. Green Mastic with Paint under Multicolored Carpet	0%
Miscellaneous	
12. Brown (Gray) Cove Base	0%
13. Tan Mastic under Brown Cove Base	0%
Thermal System Insulation	
14. Brown Duct Wrap with Paint	0%
15. White Mastic on Duct Wrap	0%
B-Wing	
Ceilings	
16. 2'x2' Gray Ceiling Tile with White Surface	0%
17. Tan Base Coat (Fireproofing)	0%
18. White Skim Coat with Paint (Fireproofing)	0%
19. White Plaster with Paint (Fireproofing)	0%
20. Gray Plaster (Fireproofing)	0%
Walls	
21. Gray Base Coat (Plaster)	0%
22. White Skim Coat with Paint Layers on Gray Base Coat	0%
23. White Drywall with Brown Paper	0%
24. Cream Tape on White Drywall	0%
25. White Compound on White Drywall	0%
26. Black Non-Fibrous Material (Waterproofing)	**6.5120%**
27. Light Gray Drywall with Brown Paper	0%
28. White Joint Compound on Light Gray Drywall	0%
29. Cream Tape on Light Gray Drywall	0%
30. White Compound with Paint on Light Gray Drywall	0%
Flooring	
31. Brown Wood Pattern Flooring	0%
32. Yellow Mastic under Brown Wood Pattern Flooring	0%

Homogeneous Area		Asbestos Content
33.	Semi-Transparent Mastic under Brown Wood Flooring	0%
34.	White Flooring under Brown Wood Pattern Flooring	0%
35.	Brown Mastic under White Flooring	0%
36.	White Floor Tile under Brown Wood Pattern Flooring	0%
37.	Yellow Mastic under White Floor Tile under Wood Flooring	0%
38.	12”x12” White Floor Tile	0%
39.	Yellow Mastic under 12”x12” White Floor Tile	0%
40.	Green Mastic under 12”x12” White Floor Tile	0%
41.	White Cementitious Material under 12” White Floor Tile	0%
42.	12”x12” Tan Floor Tile	0%
43.	Yellow Mastic under 12”x12” Tan Floor Tile	0%
44.	Gray Flooring (Carpet Tile)	0%
45.	Yellow Mastic under Gray Carpet Tile	0%
46.	Blue Mastic under Gray Carpet Tile	0%
47.	White Floor Tile under Gray Carpet Tile	0%
48.	Black Mastic under White Floor Tile under Gray Carpet Tile	0%
49.	Yellow Mastic under White Floor Tile under Gray Carpet Tile	0%
50.	Gray Non-Fibrous Material (Gray Flooring)	0%
51.	Blue Mastic under Gray Flooring	0%
52.	Light Brown Cementitious Material (Filler) under Gray Flooring	0%
53.	Yellow Mastic under Gray Flooring and Filler	0%
54.	Blue Green Mastic under Gray Flooring	0%
Miscellaneous		
55.	Brown Non-Fibrous Material (Base Cove) with Paint	0%
56.	Yellow Mastic under Brown Base Cove	0%
57.	Black Base Cove	0%
58.	Tan Mastic under Black Base Cove	0%
59.	Tan Cove Base	0%
60.	Brown Window Glazing	0%
61.	**Black Window Glazing**	**5.8363%**
62.	Black Window Caulk	0%
63.	White Compound with Paint on Black Window Caulk	0%
Thermal System Insulation		
64.	Gray Non-Fibrous Material (Duct Sealant)	0%
65.	Gray Caulk on Pipe above Ceiling in Hallway	0%

*Materials were point counted for more accurate results.

Opinion of Anticipated Asbestos Abatement Costs

The following opinion of asbestos abatement costs has been developed:

	Item	Quantity	Unit Cost	Extended Cost
1.	Mobilization	1 EA	$1,600.00	$1,600.00
2.	Black Waterproofing*	1,400 SF	$20.00	$28,000.00
3.	Windows (Black Glazing)	24 EA	$600.00	$14,400.00
			Subtotal Construction	$44,000.00
			±15% Contingencies	$7,000.00
			Total Construction	$51,000.00

The above cost opinion does not include the abatement of all asbestos-containing materials in the building. Only the ACM associated with the AI Medical Center Renovation have been included.

*The black waterproofing on the exterior walls is assumed to go under the plaster from floor to ceiling.

Recommendations

It is our recommendation that the windows and black waterproofing on the walls between K and B wings be removed as asbestos-containing material by a licensed abatement contractor.

It is in the Owner's best interest to abate all asbestos from the project area and have these spaces asbestos free before the renovation begins. This eliminates future liability from accidental exposure to contractors and maintenance workers.

Please call our office if you should have any questions or comments.

Sincerely,

SHIVE-HATTERY, INC.



Samuel S. Becker
License Number IA 25-13280 INSP
Expiration Date: March 27, 2026

SSB/mas

Enc.

eurofins | Built Environment Testing

Report for:

Chad Siems
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, LLC
Project: 224000844-0; DVA Birmingham VA
EML ID: 4189372

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 08-19-2025 and 08-20-2025

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EB-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins Aerotech Built Environment Testing, LLC
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: 224000844-0; DVA Birmingham VA

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-20-2025

ASBESTOS PLM REPORT

Total Samples Submitted:	48
Total Samples Analyzed:	48
Total Samples with Layer Asbestos Content > 1%:	3

Location: 1, 2"x2" Ceiling Tile

Lab ID-Version‡: 20937675-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	60% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 2, 2"x2" Ceiling Tile

Lab ID-Version‡: 20937676-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	65% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 3, 2"x2" Ceiling Tile

Lab ID-Version‡: 20937677-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	65% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 4, White Mastic on Ductwork Wrap

Lab ID-Version‡: 20937678-1

Sample Layers	Asbestos Content
Brown Wrap with Paint	ND
White Mastic	ND
Composite Non-Asbestos Content:	5% Glass Fibers 3% Cellulose
Sample Composite Homogeneity:	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins Aerotech Built Environment Testing, LLC
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: 224000844-0; DVA Birmingham VA

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-20-2025

ASBESTOS PLM REPORT

Location: 5, Drywall Walls

Lab ID-Version‡: 20937679-1

Sample Layers	Asbestos Content
White Compound	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 6, Drywall Walls

Lab ID-Version‡: 20937680-1

Sample Layers	Asbestos Content
White Compound with Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 7, Drywall Walls

Lab ID-Version‡: 20937681-1

Sample Layers	Asbestos Content
White Compound Fragment	ND
Cream Tape	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 8, 12"x12" White Floor Tile/Mastic

Lab ID-Version‡: 20937682-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

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(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: 224000844-0; DVA Birmingham VA

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-20-2025

ASBESTOS PLM REPORT

Location: 9, 12"x12" White Floor Tile/Mastic Lab ID-Version‡: 20937683-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 10, 12"x12" White Floor Tile/Mastic Lab ID-Version‡: 20937684-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 11, Mastic Under Gray Base Trim Lab ID-Version‡: 20937685-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 12, Mastic Under Gray Base Trim Lab ID-Version‡: 20937686-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 13, Mastic Under Gray Base Trim

Lab ID-Version‡: 20937687-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 14, Wood Laminate Flooring W/Mastic

Lab ID-Version‡: 20937688-1

Sample Layers	Asbestos Content
Brown Wood Pattern Flooring	ND
Blue Mastic	ND
Composite Non-Asbestos Content:	< 1% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 15, Mastic Under Carper

Lab ID-Version‡: 20937689-1

Sample Layers	Asbestos Content
Multicolored Carpet	ND
Green Mastic with Paint	ND
Composite Non-Asbestos Content:	70% Synthetic Fibers 2% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 16, Plaster Wall

Lab ID-Version‡: 20937690-1

Sample Layers	Asbestos Content
White Skim Coat with Paint Layers	ND
Gray Base Coat	ND
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 17, Mastic Under Base Trim Lab ID-Version‡: 20937691-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material with Paint	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 18, Mastic Under Base Trim Lab ID-Version‡: 20937692-1

Sample Layers	Asbestos Content
Black Cove Base	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 19, Flooring Under Wood Laminate Floor Lab ID-Version‡: 20937693-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
White Flooring	ND
Brown Mastic	ND
Sample Composite Homogeneity:	Poor

Location: 20, Flooring Under Wood Laminate Floor Lab ID-Version‡: 20937694-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
White Flooring	ND
Brown Mastic	ND
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 21, Exterior Window Glazing

Lab ID-Version‡: 20937695-1

Sample Layers	Asbestos Content
Brown Window Glazing	ND
Sample Composite Homogeneity:	Moderate

Location: 22, Exterior Window Glazing

Lab ID-Version‡: 20937696-1

Sample Layers	Asbestos Content
Black Window Glazing	3% Chrysotile
Sample Composite Homogeneity:	Good

Location: 23, Interior Window Caulk

Lab ID-Version‡: 20937697-1

Sample Layers	Asbestos Content
White Compound with Paint	ND
Black Caulk	ND
Sample Composite Homogeneity:	Moderate

Location: 24, Drywall wall

Lab ID-Version‡: 20937698-1

Sample Layers	Asbestos Content
White Compound	ND
Cream Tape	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 25, Black Waterproofing on Wall

Lab ID-Version‡: 20937699-1

Sample Layers	Asbestos Content
Black Non-Fibrous Material	5% Chrysotile
Sample Composite Homogeneity:	Good

Location: 26, Mastic on Ductwork

Lab ID-Version‡: 20937700-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 27, Plaster Wall

Lab ID-Version‡: 20937701-1

Sample Layers	Asbestos Content
White Skim Coat with Paint	ND
Brown Base Coat	ND
Sample Composite Homogeneity:	Moderate

Location: 28, 2"x2" Ceiling Tile

Lab ID-Version‡: 20937702-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: 29, 12"x12" White Floor Tile/Mastic

Lab ID-Version‡: 20937703-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 30, 2"x2" Ceiling Tile

Lab ID-Version‡: 20937704-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 31, Plaster Wall

Lab ID-Version‡: 20937705-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: 32, Fireproofing on Ceiling-Hall

Lab ID-Version‡: 20937706-1

Sample Layers	Asbestos Content
White Skim Coat with Paint	ND
Tan Base Coat	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 33, Gray Caulk on Pipe-hall Lab ID-Version‡: 20937707-1

Sample Layers	Asbestos Content
Gray Caulk	ND
Sample Composite Homogeneity:	Good

Location: 34, Fireproofing on Ceiling-Hall Lab ID-Version‡: 20937708-1

Sample Layers	Asbestos Content
White Plaster with Paint	ND
Sample Composite Homogeneity:	Good

Location: 35, Plaster Fireproofing on Ceiling-2215 Lab ID-Version‡: 20937709-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: 36, Flooring Under Wood Laminate Floor-2215 Lab ID-Version‡: 20937710-1

Sample Layers	Asbestos Content
Brown Wood Pattern Flooring	ND
Semi-Transparent Mastic	ND
White Floor Tile	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	< 1% Glass Fibers
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 37, Mastic Under Base Trim/2215 Lab ID-Version‡: 20937711-1

Sample Layers	Asbestos Content
Black Cove Base	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 38, Interior Window Glazing Lab ID-Version‡: 20937712-1

Sample Layers	Asbestos Content
Black Window Glazing	3% Chrysotile
Sample Composite Homogeneity:	Good

Location: 39, 12"x12" Tan Floor Tile/Mastic-2216 Lab ID-Version‡: 20937713-1

Sample Layers	Asbestos Content
Tan Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 40, 12"x12" White Floor Tile/Mastic-Hall Lab ID-Version‡: 20937714-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Green Mastic	ND
White Cementitious Material	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 41, Mastic Under Base Trim-2216

Lab ID-Version‡: 20937715-1

Sample Layers	Asbestos Content
Tan Cove Base	ND
Sample Composite Homogeneity:	Good

Comments: No mastic observed.

Location: 42, Drywall Wall-2216

Lab ID-Version‡: 20937716-1

Sample Layers	Asbestos Content
White Compound with Paint	ND
Cream Tape	ND
White Joint Compound	ND
Light Gray Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 43, Drywall Wall-2203

Lab ID-Version‡: 20937717-1

Sample Layers	Asbestos Content
White Compound with Paint	ND
Cream Tape	ND
White Joint Compound	ND
Light Gray Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 44, Gray 2"x2" Ceiling Tile-2203

Lab ID-Version‡: 20937718-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: 45, Flooring Under Gray Carpet-2203

Lab ID-Version‡: 20937719-1

Sample Layers	Asbestos Content
Gray Flooring	ND
Yellow Mastic	ND
White Floor Tile	ND
Black Mastic	ND
Composite Non-Asbestos Content:	2% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 46, Flooring Under Gray Carpet-2227

Lab ID-Version‡: 20937720-1

Sample Layers	Asbestos Content
Gray Flooring	ND
Blue Mastic	ND
White Floor Tile	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	2% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 47, Gray Flooring with Floor Filler-2201A

Lab ID-Version‡: 20937721-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Blue Mastic	ND
Light Brown Cementitious Material	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	2% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 48, Gray Flooring with Mastic-2226

Lab ID-Version‡: 20937722-1

Sample Layers	Asbestos Content
Gray Flooring	ND
Blue-Green Mastic	ND
Composite Non-Asbestos Content:	2% Glass Fibers < 1% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Kaitlyn Walker

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Report for:

Chad Siems
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Built Environment Testing West, LLC
Project: 224000844-0; DVA Birmingham VA
EML ID: 4189372

Approved by:



Technical Manager
Danny Li

Dates of Analysis:
Asbestos-Gravimetric 400 Point Count: 08-25-2025

Service SOPs: Asbestos-Gravimetric 400 Point Count (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EB-AS-S-1262)
NVLAP Lab Code 200757-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested.

Eurofins Built Environment Testing West, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins Built Environment Testing West, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: 224000844-0; DVA Birmingham VA

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-25-2025

ASBESTOS GRAVIMETRIC PT. COUNT REPORT

Location:	22, Exterior Window Glazing		
Sample Layer	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration§**
Black Window Glazing	Chrysotile	42	4.8083%
Layer Asbestos Totals:		42	4.8083%
Total Points Counted: 400			Organic Component: 36.7498%
			Acid Soluble Component: 17.4568%
Lab ID-Version‡: 20980849-1			Acid Insoluble Inorganic Component: 45.7934%

Location:	25, Black Waterproofing on Wall		
Sample Layer	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration§**
Black Non-Fibrous Material	Chrysotile	136	6.5120%
Layer Asbestos Totals:		136	6.5120%
Total Points Counted: 400			Organic Component: 78.6979%
			Acid Soluble Component: 2.1492%
Lab ID-Version‡: 20980850-1			Acid Insoluble Inorganic Component: 19.1530%

Location:	38, Interior Window Glazing		
Sample Layer	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration§**
Black Window Glazing	Chrysotile	51	5.8363%
Layer Asbestos Totals:		51	5.8363%
Total Points Counted: 400			Organic Component: 37.6049%
			Acid Soluble Component: 16.6200%
Lab ID-Version‡: 20980851-1			Acid Insoluble Inorganic Component: 45.7750%

§The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and then converted to percentage using the final residual weight of the sample.

Each sample was separated into a representative subsample and analyzed individually. The subsample was ashed and dissolved in acid to achieve the final residual weight. The residual material was point counted following the quantitative guidelines in EPA Method 600/R-93/116.

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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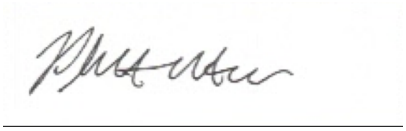
Client: Shive-Hattery
C/O: Chad Siems
Re: 224000844-0; DVA Birmingham VA

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-25-2025

ASBESTOS GRAVIMETRIC PT. COUNT REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Philip Newton

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

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San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab Code 200738-0; LELAP #04153
Cherry Hill, NJ: NVLAP Lab Code 200844-0; NY-ELAP #11951
Ft. Worth, TX: NVLAP Lab Code 200754-0; Texas DSHS #300365

CONTACT INFORMATION

Company: Shive-Hattery	Address: 2839 Northgate Drive, Iowa City, Iowa 52245
Contact: Chad Siems	Special Instructions: *Point Count All Results Between 1-3%, Stop at 1st Positive *Stop at 1st Positive Greater Than 10%
Phone: 319-330-2424	

PROJECT INFORMATION

Project ID: 224000844-0
Project Desc.: DVA Birmingham VA
Project Zip Code:
Sampling Date & Time: 8/12/25
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
1-48	See Attached	B	STD		

PCM Air		PLM									Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bl	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rul	Lead Analysis			
		X											

004189372

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	8/14/25		8/15/25 9:30am

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html
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SHIVEHATTERY
ARCHITECTURE + ENGINEERING



K-Wing

1. 2'x2' Ceiling Tile
2. 2'x2' Ceiling Tile
3. 2'x2' Ceiling Tile
4. White Mastic on Ductwork Wrap
5. Drywall Walls
6. Drywall Walls
7. Drywall Walls
8. 12"x12" White Floor Tile/Mastic
9. 12"x12" White Floor Tile/Mastic
10. 12"x12" White Floor Tile/Mastic
11. Mastic under Gray Base Trim
12. Mastic under Gray Base Trim
13. Mastic under Gray Base Trim
14. Wood Laminate Flooring w/ Mastic
15. Mastic under Carpet

B-Wing

16. Plaster Wall
17. Mastic under Base Trim
18. Mastic under Base Trim
19. Flooring under Wood Laminate Floor
20. Flooring under Wood Laminate Floor
21. Exterior Window Glazing
22. Interior Window Glazing
23. Interior Window Caulk
24. Drywall Wall
25. Black Waterproofing on Wall
26. Mastic on Ductwork
27. Plaster Wall
28. 2'x2' Ceiling Tile
29. 12"x12" White Floor Tile/Mastic
30. 2'x2' Ceiling Tile
31. Plaster Wall
32. Fireproofing on Ceiling – Hall
33. Gray Caulk on Pipe – Hall
34. Fireproofing on Ceiling – Hall
35. Plaster Fireproofing on Ceiling – 2215
36. Flooring under Wood Laminate Floor – 2215
37. Mastic under Base Trim – 2215
38. Interior Window Glazing – 2215
39. 12"x12" Tan Floor Tile/Mastic – 2216
40. 12"x12" White Floor Tile/Mastic – Hall
41. Mastic under Base Trim – 2216
42. Drywall Wall – 2216
43. Drywall Wall – 2203
44. Gray 2'x2' Ceiling Tile – 2203
45. Flooring under Gray Carpet Tile – 2203
46. Flooring under Gray Carpet Tile – 2227
47. Gray Flooring with Floor Filler – 2201A
48. Gray Flooring with Mastic – 2226

JC 8/15/25



N

1 LIFE SAFETY/SPACE PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS

1/8" = 1'-0"

EYE CLINIC SPACE PLAN PROGRAM		
QTY	ROOM NAME	AREA
1	TOILET	54 SF
1	WAITING	401 SF
BUILDING SERVICE		
1	ELEC EXST	76 SF
1	EQUIP EXST	8 SF
1	HAC	41 SF
1	IT CLOSET EXST	28 SF
1	MECHANICAL ROOM	623 SF
CIRCULATION		
15	CORR	4411 SF
OPH		
1	OPH DILATION	111 SF
11	OPH EXAM	1559 SF
4	OPH IMAGING	631 SF
4	OPH OFFICE	511 SF
1	OPH STOR	27 SF
1	OPH WAITING	109 SF
2	OPH WORK AREA	125 SF
OPT		
1	OPT BARIATRIC EXAM	150 SF
1	OPT DILATION/ WAITING	165 SF
5	OPT EXAM	591 SF
2	OPT EXAM STUDENT	228 SF
2	OPT IMAGING	253 SF
2	OPT OFFICE	223 SF
1	OPT OFFICE CHIEF	101 SF
3	OPT TECH	390 SF
1	OPTIC SHOP	323 SF
SHARED SUPPORT		
1	BREAK/ LOCKERS	198 SF
1	RECEPTION/ CHECK IN/ CHECK OUT	296 SF
3	STOR	132 SF
2	TOILET PUBLIC	112 SF
2	TOILET STAFF	109 SF
1	WAITING AREA	734 SF
Grand total: 74		12718 SF

BUILDING CODE REVIEW

CONSTRUCTION CLASSIFICATIONS:	TYPE II
AUTOMATIC FIRE SUPPRESSION:	ALL AREAS IN ACCORDANCE WITH NFPA 13
OCCUPANCY CLASSIFICATIONS:	BUSINESS (B) IN INSTITUTIONAL (I-2)
AREA OF WORK:	PROJECT AREA APPROXIMATELY: 13, 000 SF - SECOND FLOOR

APPLICABLE CODES

AUTHORITY HAVING JURISDICTION: VISN 07 SAFETY OFFICER
ALL WORK SHALL COMPLY WITH THE FOLLOWING CODES:

1. VA DIRECTORIES, DESIGN MANUALS, MASTER SPECIFICATIONS, VA NATIONAL CAD STANDARD APPLICATION GUIDE, AND OTHER GUIDANCE ON THE TECHNICAL INFORMATION LIBRARY (TIL) (HTTP://WWW.CFM.VA.GOV/TIL/)
2. INTERNATIONAL BUILDING CODE (IBC) (ONLY PERTAINING TO ITEMS NOT ADDRESSED BY NFPA 101)
3. NFPA 101 LIFE SAFETY CODE
4. NFPA NATIONAL FIRE CODES WITH THE EXCEPTION OF NFPA 5000 AND NFPA 900
5. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS
6. VA SEISMIC DESIGN REQUIREMENTS, H-18-8
7. NATIONAL ELECTRICAL CODE (NEC)
8. INTERNATIONAL PLUMBING CODE (IPC)
9. ASME BOILER AND PRESSURE VESSEL CODE
10. ASME CODE FOR PRESSURE PIPING
11. ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS (ABAAS) INCLUDING VA SUPPLEMENT
12. BARRIER FREE DESIGN GUIDE (PG-18-13)
13. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AMERICAN CONCRETE INSTITUTE AND COMMENTARY (ACI 318)
14. INTERNATIONAL MECHANICAL CODE

BUILDING DATA

OCCUPANCY		BUSINESS (B)
APPLICABLE CODE		NFPA 101
CONSTRUCTION TYPE		TYPE II (NFPA 220)
GROSS AREA:	SECOND FLOOR 13,150 SF	

AREA SEPARATION PROTECTION

APPLICABLE CODE	SECTION	NFPA 101 (REQUIRED)	PROVIDED
OCCUPANCY SEPERATION BUSINESS (B) / INSTITUTIONAL (I-2)	6.1.14.4.1(b)	2-HOUR	2-HOUR
STORAGE (INCINDENTAL USE) WHERE DEGREE OF HAZARD IS GREATER THAN GENERAL OCCUPANCY	38.3.2.2	1-HOUR	1-HOUR
STAIR ENCLOSURE	7.1.3.2.1 (3)(b)	1-HOUR MIN	2-HOURS (EXIST)

* NOTE - IF BUILDING PROTECTED THROUGHOUT BY APPROVED AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH (NFPA 101) 9.7.1.1(1)

EGRESS REQUIREMENTS

	SECTION	NFPA 101, 2021
OCCUPANCY LOAD BUSINESS (B) OCCUPANCY 150 sq f/person	7.3.1.2	88 OCCUPANTS
EXIT TRAVEL DISTANCE BUSINESS (B) OCCUPANCY	38.2.6.3	300'
CORRIDOR WIDTH (MIN.) BUSINESS (B) OCCUPANCY	38.2.3.2 and 7.3.4.1	44" MIN
DEAD END CORRIDORS BUSINESS (B) OCCUPANCY	38.2.5.3.1	50'
COMMON PATH OF TRAVEL: BUSINESS (B) OCCUPANCY	38.2.5.2.1	100'
MINIMUM HEADROOM	7.1.5.1 (1)	7'-0"

EMERGENCY EGRESS ILLUMINATION: AVERAGE OF 1.0 FOOT CANDLES AT EGRESS PATHS WITH A MIN. OF 0.1 CANDLE AT ANY POINT.

POWER SUPPLY: MEANS OF EGRESS ILLUMINATION NORMAL POWER IS TO BE PROVIDED BY PREMISE'S ELECTRICAL SYSTEM.
a. EGRESS ILLUMINATION: EITHER BATTERIES, SECOND PRIMARY SOURCE OR GENERATOR WITH A MIN. OF A 1 1/2 HOUR DURATION.
b. EXIT SIGNS: ILLUMINATED AT ALL TIME, EMERGENCY POWER REQ. WITH 1 1/2 HOUR DURATION.

FIRE EXTINGUISHER REQUIREMENTS

FIRE EXTINGUISHER REQUIREMENTS NFPA 10: (NFPA 10, 2021, TABLE 6.2.1.1)

HAZARD TYPE: TYPE A, ORDINARY HAZARD.
FE 2A (ORDINARY HAZARD) - 3,000 SF MAX FLOOR AREA
MAX TRAVEL TO EXTINGUISHER: 75' REQUIRED: X PROVIDED: X

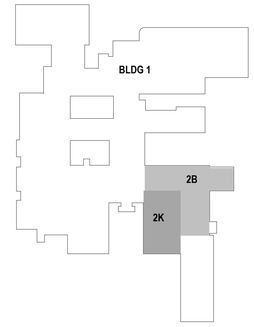
HAZARD TYPE: TYPE B FLAMMABLE HAZARD.
FE 4A (HIGH HAZARD) - 4,000 SF MAX FLOOR AREA
MAX TRAVEL TO EXTINGUISHER: 50' REQUIRED: X PROVIDED: X

GENERAL SHEET NOTES

1. SEE SHEET GI101.1 FOR OVERALL SECOND FLOOR LIFE SAFETY PLAN.
2. SEE AE501 FOR PARTITION TYPES DETAILS.

LEGEND

- 2 HOUR FIRE -RATED BARRIER EXISTING
- 1 HOUR FIRE -RATED BARRIER EXISTING
- NON-RATED SMOKE PARTITION EXISTING
- 2 HOUR FIRE -RATED BARRIER
- 1 HOUR FIRE -RATED BARRIER
- NON-RATED SMOKE PARTITION
- OCCUPANCY SEPARATION
- STARTING POINT
- MAXIMUM EGRESS TRAVEL DISTANCE
- DISTANCE — MAXIMUM COMMON PATH OF EGRESS TRAVEL
- FEC — FIRE EXTINGUISHER CABINET
- F — FIRE ALARM PULL STATION (SEE MEP & FP DWG'S FOR LOCATIONS)
- FAAP — FIRE ALARM ANNUNCIATOR PANEL
- EXIT SIGN (SEE MEP & FP DWG'S FOR EXIT LOCATIONS)
- EGRESS STAIR
- XXX SF / X / XXX | XX — OCCUPANCY LOAD ANNOTATION (ROOM AREA / USE GROUP / LOAD FACTOR/ OCCUPANT LOAD)



KEYPLAN

REVIEW ONLY - NOT FOR CONSTRUCTION

65% DESIGN DEVELOPMENT SUBMITTAL	08/25/2025
35% SCHEMATIC DESIGN RESUBMITTAL	06/30/2025
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
VA CONTRACT NO. 36C24724C0036
1471 E Business Center Dr, Mount Prospect, IL 60056
T: 847-952-9362
www.bancroft-ae.com
Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: GENERAL - LIFE SAFETY/SPACE PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS

Phase: 65% DESIGN DEVELOPMENT

Approved: Project Director

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 08/25/2025 | Checked: CR | Drawn: LD

Project Number: 521-24-102

Building Number: #1

Drawing Number: GI101.2

VA FORM 08-6231



Sample Numbers and Locations in blue

N

1 **DEMOLITION PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS**

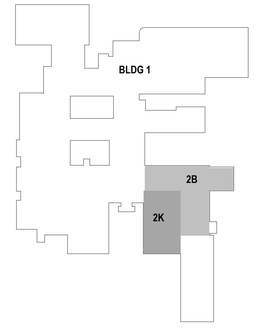
1/8" = 1'-0"

GENERAL SHEET NOTES

1. ALL DOORS SHOWN TO BE DEMOLISHED ON THE DRAWINGS TO HAVE DOOR FRAME AND HARDWARE REMOVED. DOOR HARDWARE TO BE RETURNED TO THE VA.
2. ALL EXTERIOR WINDOW FRAMES AND GLAZING, ALONG WITH INTERIOR SOLID SURFACE SILLS, TO REMAIN. PROTECT DURING CONSTRUCTION.

KEYNOTES

1	REMOVE EXISTING FLOOR FINISH AND WALL BASE IN ITS ENTIRETY. LEVEL EXISTING SUBFLOOR, ASSUME MIN 3/4" DEPTH OF LEVELLING. PREP FLOOR PER MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION OF NEW FINISHES.
2	REMOVE EXISTING FFE SYSTEM IN ITS ENTIRETY.
3	REMOVE PORTION OF EXISTING CMU WALL TO ACCOMMODATE PASSAGE OPENING.
4	REMOVE EXISTING PLUMBING FIXTURE AND ALL ASSOCIATED CARRIERS IN THEIR ENTIRETY. SEE PLUMBING DRAWINGS FOR EXTENT OF PIPING AND ACCESSORY DEMOLITION.



KEYPLAN

REVIEW ONLY - NOT FOR CONSTRUCTION

65% DESIGN DEVELOPMENT SUBMITTAL	08/25/2025
35% SCHEMATIC DESIGN RESUBMITTAL	06/30/2025
35% SCHEMATIC DESIGN	05/29/2024
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

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Mount Prospect, IL 60056
T: 847-952-9362
www.bancroft-ae.com
Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ARCHITECTURAL - DEMOLITION PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS

Phase: 65% DESIGN DEVELOPMENT

Approved: Project Director

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Project Number: 521-24-102

Building Number: #1

Location: BIRMINGHAM VAMC

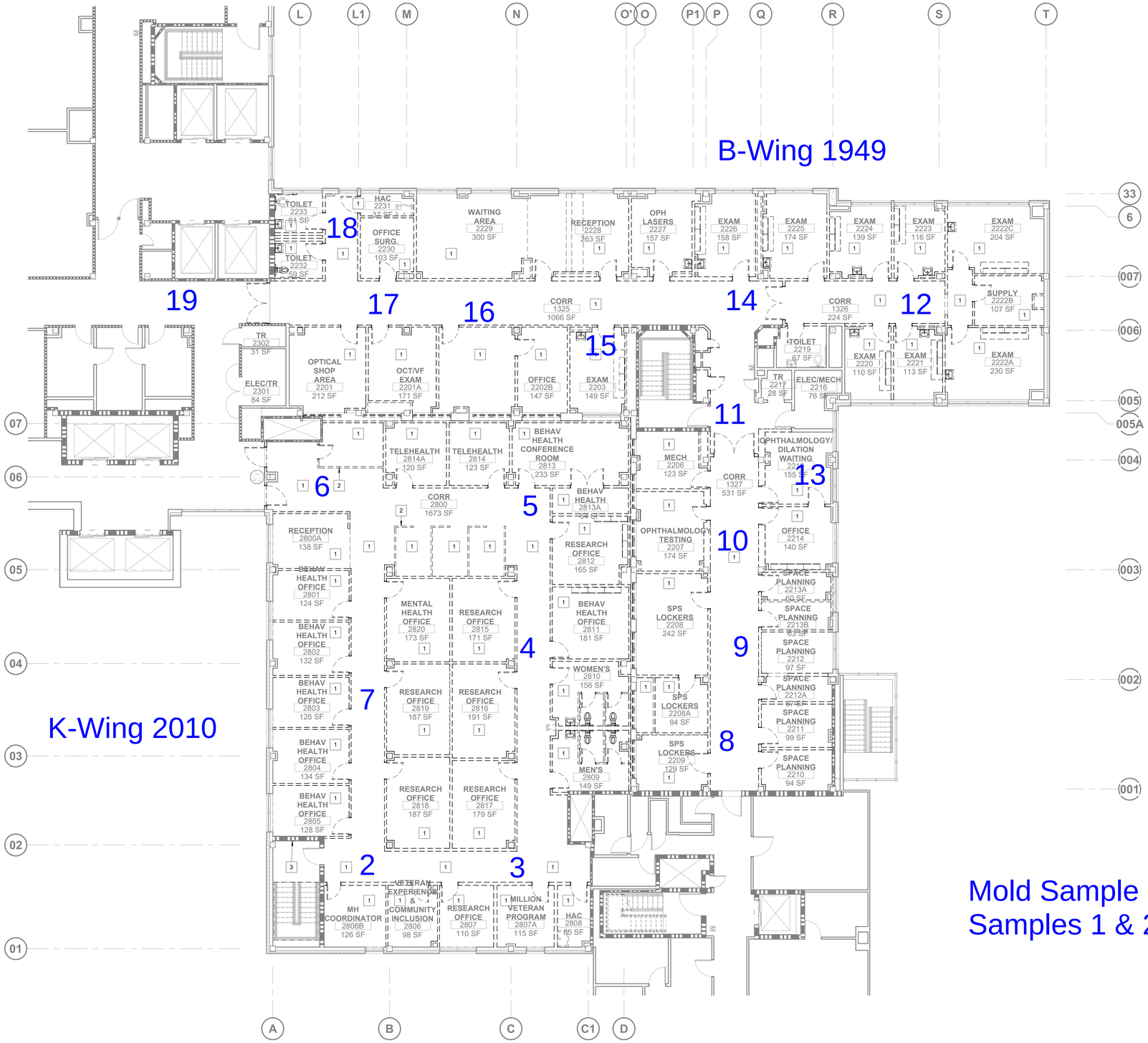
Issue Date: 08/25/2025

Checked: CR

Drawn: LD

Drawing Number: AD102

VA FORM 08-6231



DEMOLITION PLAN - PARTIAL SECOND FLOOR - 2K/2B AREA

1/8" = 1'-0"

Mold Sample Locations in Blue
Samples 1 & 20 Outdoors

GENERAL SHEET NOTES

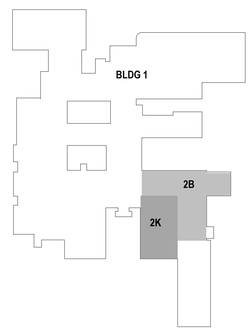
1. ALL DOORS SHOWN TO BE DEMOLISHED ON THE DRAWINGS TO HAVE DOOR FRAME AND HARDWARE REMOVED. DOOR HARDWARE TO BE RETURNED TO THE VA.
2. ALL EXTERIOR WINDOW FRAMES AND GLAZING, ALONG WITH INTERIOR SOLID SURFACE SILLS, TO REMAIN. PROTECT DURING CONSTRUCTION.

KEYNOTES

1 REMOVE EXISTING FLOOR FINISH UP TO SUBSTRATE, WALL BASE, AND ALL WALL-MOUNTED ITEMS.

2 REMOVE EXISTING FFE SYSTEM IN ITS ENTIRETY.

3 REMOVE PORTION OF EXISTING CMU WALL TO ACCOMMODATE PASSAGE OPENING.



KEYPLAN

REVIEW ONLY - NOT FOR CONSTRUCTION

35% SCHEMATIC DESIGN RESUBMITTAL	06/30/2025
35% SCHEMATIC DESIGN	05/29/2024
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

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STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ARCHITECTURAL - DEMOLITION PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS

Phase: 35% SCHEMATIC DESIGN RESUBMITTAL

Approved: Project Director

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Project Number: 521-24-102

Building Number: #1

Location: BIRMINGHAM VAMC

Drawing Number: AD102

Issue Date: 06/30/2025 | Checked: Checker | Drawn: Author

VA FORM 08-6231

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

September 2, 2025

Bancroft Architects + Engineers
ATTN: Ms. Vickie Bastin, Project Manager
1471 E. Business Center Dr. #900
Mt. Prospect, IL 60056

RE: DVA-Birmingham AL Medical Center Renovation – Mold Testing

Dear Ms. Bastin,

Per your request and authorization, Shive-Hattery, Inc. performed an indoor air quality investigation for areas scheduled for renovation activities at the Birmingham Medical Center on the 2nd floor for the B-wing and K-wing. The intent of the investigation was to determine the status of mold in the air and, if necessary, make recommendations to improve the indoor air quality. Initial testing was conducted on August 12, 2025.

Methods

Project sampling and reporting was conducted by a Certified Microbial Consultant (CMC), and Certified Indoor Environmental Consultant (CIEC) trained and certified by the American Council for Accredited Certification (ACAC).

During the investigation, samples were taken randomly, but uniformly across the renovation project area. The sampling was performed using spore traps. The samples were then sent to an American Industrial Hygiene Association (AIHA) accredited laboratory for analysis. Spore trap samples are taken to inventory all types of molds: viable (living), dead, and dormant. Spore trap samples were performed with a high-volume sample pump set at 15 L/min and were sampled for 5 minutes for a total sample volume of 75 liters. The filters were Air-O-Cell cassettes and were provided by Aerotech Laboratories Inc. Results group all mold spores together (viable, dead, and dormant) and identify the specific type and quantity of mold found. Aerotech analyzes 100% of the sample. Slides containing greater than 500 fungal spores are difficult to count accurately due to overcrowding and are therefore estimated. Similarly, excessive non-microbial particulate can mask the presence of fungal spores, thereby reducing counting accuracies. All slides are graded with a debris scale for data qualification.

Pertinent information for each sample has been summarized in the sample analytical results section which can be found at the end of this report. The testing is separated into initial and verification testing.

Summary of Findings

Initial Testing:

Spore trap samples from initial testing (08/12/2025). Eighteen spore trap samples were taken from throughout the project area with two background samples taken prior to, and at the conclusion of testing. The results were as follows:

Table 1: Initial sampling spore trap results

Sample Number	Location	Total Fungal Spore Count (#/m^3)
1	Outdoors	2,400
2	Hall (Room 2806B)	<13
3	Hall (Room 2807A)	13
4	Hall (Room 2816)	53
5	Hall (Room 2813)	110
6	Entry/Front Desk	53
7	Hall (Room 2819)	40
8	Hall (Room 2209)	130
9	Hall (Room 2213)	80
10	Hall (Room 2207)	280
11	Hall (Room 2216)	80
12	Hall (Room 2221)	240
13	Room 2215	270
14	Hall (Room 2226)	270
15	Room 2203	53
16	Room 2202	120
17	Hall (Room 2201)	120
18	Hall (Room 2231)	150
19	Hall (Room 2303)	67
20	Outdoors	3,900

Samples 2-15, 17-18: The indoor mold counts in these locations were lower or comparable with the mold counts found outside for individual and total counts. We consider this space to be Condition 1 (normal fungal ecology): an indoor environment that may have settled spores, fungal fragments, or traces of actual growth whose identity, location, and quantity are reflective of a normal fungal ecology for a similar indoor environment.

Samples 16 and 19: The indoor mold counts in these locations were lower or comparable with the mold counts found outside for individual and total counts. However, Stachybotrys mold was identified in each of these samples. Stachybotrys is a mold type that isn't typically airborne due to its size and the fact that this mold typically is grown in saturated conditions. Therefore, results that identify Stachybotrys are typically underreported.

This mold type is a concern in the healthcare environment as certain species of Stachybotrys can produce mycotoxins that are harmful to humans. Immunocompromised individuals are particularly susceptible to this type of mold.

We consider this space to be Condition 2 (settled spores): an indoor environment which is primarily contaminated with settled spores that were dispersed directly or indirectly from a Condition 3 area, and which may have traces of actual growth.

Indoor Air Quality Audit: An indoor air quality audit was performed using a Q-trak instrument that measures Carbon Monoxide (CO), Carbon Dioxide (CO_2), Relative Humidity (RH), and Temperature (°F).

Table 2: Indoor Air Quality Audit from initial sampling

Location	Relative Humidity (%)			Temperature (°F)		CO_2 (ppm)		CO (ppm)	
	Actual	Recommended		Actual	ASHRAE Recommended	Actual	ASHRAE Recommended	Actual	Recommended
		OSHA	ASHRAE						
Outdoors	69.4	<60	30-60	85.6	68-79	476	<1,000	1.7	50
Hall (Room 2806B)	59.5	<60	30-60	74.8	68-79	772	<1,000	0.8	50
Hall (Room 2807A)	57.9	<60	30-60	76.0	68-79	849	<1,000	0.9	50
Hall (Room 2816)	58.3	<60	30-60	74.5	68-79	821	<1,000	1.0	50
Hall (Room 2813)	58.3	<60	30-60	73.9	68-79	813	<1,000	0.7	50
Entry/Front Desk	60.3	<60	30-60	73.5	68-79	808	<1,000	1.0	50
Hall (Room 2819)	59.8	<60	30-60	74.1	68-79	851	<1,000	0.7	50
Hall (Room 2209)	52.7	<60	30-60	73.5	68-79	734	<1,000	0.7	50
Hall (Room 2213)	53.6	<60	30-60	73.1	68-79	758	<1,000	0.7	50
Hall (Room 2207)	51.8	<60	30-60	73.4	68-79	746	<1,000	0.7	50
Hall (Room 2216)	52.1	<60	30-60	73.2	68-79	729	<1,000	0.7	50
Hall (Room 2221)	51.1	<60	30-60	74.0	68-79	752	<1,000	0.7	50
Room 2215	53.0	<60	30-60	72.9	68-79	714	<1,000	0.7	50
Hall (Room 2226)	52.2	<60	30-60	72.7	68-79	674	<1,000	0.7	50
Room 2203	53.0	<60	30-60	71.1	68-79	670	<1,000	0.6	50
Room 2202	55.5	<60	30-60	71.0	68-79	611	<1,000	0.7	50
Hall (Room 2201)	56.2	<60	30-60	70.5	68-79	617	<1,000	0.7	50
Hall (Room 2231)	58.0	<60	30-60	71.0	68-79	616	<1,000	0.7	50
Hall (Room 2303)	58.4	<60	30-60	71.3	68-79	589	<1,000	0.7	50
Outdoors	88.0	<60	30-60	79.0	68-79	474	<1,000	0.8	50

Recommendations

We recommend that any known moisture intrusions are investigated and abated. We did not observe signs of moisture intrusion during our site visit. For Stachybotrys to grow indoors, it needs to be in a saturated condition for an extended period of time. The South end of B-wing should be reviewed for moisture intrusions.

Renovation activities may reveal hidden areas of moisture intrusion and ongoing mold growth. Individuals with asthma or allergies, or immunocompromised individuals, should not be involved with the

remediation efforts. Efforts should be made to contain and remove the moldy materials so that spores are not spread to occupied spaces in the structure.

Results from the IAQ Audit indicate that the HVAC system is working appropriately. Relative humidity was at the top end of the acceptable range. It was a humid day outdoors putting pressure on the dehumidification efforts for the structure.

All efforts to prevent and maintain proper moisture management in this structure should continue, keeping relative humidity levels between the OSHA and ASHRAE recommended levels of 30 and 60%, preferably below 50%. Temperatures and moisture levels should be monitored in all areas of the structure to ensure proper conditioning of spaces. Any elevated levels should be addressed in a timely and appropriate manner to help prevent fungal growth/contamination of the structure.

It must be stressed that all findings represent conditions at the time of sampling. These opinions are based on results from the sampling conducted at this point in time.

Please call our office if you should have any questions or comments.

Sincerely,

SHIVE-HATTERY, INC.



Chad Siems, CMC, CIEC
Industrial Hygienist

Copy:
Lora Dikova, Bancroft A + E
Connor Rollins, Bancroft A + E
Chad Harper, Shive-Hattery

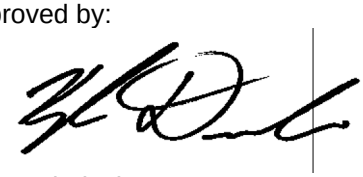
eurofins | Built Environment Testing

Report for:

Chad Siems
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, LLC
Project: VA Medical Center - Birmingham; 521-24-102
EML ID: 4189497

Approved by:



Technical Manager
Kyle Demsko

Dates of Analysis:
Spore trap analysis: 08-19-2025

Service SOPs: Spore trap analysis (EB-MY-S-1038)
AIHA LAP, LLC accredited service, Lab ID #208900

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Information supplied by the client which can affect the validity of results: sample air volume.

Eurofins Aerotech Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.
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Eurofins Aerotech Built Environment Testing, LLC
2545 Chandler Ave., Suite #2, Las Vegas, NV 89120
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	1: 40857179 Outdoors				2: 40857212 Hall Rm 2806B				3: 40857178 Hall Rm 2807A				4: 40857215 Hall Rm 2816			
Comments (see below)	None				A				None				None			
Lab ID-Version‡:	20937338-1				20937339-1				20937340-1				20937341-1			
Analysis Date:	08/19/2025				08/19/2025				08/19/2025				08/19/2025			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)	2+				1+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	2	27	13	n/a					1	13	13	n/a	1	13	13	n/a
Pollen																
§ TOTAL FUNGAL SPORES	48	2,400	n/a	100		< 13	n/a	100	1	13	n/a	100	1	53	n/a	100
Alternaria																
Ascospores	6	320	53	14												
Basidiospores	12	640	53	27												
Bipolaris/Drechslera group																
Chaetomium																
Cladosporium																
Curvularia																
Other brown	4	53	13	2												
Penicillium/Aspergillus types	25	1,300	53	56									1	53	53	100
Smuts, Periconia, Myxomycetes									1	13	13	100				
Spegazzinia	1	13	13	1												
Stachybotrys																
Zygomycetes																

Comments: A) No spores detected.

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

*The detection limit/limit of detection (DL) per cubic meter (m3) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".
§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

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C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	5: 40857216 Hall 2813				6: 40857654 Entry Front desk				7: 40857197 Hall Rm 2819				8: 40857925 Hall Rm 2209			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	20937342-1				20937343-1				20937344-1				20937345-1			
Analysis Date:	08/19/2025				08/19/2025				08/19/2025				08/19/2025			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)	1+				2+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments					1	13	13	n/a								
Pollen					1	13	13	n/a								
§ TOTAL FUNGAL SPORES	2	110	n/a	100	4	53	n/a	100	3	40	n/a	100	4	130	n/a	100
Alternaria																
Ascospores																
Basidiospores													1	53	53	40
Bipolaris/Drechslera group																
Chaetomium																
Cladosporium																
Curvularia																
Other brown									2	27	13	67	2	27	13	20
Penicillium/Aspergillus types	2	110	53	100	2	27	13	50					1	53	53	40
Smuts, Periconia, Myxomycetes					2	27	13	50	1	13	13	33				
Spegazzinia																
Stachybotrys																
Zygomycetes																

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

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Client: Shive-Hattery
C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	9: 40857653 Hall Rm 2213				10: 40857189 Hall Rm 2207				11: 40857866 Hall Rm 2216				12: 40857853 Hall Rm 2221			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	20937346-1				20937347-1				20937348-1				20937349-1			
Analysis Date:	08/19/2025				08/19/2025				08/19/2025				08/19/2025			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)	2+				1+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments					1	13	13	n/a	2	27	13	n/a	2	27	13	n/a
Pollen																
§ TOTAL FUNGAL SPORES	3	80	n/a	100	6	280	n/a	100	3	80	n/a	100	6	240	n/a	100
Alternaria																
Ascospores					1	53	53	19								
Basidiospores																
Bipolaris/Drechslera group																
Chaetomium																
Cladosporium					1	53	53	19					1	53	53	22
Curvularia					1	13	13	5	1	13	13	17	1	13	13	6
Other brown	2	27	13	33					1	13	13	17	1	13	13	6
Penicillium/Aspergillus types	1	53	53	67	3	160	53	57	1	53	53	67	3	160	53	67
Smuts, Periconia, Myxomycetes																
Spegazzinia																
Stachybotrys																
Zygomycetes																

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

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Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
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SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	13: 40857176 Rm 2215				14: 40856848 Hall Rm 2226				15: 40857517 Room 2203				16: 40855648 Room 2202			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	20937350-1				20937351-1				20937352-1				20937353-1			
Analysis Date:	08/19/2025				08/19/2025				08/19/2025				08/19/2025			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)	2+				2+				1+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments					2	27	13	n/a					1	13	13	n/a
Pollen																
§ TOTAL FUNGAL SPORES	8	270	n/a	100	5	270	n/a	100	1	53	n/a	100	3	120	n/a	100
Alternaria																
Ascospores																
Basidiospores					2	110	53	40								
Bipolaris/Drechslera group	1	13	13	5												
Chaetomium																
Cladosporium																
Curvularia																
Other brown	3	40	13	15												
Penicillium/Aspergillus types	4	210	53	80	3	160	53	60	1	53	53	100	2	110	53	89
Smuts, Periconia, Myxomycetes																
Spegazzinia																
Stachybotrys													1	13	13	11
Zygomycetes																

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

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SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	17: 40857183 Hall Rm 2201				18: 40857518 Hall Rm 2231				19: 40857188 Hall Rm 2303				20: 4085712 Outdoors			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	20937354-1				20937355-1				20937356-1				20937357-1			
Analysis Date:	08/19/2025				08/19/2025				08/19/2025				08/19/2025			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)	1+				1+				1+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments													1	13	13	n/a
Pollen																
§ TOTAL FUNGAL SPORES	3	120	n/a	100	5	150	n/a	100	2	67	n/a	100	88	3,900	n/a	100
Alternaria													1	13	13	< 1
Ascospores													11	590	53	15
Basidiospores	1	53	53	44									21	1,100	53	29
Bipolaris/Drechslera group																
Chaetomium																
Cladosporium													2	110	53	3
Curvularia					1	13	13	9								
Other brown	1	13	13	11	1	13	13	9					2	27	13	1
Penicillium/Aspergillus types	1	53	53	44	2	110	53	73	1	53	53	80	51	2,000	39	52
Smuts, Periconia, Myxomycetes					1	13	13	9								
Spegazzinia																
Stachybotrys									1	13	13	20				
Zygomycetes																

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

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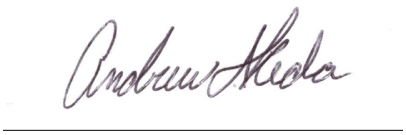
Client: Shive-Hattery
C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Andrew Ikeda

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Introduction

Molds are a natural and important part of our environment. They are ubiquitous and are found virtually everywhere. Molds produce tiny spores to reproduce. These spores can be found in both indoor and outdoor air and on indoor and outdoor surfaces. When mold spores land on a damp spot, they may begin growing and digesting whatever they are growing on in order to survive, leading to adverse conditions. In response to increasing public concern, a number of government authorities, including the United States EPA, California Department of Health Services and New York City Department of Health, have developed recommendations and guidelines for assessment and remediation of mold. Websites for these organizations can be found at the end of this report.

While it is generally accepted that molds can be allergenic and can lead to adverse health conditions in susceptible people, unfortunately there are no widely accepted or regulated interpretive standards or numerical guidelines for the interpretation of microbial data. The absence of standards often makes interpretation of microbial data difficult and controversial. This report has been designed to provide some basic interpretive information using certain assumptions and facts that have been extracted from a number of peer reviewed texts, such as the American Conference of Governmental Industrial Hygienists (ACGIH). In the absence of standards, the user must determine the appropriateness and applicability of this report to any given situation. Identification of the presence of a particular fungus in an indoor environment does not necessarily mean that the building occupants are or are not being exposed to antigenic or toxic agents.

None of the information contained herein should be construed as medical advice or a call to action for evacuation or remediation. Only a qualified physician should make any decision relative to medical significance.

EMLab P&K did not conduct the site investigation, provide consulting or collect the samples referenced in this report. EMLab P&K's primary involvement in this project is to provide analytical results for the samples submitted. The data presented in this report are based on the samples and accompanying information provided and represents concentrations at a point in time under the conditions sampled.

EMLab P&K's standard terms and conditions govern all aspects of this report.

Materials

Please refer to the chain of custody included with this report.

Methods

1. **Surface Samples – Swab, Dust, Tape and Bulk Samples**
   Swab, Dust and Tape samples are mounted on a glass slide and observed under a bright field microscope for either Qualitative or Quantitative Examination. A bulk sample is also simultaneously observed under a stereomicroscope to look for signs of any visible discoloration or fungal growth, which is then mounted and observed under a bright field microscope for either Qualitative or Quantitative Examination. The samples are analyzed at a minimum of 200X magnification and up to a 1000X magnification. In the qualitative

examination, the prepared samples are observed for the presence of any structures or skewing of spore distribution that may indicate growth in the sample being analyzed. In the quantitative examination, the mold spores detected in the sample are counted and reported as spores per cm^2, spores per gram (or 1000mg), or spores per swab/wipe, etc depending on the sample type. These methodologies do not differentiate between viable and non-viable fungal spores.

2. Air Samples- Spore Trap Device

Spore traps are a unique sampling device designed for the rapid collection and analysis of a wide range of airborne particulates, including fungal spores. While analyzing the sample, the analyst takes a number of variables into account to select the proper analytical method to accurately determine the densities of the various spores on the trace. The densities of the debris and the spores on the trace will determine the approach to analyzing the sample. In general, the sample is directly mounted under the microscope and the various airborne particles detected are counted at a minimum of 200X magnification and up to 1000X magnification, with the entire trace (100% of the sample) being analyzed at 200X or 600X. This method does not differentiate between viable and non-viable fungal spores. This technique does not allow for the differentiation between *Aspergillus* and *Penicillium* spores. Additionally, depending on morphology, other non-distinctive spores are reported in categories such as ascospores or basidiospores. All slides are graded with the following debris scale for data qualification.

Debris Rating	Description	Interpretation
None	No particles detected.	No particulates on slide. The absence of particulates could indicate improper sampling as most air samples typically capture some particles.
<1+	Good visibility. A few particles detected.	Reported values are not affected by debris.
1+	Good visibility. No crowding of particles.	
2+	Decent visibility. Particles beginning to crowd.	Non-microbial particulates can mask the presence of fungal spores. As a result, actual values could be higher than the numbers reported. Higher debris ratings increase the probability of this bias.
3+	Decent visibility. Particles beginning to crowd.	
4+	Poor visibility. Particles beginning to overlap.	Excessive debris detected in the sample. Counts reported may vary drastically and actual values could be higher than the numbers reported. The sample should be collected at a shorter time interval, or other measures taken to reduce the collection of non-microbial debris. In addition, a >4+ rating will only allow for a count from the perimeter of the slide.
>4+	Poor visibility. Particles overlapping.	

3. Comments

Comments identify issues or events that are relevant to your analytical results. A comment includes information about any peculiar observation or situation encountered while analyzing the sample. In each case, the comments provide significant information vital to the interpretation of the laboratory data.

4. Data Interpretation

According to ACGIH, "Data from individual sampling episodes is often interpreted with respect to baseline data from other environments or the same environment under anticipated low exposure conditions." In the absence of established acceptable exposure limits, it is often necessary to use a comparison standard when interpreting data. In this instance, it will be necessary to sample the suspect area as well as a non-suspect area.

According to ACGIH, "...active fungal growth in indoor environments is inappropriate and may lead to exposure and adverse health effects."

a. Total Fungal Spores

According to ACGIH, ".... differences that can detected with manageable sample sizes are likely to be in 10- fold multiplicative steps (e.g., 100 versus 1000...)". Following this logic, if total fungal spores are ten (10) times greater in the sample from a suspect area than in the negative control sample collected from a non-suspect area, then that sample area may be a fungal amplification site.

b. Mycelial Fragments

Mycelium is a fungal mass that constitutes the vegetative or living body of a fungus. Following the same logic above, if total mycelial fragments are ten (10) times greater in the suspect sample than in the negative control, then the sample area is considered to be a fungal amplification site. The presence of mycelial fragments provides evidence of microbial growth.

c. Mycotoxins

Molds can produce toxic substances called mycotoxins. More than 200 mycotoxins have been identified from common molds, and many more remain to be identified. Some of the molds that are known to produce mycotoxins are commonly found in moisture-damaged buildings. Exposure pathways for mycotoxins can include inhalation, ingestion, or skin contact. Although some mycotoxins are well known to affect humans and have been shown to be responsible for human health effects, for many mycotoxins, little information is available, and in some cases research is ongoing. Some molds can produce several toxins, and some molds produce mycotoxins only under certain environmental conditions. The presence of mold in a building does not necessarily mean that mycotoxins are present or that they are present in large quantities.

d. Water Indicator Molds

Certain authorities identify certain molds whose presence indicates excessive moisture. The presence of a few spores of indicator mold should be interpreted with caution. Additionally, it should be recognized that these named molds are not necessarily the only ones of potential significance.

e. Mold Glossary

Specific characteristics of the individual molds listed in the report are presented in Table 1.

f. Useful Resources

i. Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health. www1.nyc.gov/assets/doh/downloads/pdf/epi/epi-mold-guidelines.pdf

ii. Facts about Mold, New York City Department of Health.www1.nyc.gov/assets/doh/downloads/pdf/epi/mold-brochure.pdf

iii. Mold Resources, United States Environmental Protection Agency. http://www.epa.gov/mold/moldresources.html
iv. Mold in My Home, What do I do? California Department of Health Services. http://www.lapublichealth.org/eh/docs/housing/brochure/moldhome.pdf

Table 1: Summary of Specific Mold Characteristics

Fungi	Environmental Indicator		Typically Found
Alternaria			*Alternaria* is one of the more common fungi found in nature. It is found growing indoors on a variety of substrates including wallboards, painted walls, etc.
Arthrinium			*Arthrinium* is a saprobe and is found on plants. It is rarely found growing indoors.
Ascospores			Ascospores are ubiquitous in nature and are commonly found in the outdoor environment. Some fungi that belong to the ascomycete family include the sexual forms of *Penicillium/ Aspergillus*, *Chaetomium*, etc that may be frequently found growing on damp substrates.
Aureobasidium			*Aureobasidium* is commonly found in a variety of soils. Indoors, it is commonly found where moisture accumulates, especially bathrooms, and kitchens, on shower curtains, tile grout, windowsills, textiles, and liquid waste materials.
Basidiospores			Basidiospores are Saprophytes and plant pathogens and are commonly found in gardens, forests, and woodlands. They also include organisms that are the agent of "dry rot," and other fungi that cause white and brown wood rot, which may grow and destroy the structural wood of buildings.
Bipolaris/ Dreschlera			*Bipolaris* and *Dreschlera* are usually found associated with plant debris, and soil. They are plant pathogens of numerous plants, particularly grasses. *Bipolaris* and *Dreschlera* can grow indoors on a variety of substrates.
Botrytis			*Botrytis* is commonly found in tropical and temperate climates growing on vegetative matter. They may be found indoors in conjugation with indoor plants, fruits and vegetables.
Chaetomium			*Chaetomium* is often found on materials containing cellulose such as sheetrock paper, or other wet materials.
Cladosporium			*Cladosporium* is a common outdoor mold. They are commonly found on dead plants, food, textiles, and a variety of other surfaces. Indoors, they can grow on a variety of substrates including textiles, wood, moist windowsills, etc. It can grow at 0°C and is associated with refrigerated foods.
Curvularia			*Curvularia* is found on plant materials and is considered a saprobe. Indoors, they can grow on a variety of substrates.
Epicoccum			*Epicoccum* is a saprophyte and considered a weekly parasitic secondary invader of plants. They tend to colonize continuously damp materials such as damp wallboard and fabrics.
Fusarium			*Fusarium* requires very wet conditions and is frequently isolated from plants and grains. They colonize continuously damp materials such as damp wallboard and water reservoirs for humidifiers and drip pans.

Memnoniella			*Memnoniella* can be found growing on a variety of cellulose-containing materials.
Nigrospora			*Nigrospora* is especially abundant in warm climates and is rarely found growing indoors.
Oidium/ Peronospora			*Oidium* and *Peronospora* are plant pathogens and are not found growing indoors.
Penicillium/ Aspergillus			*Penicillium* and *Aspergillus* are ubiquitous in environment. *Aspergillus* tends to colonize continuously damp materials such as damp wallboard and fabrics. *Penicillium* is commonly found in house dusts, wallpaper, decaying fabrics, moist clipboards, etc.
Pithomyces/ Ulocladium			*Pithomyces* is commonly found on grass and decaying plant material and are rarely found growing indoors. *Ulocladium* has a high water requirement and therefore colonizes continuously damp materials such as damp wallboard and fabrics.
Rusts			Rusts are plant pathogens and only grow on host plants.
Smuts/ *Periconia*/ Myxomycetes			Smuts and Myxomycetes are parasitic plant pathogens that require a living host. Smuts do not usually grow indoors. *Periconia* are rarely found growing indoors. Myxomycetes are occasionally found indoors, but rarely growing.
Stachybotrys			*Stachybotrys* are commonly found indoors on wet materials containing cellulose, such as wallboard, jute, wicker, straw baskets, and other paper materials.
Stemphylium			*Stemphylium* is either parasitic or saprophytic and is rarely found growing indoors.
Torula			*Torula* can grow indoors on cellulose containing materials such as wallboard, jute, wicker, straw baskets, and other paper materials.
Other brown/ colorless			An uncharacteristic fungal spore that does not lend itself to classification via direct microscopy.

 Potential Water Intrusion/Indicator Mold Capable of Mycotoxin Production

 Potential Water Intrusion/Indicator Mold

Quality Programs

The EMLab P&K's laboratory network is staffed with highly trained analysts, the majority of which hold advanced degrees. The reliability of test results depends on many factors such as the personnel performing the tests, environmental conditions, selection and validation of test methods, equipment functioning, as well as the sampling, storage and handling of test items, all of which are a reflection of the overall quality system of the laboratory.

EMLab P&K has modeled its quality system after ISO 17025, General Requirements for the Competence of Testing and Calibration Laboratories, one of the most stringent sets of standards in the industry, to ensure that its customers receive the highest standard of accuracy, reliability, and impartiality that they have come to expect from the leader in the environmental industry. EMLab P&K's laboratories adherence to the standards set forth in ISO 17025 has been validated and formally recognized through accreditations granted by an independent outside agency, American Industrial Hygiene Association Laboratory Accreditation Program, LLC (AIHA-LAP, LLC), on a site by site basis. As an additional measure to demonstrate its competency to perform the analyses it offers to its clients, EMLab P&K laboratories

also participate in a variety of different proficiency testing programs, including the Environmental Microbiology Proficiency Analytical Testing Program (EMPAT) sponsored by the American Industrial Hygiene Association Proficiency Analytical Testing Programs.

As part of our continuous commitment to excellence, EMLab P&K laboratories are also inspected, licensed and/or accredited by a number of governmental agencies and independent associations in addition to those already mentioned above. The scope of services, accreditation certificates, and proficiency results can all be accessed at www.emlabpk.com.

References

1. Bioaerosols: Assessment and Control. Janet Macher, Ed., American Conference of Government Industrial Hygienists, Cincinnati, OH (1999).

2. EPA: The Inside Story. A Guide to Indoor Air Quality, United States Environmental Protection Agency and the United States Consumer Product Safety Commission, Washington DC (1995).

3. Health Canada: Exposure Guidelines for Residential Indoor Air Quality. Environmental Health Directorate. Health Protection Branch, Health Canada, Ottawa, Ontario (1989).

4. IIRC: Standard and Reference Guide for Professional Water Damage Restoration, 2nd Ed. Institute of Inspection, Cleaning and Restoration, Vancouver, WA (1999).

5. Field Guide for the Determination of Bio logical Contaminants in Environmental Samples. American Industrial Hygiene Association, Fairfax, VA (1996).

6. Standards of Practice for the Assessment of Indoor Environmental Quality, Volume I: Mold Sampling, Assessment of Mold Contamination. Indoor Environmental Standards Organization (2002).

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Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

MoldRANGE™: Extended Outdoor Comparison

Outdoor Location: 1, 40857179 Outdoors

Fungi Identified	Outdoor data	Typical Outdoor Data for: August in Iowa† (n‡=918)						Typical Outdoor Data for: The entire year in Iowa† (n‡=7019)					
	spores/m3	very low	low	med	high	very high	freq %	very low	low	med	high	very high	freq %
Generally able to grow indoors*													
Alternaria	-	27	53	150	320	570	92	13	27	93	280	480	65
Bipolaris/Drechslera group	-	7	13	13	34	67	19	7	13	13	40	53	12
Chaetomium	-	11	13	13	33	67	4	7	7	13	27	33	4
Cladosporium	-	800	1,300	3,300	8,700	16,000	99	110	210	1,400	4,900	8,600	90
Curvularia	-	7	13	16	53	80	29	7	13	13	40	73	13
Nigrospora	-	13	13	27	53	93	48	13	13	27	70	150	30
Other brown	53	7	13	20	40	53	17	7	13	13	40	53	13
Penicillium/Aspergillus types	1,300	53	86	260	910	1,500	52	40	53	160	530	1,000	45
Stachybotrys	-	-	-	-	-	-	1	7	13	13	30	88	< 1
Torula	-	13	13	27	67	110	19	7	13	27	53	93	10
Seldom found growing indoors**													
Ascospores	320	270	530	1,300	3,200	5,400	98	53	120	690	2,600	4,900	79
Basidiospores	640	580	1,100	3,500	8,100	12,000	99	80	200	1,300	4,700	8,100	91
Rusts	-	13	13	33	110	200	55	13	13	40	110	230	32
Smuts, Periconia, Myxomycetes	-	13	13	50	120	210	68	13	13	53	160	280	62
Spegazzinia	13	-	-	-	-	-	2	7	7	13	13	27	1
§ TOTAL SPORES/m3	2,400												

†The 'Typical Outdoor Data' represents the typical outdoor spore levels for the location and time frame indicated. The last column represents the frequency of occurrence. The very low, low, med, high, and very high values represent the 10, 20, 50, 80, and 90 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 20% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

* The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

** These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

‡n = number of samples used to calculate data.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor data" are based on the results of the analysis of samples delivered to and analyzed by Eurofins Built Environment Testing and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. In addition, Eurofins Built Environment Testing may not have received and tested a representative number of samples for every region or time period. Eurofins Built Environment Testing hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.

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C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

MoldRANGE™: Extended Outdoor Comparison

Outdoor Location: 20, 4085712 Outdoors

Fungi Identified	Outdoor data	Typical Outdoor Data for: August in Iowa† (n‡=918)						Typical Outdoor Data for: The entire year in Iowa† (n‡=7019)					
	spores/m3	very low	low	med	high	very high	freq %	very low	low	med	high	very high	freq %
Generally able to grow indoors*													
Alternaria	13	27	53	150	320	570	92	13	27	93	280	480	65
Bipolaris/Drechslera group	-	7	13	13	34	67	19	7	13	13	40	53	12
Chaetomium	-	11	13	13	33	67	4	7	7	13	27	33	4
Cladosporium	110	800	1,300	3,300	8,700	16,000	99	110	210	1,400	4,900	8,600	90
Curvularia	-	7	13	16	53	80	29	7	13	13	40	73	13
Nigrospora	-	13	13	27	53	93	48	13	13	27	70	150	30
Other brown	27	7	13	20	40	53	17	7	13	13	40	53	13
Penicillium/Aspergillus types	2,000	53	86	260	910	1,500	52	40	53	160	530	1,000	45
Stachybotrys	-	-	-	-	-	-	1	7	13	13	30	88	< 1
Torula	-	13	13	27	67	110	19	7	13	27	53	93	10
Seldom found growing indoors**													
Ascospores	590	270	530	1,300	3,200	5,400	98	53	120	690	2,600	4,900	79
Basidiospores	1,100	580	1,100	3,500	8,100	12,000	99	80	200	1,300	4,700	8,100	91
Rusts	-	13	13	33	110	200	55	13	13	40	110	230	32
Smuts, Periconia, Myxomycetes	-	13	13	50	120	210	68	13	13	53	160	280	62
Spegazzinia	-	-	-	-	-	-	2	7	7	13	13	27	1
§ TOTAL SPORES/m3	3,900												

†The 'Typical Outdoor Data' represents the typical outdoor spore levels for the location and time frame indicated. The last column represents the frequency of occurrence. The very low, low, med, high, and very high values represent the 10, 20, 50, 80, and 90 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 20% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

* The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

** These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

‡n = number of samples used to calculate data.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor data" are based on the results of the analysis of samples delivered to and analyzed by Eurofins Built Environment Testing and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. In addition, Eurofins Built Environment Testing may not have received and tested a representative number of samples for every region or time period. Eurofins Built Environment Testing hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.

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MoldRANGE™: Extended Outdoor Comparison

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Andrew Ikeda

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Date of Sampling: 08-12-2025
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MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: 1: 40857179 Outdoors

Species detected	Outdoor sample spores/m3 (<100 / 1K / 10K / >100K)	Typical outdoor ranges (North America)	Freq. %
Ascospores	320	13 - 210 - 5,200	73
Basidiospores	640	13 - 370 - 22,000	88
Cladosporium	< 13	27 - 440 - 7,800	88
Other brown	53	7 - 13 - 160	24
Penicillium/Aspergillus types	1,300	13 - 190 - 2,600	59
Smuts, Periconia, Myxomycetes	< 13	7 - 53 - 690	61
Spegazzinia	13	7 - 13 - 160	2
Total	2,400		

The "Typical outdoor ranges" and "Freq. %" columns show the typical low, medium, and high spore counts per cubic meter and the frequency of occurrence for the given spore type. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values when the spore type is detected. For example, if the low value is 53 and the frequency of occurence is 63%, it would mean that we typically detect the given spore type on 63 percent of all outdoor samples and, when detected, 2.5% of the time it is present in levels below 53 spores/m3.

Indoor Samples

Location: 2: 40857212 Hall Rm 2806B

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
None Detected	< 13

Location: 3: 40857178 Hall Rm 2807A

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.0000	dF: 6 Result: -0.1429 Critical value: 0.7714 Outside Similar: No	Score: 103 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Smuts, Periconia, Myxomycetes	13
Total	13

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 4: 40857215 Hall Rm 2816

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.3333	dF: 5 Result: 0.7500 Critical value: 0.8000 Outside Similar: No	Score: 104 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	53
Total	53

Location: 5: 40857216 Hall 2813

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 4%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.3333	dF: 5 Result: 0.7500 Critical value: 0.8000 Outside Similar: No	Score: 108 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	110
Total	110

Location: 6: 40857654 Entry Front desk

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: 0.1571 Critical value: 0.7714 Outside Similar: No	Score: 105 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	27
Smuts, Periconia, Myxomycetes	27
Total	53

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 7: 40857197 Hall Rm 2819

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: -0.3143 Critical value: 0.7714 Outside Similar: No	Score: 113 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Other brown	27
Smuts, Periconia, Myxomycetes	13
Total	40

Location: 8: 40857925 Hall Rm 2209

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 5%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.7500	dF: 5 Result: 0.8000 Critical value: 0.8000 Outside Similar: No	Score: 110 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Basidiospores	53
Other brown	27
Penicillium/Aspergillus types	53
Total	130

Location: 9: 40857653 Hall Rm 2213

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 3%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.5714	dF: 5 Result: 0.5000 Critical value: 0.8000 Outside Similar: No	Score: 110 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Other brown	27
Penicillium/Aspergillus types	53
Total	80

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 10: 40857189 Hall Rm 2207

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 11%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.4444	dF: 7 Result: 0.2232 Critical value: 0.6786 Outside Similar: No	Score: 105 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Ascospores	53
Cladosporium	53
Curvularia	13
Penicillium/Aspergillus types	160
Total	280

Location: 11: 40857866 Hall Rm 2216

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 3%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.5000	dF: 6 Result: 0.2143 Critical value: 0.7714 Outside Similar: No	Score: 109 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Curvularia	13
Other brown	13
Penicillium/Aspergillus types	53
Total	80

Eurofins Aerotech Built Environment Testing, LLC
2545 Chandler Ave., Suite #2, Las Vegas, NV 89120
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 12: 40857853 Hall Rm 2221

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 10%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.4444	dF: 7 Result: 0.0089 Critical value: 0.6786 Outside Similar: No	Score: 108 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Cladosporium	53
Curvularia	13
Other brown	13
Penicillium/Aspergillus types	160
Total	240

Location: 13: 40857176 Rm 2215

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 11%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.5000	dF: 6 Result: 0.2571 Critical value: 0.7714 Outside Similar: No	Score: 118 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Bipolaris/Drechslera group	13
Other brown	40
Penicillium/Aspergillus types	210
Total	270

Location: 14: 40856848 Hall Rm 2226

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 11%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.5714	dF: 5 Result: 0.9000 Critical value: 0.8000 Outside Similar: Yes	Score: 104 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Basidiospores	110
Penicillium/Aspergillus types	160
Total	270

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Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 15: 40857517 Room 2203

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.3333	dF: 5 Result: 0.7500 Critical value: 0.8000 Outside Similar: No	Score: 104 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	53
Total	53

Location: 16: 40855648 Room 2202

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 5%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: 0.2857 Critical value: 0.7714 Outside Similar: No	Score: 121 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	110
Stachybotrys	13
Total	120

Location: 17: 40857183 Hall Rm 2201

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 5%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.7500	dF: 5 Result: 0.8000 Critical value: 0.8000 Outside Similar: No	Score: 104 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Basidiospores	53
Other brown	13
Penicillium/Aspergillus types	53
Total	120

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Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 18: 40857518 Hall Rm 2231

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 6%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.4444	dF: 7 Result: 0.0804 Critical value: 0.6786 Outside Similar: No	Score: 112 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Curvularia	13
Other brown	13
Penicillium/Aspergillus types	110
Smuts, Periconia, Myxomycetes	13
Total	150

Location: 19: 40857188 Hall Rm 2303

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: 0.2857 Critical value: 0.7714 Outside Similar: No	Score: 121 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Penicillium/Aspergillus types	53
Stachybotrys	13
Total	67

* The Friedman chi-square statistic is a non-parametric test that examines variation in a set of data (in this case, all indoor spore counts). The null hypothesis (H0) being tested is that there is no meaningful difference in the data for all indoor locations. The alternative hypothesis (used if the test disproves the null hypothesis) is that there is a difference between the indoor locations. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

** An agreement ratio is a simple method for assessing the similarity of two samples (in this case the indoor sample and the outdoor summary) based on the spore types present. A score of one indicates that the types detected in one location are the same as that in the other. A score of zero indicates that none of the types detected indoors are present outdoors. Typically, an agreement of 0.8 or higher is considered high.

*** The Spearman rank correlation is a non-parametric test that examines correlation between two sets of data (in this case the indoor location and the outdoor summary). The null hypothesis (H0) being tested is that the indoor and outdoor samples are unrelated. The alternative hypothesis (used if the test disproves the null hypothesis) is that the samples are similar. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

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MoldSTAT™: Supplementary Statistical Spore Trap Report

**** MoldSCORE™ is a specialized method for examining air sampling data. It is a score between 100 and 300, with 100 indicating a greater likelihood that the airborne indoor spores originated from the outside, and 300 indicating a greater likelihood that they originated from an inside source. The Result displayed is based on the numeric score given and will be either Low, Medium, or High, indicating a low, medium, or high likelihood that the spores detected originated from an indoor source. Eurofins Built Environment Testingreserves the right to, and may at anytime, modify or change the MoldScore algorithm without notice.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor ranges" are based on the results of the analysis of samples delivered to and analyzed by Eurofins Built Environment Testing Testing and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. With the statistical analysis provided, as with all statistical comparisons and analyses, false-positive and false-negative results can and do occur. Eurofins Built Environment Testing hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the data contained in, or any actions taken or omitted in reliance upon, this report.

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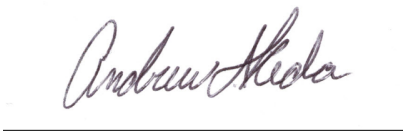
Client: Shive-Hattery
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MoldSTAT™: Supplementary Statistical Spore Trap Report

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Andrew Ikeda

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: 20: 4085712 Outdoors

Species detected	Outdoor sample spores/m3 <100 1K 10K >100K	Typical outdoor ranges (North America)	Freq. %
Alternaria	13	7 - 27 - 370	40
Ascospores	590	13 - 210 - 5,200	73
Basidiospores	1,100	13 - 370 - 22,000	88
Cladosporium	110	27 - 440 - 7,800	88
Other brown	27	7 - 13 - 160	24
Penicillium/Aspergillus types	2,000	13 - 190 - 2,600	59
Smuts, Periconia, Myxomycetes	< 13	7 - 53 - 690	61
Total	3,900		

The "Typical outdoor ranges" and "Freq. %" columns show the typical low, medium, and high spore counts per cubic meter and the frequency of occurrence for the given spore type. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values when the spore type is detected. For example, if the low value is 53 and the frequency of occurence is 63%, it would mean that we typically detect the given spore type on 63 percent of all outdoor samples and, when detected, 2.5% of the time it is present in levels below 53 spores/m3.

Indoor Samples

Location: 2: 40857212 Hall Rm 2806B

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
None Detected	< 13

Location: 3: 40857178 Hall Rm 2807A

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.0000	dF: 7 Result: -0.0625 Critical value: 0.6786 Outside Similar: No	Score: 103 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Smuts, Periconia, Myxomycetes	13
Total	13

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 4: 40857215 Hall Rm 2816

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: 0.7143 Critical value: 0.7714 Outside Similar: No	Score: 104 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	53
Total	53

Location: 5: 40857216 Hall 2813

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: 0.7143 Critical value: 0.7714 Outside Similar: No	Score: 108 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	110
Total	110

Location: 6: 40857654 Entry Front desk

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2500	dF: 7 Result: 0.1875 Critical value: 0.6786 Outside Similar: No	Score: 105 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	27
Smuts, Periconia, Myxomycetes	27
Total	53

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 7: 40857197 Hall Rm 2819

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2500	dF: 7 Result: -0.2857 Critical value: 0.6786 Outside Similar: No	Score: 113 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K	
Other brown		27
Smuts, Periconia, Myxomycetes		13
Total		40

Location: 8: 40857925 Hall Rm 2209

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 3%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.6667	dF: 6 Result: 0.7000 Critical value: 0.7714 Outside Similar: No	Score: 110 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K	
Basidiospores		53
Other brown		27
Penicillium/Aspergillus types		53
Total		130

Location: 9: 40857653 Hall Rm 2213

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.5000	dF: 6 Result: 0.4286 Critical value: 0.7714 Outside Similar: No	Score: 110 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K	
Other brown		27
Penicillium/Aspergillus types		53
Total		80

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Date of Sampling: 08-12-2025
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Date of Report: 08-19-2025

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 10: 40857189 Hall Rm 2207

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 7%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.6000	dF: 7 Result: 0.4911 Critical value: 0.6786 Outside Similar: No	Score: 105 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K	
Ascospores		53
Cladosporium		53
Curvularia		13
Penicillium/Aspergillus types		160
Total		280

Location: 11: 40857866 Hall Rm 2216

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 2%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.4444	dF: 7 Result: 0.1518 Critical value: 0.6786 Outside Similar: No	Score: 110 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K	
Curvularia		13
Other brown		13
Penicillium/Aspergillus types		53
Total		80

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 12: 40857853 Hall Rm 2221

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 6%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.6000	dF: 7 Result: 0.2232 Critical value: 0.6786 Outside Similar: No	Score: 109 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Cladosporium	53
Curvularia	13
Other brown	13
Penicillium/Aspergillus types	160
Total	240

Location: 13: 40857176 Rm 2215

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 6%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.4444	dF: 7 Result: 0.1786 Critical value: 0.6786 Outside Similar: No	Score: 120 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Bipolaris/Drechslera group	13
Other brown	40
Penicillium/Aspergillus types	210
Total	270

Location: 14: 40856848 Hall Rm 2226

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 7%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.5000	dF: 6 Result: 0.8571 Critical value: 0.7714 Outside Similar: Yes	Score: 104 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Basidiospores	110
Penicillium/Aspergillus types	160
Total	270

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 15: 40857517 Room 2203

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2857	dF: 6 Result: 0.7143 Critical value: 0.7714 Outside Similar: No	Score: 104 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	53
Total	53

Location: 16: 40855648 Room 2202

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 3%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2500	dF: 7 Result: 0.2857 Critical value: 0.6786 Outside Similar: No	Score: 121 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	110
Stachybotrys	13
Total	120

Location: 17: 40857183 Hall Rm 2201

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 3%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.6667	dF: 6 Result: 0.7000 Critical value: 0.7714 Outside Similar: No	Score: 105 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Basidiospores	53
Other brown	13
Penicillium/Aspergillus types	53
Total	120

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 18: 40857518 Hall Rm 2231

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 3%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.4000	dF: 8 Result: 0.0060 Critical value: 0.6190 Outside Similar: No	Score: 112 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Curvularia	13
Other brown	13
Penicillium/Aspergillus types	110
Smuts, Periconia, Myxomycetes	13
Total	150

Location: 19: 40857188 Hall Rm 2303

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 1%	dF: 17 Result: 9.7290 Critical value: 27.5871 Inside Similar: Yes	Result: 0.2500	dF: 7 Result: 0.2857 Critical value: 0.6786 Outside Similar: No	Score: 121 Result: Low

Species Detected	Spores/m3 <100 1K 10K >100K
Penicillium/Aspergillus types	53
Stachybotrys	13
Total	67

* The Friedman chi-square statistic is a non-parametric test that examines variation in a set of data (in this case, all indoor spore counts). The null hypothesis (H0) being tested is that there is no meaningful difference in the data for all indoor locations. The alternative hypothesis (used if the test disproves the null hypothesis) is that there is a difference between the indoor locations. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

** An agreement ratio is a simple method for assessing the similarity of two samples (in this case the indoor sample and the outdoor summary) based on the spore types present. A score of one indicates that the types detected in one location are the same as that in the other. A score of zero indicates that none of the types detected indoors are present outdoors. Typically, an agreement of 0.8 or higher is considered high.

*** The Spearman rank correlation is a non-parametric test that examines correlation between two sets of data (in this case the indoor location and the outdoor summary). The null hypothesis (H0) being tested is that the indoor and outdoor samples are unrelated. The alternative hypothesis (used if the test disproves the null hypothesis) is that the samples are similar. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

Eurofins Aerotech Built Environment Testing, LLC
2545 Chandler Ave., Suite #2, Las Vegas, NV 89120
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Chad Siems
Re: VA Medical Center - Birmingham; 521-24-102

Date of Sampling: 08-12-2025
Date of Receipt: 08-15-2025
Date of Report: 08-19-2025

MoldSTAT™: Supplementary Statistical Spore Trap Report

**** MoldSCORE™ is a specialized method for examining air sampling data. It is a score between 100 and 300, with 100 indicating a greater likelihood that the airborne indoor spores originated from the outside, and 300 indicating a greater likelihood that they originated from an inside source. The Result displayed is based on the numeric score given and will be either Low, Medium, or High, indicating a low, medium, or high likelihood that the spores detected originated from an indoor source. Eurofins Built Environment Testingreserves the right to, and may at anytime, modify or change the MoldScore algorithm without notice.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor ranges" are based on the results of the analysis of samples delivered to and analyzed by Eurofins Built Environment Testing Testing and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. With the statistical analysis provided, as with all statistical comparisons and analyses, false-positive and false-negative results can and do occur. Eurofins Built Environment Testing hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the data contained in, or any actions taken or omitted in reliance upon, this report.

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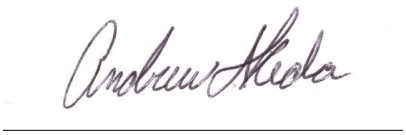
Client: Shive-Hattery
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MoldSTAT™: Supplementary Statistical Spore Trap Report

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Andrew Ikeda

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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SSF, CA: 6000 Shoreline Ct, Ste. 205, S. San Francisco, CA 94080 * **(866) 888-6653**

WEATHER	Fog	Rain	Snow	Wind	Clear
LEVEL None					
Light					
Moderate					
Heavy					

CONTACT INFORMATION

Company:	Shive-Hattery (13232)	Address:	2839 Northgate Dr. Iowa City, IA 52245
Contact:	Chad Siems		
Phone:	319-354-3040	Special Instructions:	

PROJECT INFORMATION

Project ID:	VA Medical Center - Birmingham		
Project Description:	521-24-102		
Project Zip Code:	35233	Sampling Date/Time:	8-12-25
PO Number:	2240008444	Sampled By:	CGS

TURN AROUND TIME CODES - (TAT)

STD - Standard (Default)
ND - Next Business Day
SD - Same Business Day
WH - Weekend/Holiday/ASAP

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

REQUESTED SERVICES

Non-Culturable

Spore Trap: Spore Trap Analysis; Other biological particles - supplement

Tape, Swab, Bulk: Direct Microscopic Exam (Qualitative); Quantitative spore count direct exam; Dust Characterization

Culturable

BioCassette™: Andersen, SAS, Sv

1-Media Surface Fungi (Genus ID + *Asp.* spp.)
Culturable Air Fungi (Genus ID + *Asp.* sp
Gram Stain and Counts (Culturable Air and Surface
Legionella culture
Total Coliform, *E.coli* (Presence/Absence)
Quant/Tray-Scwago Screen
OTHER: (please specify test)

Other Requests

Asbestos in Air - PCM Airborne Fiber Count (NIOSH
Asbestos Bulk - PLM
Lead (Pb) - Flame AA
PCR (please specify test)
Allergens (please specify test)

004189497

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume/Area (as applicable)	NOTES (Time of day, Temp, RH, etc.)
	See Attached				

SAMPLE TYPE CODES

BC - BioCassette™	**CP** - Contact Plate	**T** - Tape	**O** - Other:
A1S - Andersen	**ST** - Spore Trap	**SW** - Swab	
SAS - Surface Air Sampler	**B** - Bulk	**SO** - Soil	
NP - Non-potable Water	**P** - Potable Water	**D** - Dust	

RELINQUISHED BY	DATE & TIME
Chad Siems	8-14-25 1700

RECEIVED BY	DATE & TIME
Lydia Pe	9:30am 8/15/25

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/terms-of-service
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Sample #	Spore trap #	Location	TAT	Volume	Spore trap analysis
1	40857179	Outdoors	STD	75L	X
2	40857212	Hall (Rm 2806B)	STD	75L	X
3	40857178	Hall (Rm 2807A)	STD	75L	X
4	48057215	Hall (Rm 2816)	STD	75L	X
5	40857216	Hall (2813)	STD	75L	X
6	40857654	Entry (front desk)	STD	75L	X
7	40857197	Hall (Rm 2819)	STD	75L	X
8	40856925	Hall (Rm 2209)	STD	75L	X
9	40855653	Hall (Rm 2213)	STD	75L	X
10	40857189	Hall (Rm 2207)	STD	75L	X
11	40856866	Hall (Rm 2216)	STD	75L	X
12	40856853	Hall (Rm 2221)	STD	75L	X
13	40857176	Rm 2215	STD	75L	X
14	40856848	Hall (Rm 2226)	STD	75L	X
15	40857517	Room 2203	STD	75L	X
16	40855648	Room 2202	STD	75L	X
17	40857183	Hall (Rm 2201)	STD	75L	X
18	40857518	Hall (Rm 2231)	STD	75L	X
19	40857188	Hall (Rm 2303)	STD	75L	X
20	40857172	Outdoors	STD	75L	X

JL 8/15/25

004189497

SECTION 08 17 10
INTEGRATED DOOR ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Integrated door assemblies including metal door frame, door, and hardware, unless specified in another Section, installed at cross-corridor locations.

B. Smoke and draft control seals, unless specified in another Section.

1.2 RELATED WORK

A. Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS: Non-Flooring Adhesives and Sealants and Paints and Coatings VOC Limits.

B. Section 08 71 00, DOOR HARDWARE: Lock Cylinders.

C. Section 08 71 13, AUTOMATIC DOOR OPERATORS: Automatic Door Operators.

D. Section 09 06 00, SCHEDULE FOR FINISHES: Door and Frame Color:.

E. DIVISION 26, ELECTRICAL: Electrical Power.

1.3 APPLICABLE PUBLICATIONS

A. Comply with references to extent specified in this section.

B. Builders Hardware Manufacturers Association (BHMA):

A156.3-14.....Exit Devices.

A156.26-06.....Continuous Hinges.

A156.32-14.....Integrated Door Opening Assemblies.

C. ASTM International (ASTM):

A1011/A1011M-18a.....Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

E2180-18.....Determining the Activity of Incorporated Antimicrobial Agents in Polymeric or Hydrophobic Materials.

D. Door and Hardware Institute (DHI):

1. Recommended Locations for Architectural Hardware for Standard Doors & Frames (2004).

2. Recommended Locations for Builders' Hardware Custom Steel Doors & Frames (1996).

E. National Fire Protection Association (NFPA):

105-16.....Smoke Door Assemblies and Other Opening Protectives.

252-12.....Fire Tests of Door Assemblies.

F. Steel Door Institute (SDI):

A250.3-11.....Test Procedure and Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames.

A250.8-14.....Specifications for Standard Steel Doors and Frames.

A250.10-11.....Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.

G. UL LLC (UL):

10C-09.....Positive Pressure Fire Tests of Door Assemblies.

1784-15.....Air Leakage Tests of Door Assemblies and Other Opening Protectives.

1.4 PREINSTALLATION MEETINGS

A. Conduct preinstallation meeting // at project site // minimum 30 days before beginning Work of this section.

1. Required Participants:
   a. Contracting Officer's Representative.
   b. // Architect/Engineer. //
   c. Contractor.
   d. Installer.
   e. Other installers responsible for adjacent and intersecting work, including electrical.

2. Meeting Agenda: Distribute agenda to participants minimum 3 days before meeting.
   a. Installation schedule.
   b. Installation sequence.
   c. Preparatory work.
   d. Protection before, during, and after installation.
   e. Installation.

f. Transitions and connections to other work.

g. Other items affecting successful completion.

3. Document and distribute meeting minutes to participants to record decisions affecting installation.

1.5 SUBMITTALS

A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Submittal Drawings:

1. Show size, configuration, and fabrication and installation details.
2. For each opening, list finish hardware items included in assembly, finish, degree of opening, and electrical rough-in requirements according to Door Schedule.
3. Submit templates to door and frame manufacturers to ensure proper size and location of hardware.

C. Manufacturer's Literature and Data:

1. Description of each product.
2. Installation instructions.

D. Sustainable Construction Submittals:

1. Recycled Content: Identify post-consumer and pre-consumer recycled content percentage by weight.
2. Low Pollutant-Emitting Materials:

a. Show volatile organic compound types and quantities.

E. Certificates: Indicate integrated door assemblies comply with specifications.

1. Show fire rated integrated door assembly is UL Listed for specified application.

F. Qualifications: Substantiate qualifications comply with specifications.

1. Installer.

G. Operation and Maintenance Data:

1. Care instructions for each exposed finish product.
2. Maintenance and adjustment instructions for integrated door assemblies.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:

1. Regularly installs specified products.

2. Installed specified products with satisfactory service on five similar installations for minimum five years.
   a. Provide contact names and addresses for completed projects when requested by Contracting Officer's Representative.

1.7 DELIVERY

A. Deliver products in manufacturer's original sealed packaging.

B. Mark packaging, legibly. Indicate manufacturer's name.

C. Before installation, return or dispose of products within distorted, damaged, or opened packaging.

1.8 STORAGE AND HANDLING

A. Store products indoors in dry, weathertight facility.

B. Protect products from damage during handling and construction operations.

1.9 FIELD CONDITIONS

A. Field Measurements: Verify field conditions affecting integrated door assembly fabrication and installation. Show field measurements on Submittal Drawings.
   1. Coordinate field measurement and fabrication schedule to avoid delay.
   2. Coordinate electrical work for electrified hardware installation.

1.10 WARRANTY

A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

B. Manufacturer's Warranty: Warrant door closers and hinges against material and manufacturing defects.

   1. Warranty Periods:
      a. Door Closers: 10 years.
      b. Steel Pinned Continuous Hinges: 10 years.

PART 2 - PRODUCTS

2.1 SYSTEM PERFORMANCE

A. Design integrated door assemblies complying with specified performance:
   1. BHMA A156.32: Grade 1: 1,000,000 cycles.

B. Fire Rated Doors:
   1. Fire Resistance Rating: As shown in Door Schedule.

2. Label: Comply with NFPA 252, UL 10C, and labeled by qualified testing and inspection agency showing fire resistance rating.

C. Smoke Rated Doors:

1. Smoke Resistance Rating: As shown in Door Schedule.
2. Label: Comply with NFPA 105, UL 1784, and labeled by qualified testing and inspection agency showing smoke resistance rating.

2.2 PRODUCTS - GENERAL

A. Basis of Design: Section 09 06 00, SCHEDULE FOR FINISHES.

B. Provide each integrated door assembly from one manufacturer.

C. Sustainable Construction Requirements:

1. Steel Recycled Content: 30 percent total recycled content, minimum.

2. Low Pollutant-Emitting Materials: Comply with VOC limits specified in Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS for the following products:
   a. Non-flooring adhesives and sealants.
   b. Paints and coatings.

2.3 INTEGRATED DOOR ASSEMBLY

A. Metal Doors: SDI A250.8; Level 2 and Physical Performance Level B, heavy duty; Model 2 seamless.

1. Face: ASTM A1011/A1011M; cold rolled steel, 1.0 mm (0.04 inches) thick, minimum.
   a. Cladding: Wood veneer .
2. Core: Kraft paper honeycomb or polystyrene.
3. Thickness: 44 mm (1-3/4 inch).
4. Reinforce door for hardware installation.

B. Metal Frames: SDI A250.8 Level 2.

1. Metal: ASTM A1011/A1011M; cold rolled steel, 1.3 mm (0.05 inches) thick, minimum.
2. Construction: Continuously welded.
3. Reinforce frame for hardware.
   a. Continuous Hinges: 2.3 mm (0.09 inches) thick.
   b. Other Hardware: Comply with SDI A250.8.
4. Frame Anchors: Provide adjustable type anchors coordinated with wall construction, minimum 4 per jamb.

C. Integrated Hardware:

1. Exit Device: BHMA A156.3; Grade 1, passage function, inset in door face, clean and unobtrusive in design.
   a. Push Bar End Caps: Metal, plated satin nickel (BHMA 619) finish.
   b. Exit Device Trim: Lever matching door hardware specified in Section 08 71 00, DOOR HARDWARE.
2. Continuous Hinges: BHMA A156.26.
   a. Plastic Laminate Clad Doors: Wrap-around style hinge guards and provide stainless steel wrap-around edge guards at strike edge of door.
3. Other Hardware: As scheduled in this section.

2.4 FINISHES

A. Hardware Finish Symbols:

TABLE I – Hardware Finish Symbols

US	BHMA 156.18	Description
USP	600	Primed for field painting
US15	619	Dull Nickel Plated
US26D	626/652	Satin Chrome Plated
US28	628	Satin Aluminum
US32	629	Bright Stainless
US32D	630	Satin Stainless
N/A	689	Aluminum Painted

B. Finish Requirements:

1. Door Faces: Factory Pre-Finished, SDI A250.3 .
2. Frames: Prime painted, SDI A250.10 .
3. Door Hardware:
   a. Continuous Hinges: BHMA 630.
   b. Push Bar: BHMA 630 clad with BHMA 619 end caps.
   c. Exit Device Trim: BHMA 630.
   d. Push/Pull Trim: BHMA 626.
   e. Door Closers: BHMA 689.
   f. Miscellaneous: To match other finishes.
4. Anti-Microbial Coating: ASTM E2180; ionic silver coating.
5. Apply coating to hand-operated hardware including levers, pulls, push bars, push plates, and paddles.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine and verify substrate suitability for product installation.

B. Protect existing construction and completed work from damage.

3.2 INSTALLATION - INTEGRATED DOOR ASSEMBLIES

A. Install products according to manufacturer's instructions and approved submittal drawings .

B. Install door hardware at locations indicated in DHI Recommended Locations for Architectural Hardware for Standard Steel Doors & Frames and DHI Recommended Locations for Builders' Hardware Custom Steel Doors & Frames, unless otherwise indicated, or to comply with requirements of governing regulations, or if otherwise directed by Contracting Officer's Representative.

C. Install door hardware in compliance with manufacturers' instructions, and templates. Comply with specified degree of opening for doors with automatic operators and overhead door closers. Securely fasten hardware. Confirm operating parts move freely and smoothly without binding, sticking, and excessive clearance.

D. Coordinate installation and interface wiring with fire alarm and smoke detection systems. Provide auxiliary contacts, relays, and interface for fire alarm and security systems.

E. Remove or protect door hardware, before painting and finishing performed after integrated door assembly installation.

F. Adjust and check door assembly and each operating hardware item to ensure correct operation and function. Replace products which cannot be adjusted to operate as intended.

G. Final Adjustment: Perform final hardware check and adjustment maximum one month before building acceptance or partial building occupancy.

3.3 CLEANING

A. Clean exposed surfaces, including hardware. Do not use cleaners that will harm finishes.

3.4 PROTECTION

A. Protect integrated door assemblies from construction operations.

3.5 SCHEDULES

A. The following is a general listing of the Integrated Door Assembly requirements and is not intended for use as a final door submittal.

Provide hardware items required by established standards and practices, and to meet IBC and NFPA 101 whether specified or not in the following listed groups.

1. Each [ADO] Integrated Door to Have:
   a. Power transfer shared by electric panic and re-activation sensor wiring (re-activation sensors provided by Section 08 71 13).
   b. Lock cylinder by section 08 71 00, door hardware.
   c. Auto door operator and controls by Section 08 71 13, AUTOMATIC DOOR OPERATORS.

2. Power, wiring, conduit, and fire alarm connection by Division 26.

HW-12A (clinic entry)

Each [ADO] Integrated Door to Have:	RATED
1 Steel Frame	-
1 Integrated Pair Doors w/Exit Devices and Pull Trim	Q2231 x TYPE 8 EXIT DEVICES (F01/ACTIVE FLUSH PULL PASSAGE TRIM)
2 Continuous Hinges	A51031B
1 Self-Adhesive Astragal	R0Y_14
2 Closers	C02011/C02021 (PT4D, PT4H)
2 Magnetic Holders	C00011 TRI-VOLTAGE
1 Set Self-Adhesive Seals	R0E154

3. Power, wiring, conduit, and fire alarm connection by Division 26.

4. Power, wiring, conduit, and fire alarm connection by Division 26.
   a. Power transfer shared by electric panic and re-activation sensor wiring (re-activation sensors provided by section 08 71 13).
   b. Lock cylinder by Section 08 71 00, door hardware.
   c. Auto door operator and controls by Section 08 71 13, AUTOMATIC DOOR OPERATORS.

HW-12C (corridor break room)

Each [ADO] Pair Integrated Double Egress Doors to Have:		RATED
1 Steel Frame		-
1 Integrated Pair Doors w/Exit Devices		Q2331 x TYPE 8 EXIT DEVICES (F01)
2 Continuous Hinges		A51031B
1 Overlapping Astragal with Self-Adhesive Seal		R5Y634 x R0E154 x THRU-BOLTS
2 Closers		C02011/C02021 (PT4D, PT4H)
2 Magnetic Holders		C00011 TRI-VOLTAGE
1 Set Self-Adhesive Seals		R0E154

5. Power, wiring, conduit, and fire alarm connection by Division 26.

6. Power, wiring, conduit, and fire alarm connection by Division 26.
   a. Power transfer shared by electric panic and re-activation sensor wiring (re-activation sensors provided by Section 08 71 13).
   b. Auto door operator and controls by Section 08 71 13, AUTOMATIC DOOR OPERATORS.

B. 120VAC power, conduit, and wiring by Division 26.
   1. Card reader by Division 28.
   2. Lock cylinder by Section 08 71 00, DOOR HARDWARE.

C. 120VAC power, conduit, and wiring by Division 26.
   1. Auto door operator and controls by Section 08 71 13, AUTOMATIC DOOR OPERATORS.
   2. Card reader by Division 28.
   3. Power transfer shared by electric panic and re-activation sensor wiring (re-activation sensors provided by Section 08 71 13).
   4. Lock cylinder by Section 08 71 00, DOOR HARDWARE.

   5. Power, wiring, and conduit by Division 26.
   6. Lock cylinder by Section 08 71 00, DOOR HARDWARE.

HW-SH-10A (secure clinic access)

Each [AC, ADO, EL, REX, DPS] Pair Integrated Doors to Have:	RATED
1 Steel Frame	-
1 Integrated Pair Doors w/Elec. Exit Devices	Q2231 x TYPE 8 (E01, E04) ELECTRIC EXIT DEVICES (F01/F08)
2 Continuous Transfer Hinges	A51031B x 12-THRUWIRE TRANSFER x IN-HINGE ACCESS PANEL
1 Power Supply	BY EXIT DEVICE MFR. FOR E04 FUNCTION
1 Self-Adhesive Astragal	R0Y_14
2 Armor Plates	J101 x 1.275 mm (0.050 inch) THICKNESS
2 Floor Stops	L02121 x 3 FASTENERS
1 Set Self-Adhesive Seals	R0E154

D. Power, wiring, conduit, and fire alarm connection by Division 26.
   1. Power transfer shared by electric panic and re-activation sensor wiring (re-activation sensors provided by Section 08 71 13).
   2. Lock cylinder by Section 08 71 00, DOOR HARDWARE.
   3. Auto door operator and controls by Section 08 71 13, AUTOMATIC DOOR OPERATORS.
   3.

E. 120VAC power, conduit, and wiring by DIVISION 26.
   1. Card reader by DIVISION 28.
   2. Lock cylinder by Section 08 71 00, DOOR HARDWARE.

F. All hardware to be coordinated with and submitted by ahc certified consultant to provide a complete and workable system, including necessary components not specifically listed.

- - E N D - -

SECTION 08 71 00
DOOR HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Door hardware and related items necessary for complete installation and operation of doors.

1.2 RELATED WORK

A. Caulking: Section 07 92 00 JOINT SEALANTS.

B. Application of Hardware: Section 08 14 00, WOOD DOORS Section 08 11 13, HOLLOW METAL DOORS AND FRAMES Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS Section 08 71 13.11, LOW ENERGY DOOR OPERATORS Section

C. Finishes: As shown on drawings.

D. Painting: Section 09 91 00, PAINTING.

E. Card Readers: Section 28 13 00, PHYSICAL ACCESS CONTROL SYSTEMS.

F. Electrical: Division 26, ELECTRICAL.

G. Fire Detection: Section 28 31 00, FIRE DETECTION AND ALARM.

1.3 GENERAL

A. All hardware shall comply with ABAAS, (Architectural Barriers Act Accessibility Standard) unless specified otherwise.

B. Provide rated door hardware assemblies where required by most current version of the International Building Code (IBC).

C. Hardware for Labeled Fire Doors and Exit Doors: Conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Provide hardware listed by UL, except where heavier materials, large size, or better grades are specified herein under paragraph HARDWARE SETS. In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.

D. Hardware for application on metal and wood doors and frames shall be made to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.

E. The following items shall be of the same manufacturer, except as otherwise specified:

1. Mortise locksets.

2. Hinges for hollow metal and wood doors.
3. Surface applied overhead door closers.
4. Exit devices.
5. Floor closers.

1.4 WARRANTY

A. Automatic door operators shall be subject to the terms of FAR Clause 52.246-21, except that the Warranty period shall be two years in lieu of one year for all items except as noted below:

1. Locks, latchsets, and panic hardware: 5 years.
2. Door closers and continuous hinges: 10 years.

1.5 MAINTENANCE MANUALS

A. In accordance with Section 01 00 00, GENERAL REQUIREMENTS Article titled "INSTRUCTIONS", furnish maintenance manuals and instructions on all door hardware. Provide installation instructions with the submittal documentation.

1.6 SUBMITTALS

A. Submittals shall be in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES. Submit 6 copies of the schedule per Section 01 33 23. Submit 2 final copies of the final approved schedules to VAMC Locksmith as record copies (VISN Locksmith if the VAMC does not have a locksmith).

B. Hardware Schedule: AHC certified hardware consultant to prepare and submit hardware schedule in the following form:

Hardware Item	Quantity	Size	Reference Publication Type No.	Finish	Mfr. Name and Catalog No.	Key Control Symbols	UL Mark (if fire rated and listed)	ANSI/BHMA Finish Designation

C. Samples and Manufacturers' Literature:

1. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.

2. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.

D. Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

E. Record of opening force measurement for all doors equipped with closers

1.7 DELIVERY AND MARKING

A. Deliver items of hardware to job site in their original containers, complete with necessary appurtenances including screws, keys, and instructions. Tag one of each different item of hardware and deliver to COR for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in COR's office until all other similar items have been installed in project, at which time the COR will deliver items on file to Contractor for installation in predetermined locations on the project.

1.8 PREINSTALLATION MEETING

A. Convene a preinstallation meeting not less than 30 days before start of installation of door hardware. Require attendance of parties directly affecting work of this section, including Contractor and Installer, Architect, COR and VA Locksmith, Hardware Consultant, and Hardware Manufacturer’s Representative. Review the following:

1. Inspection of door hardware.
2. Job and surface readiness.
3. Coordination with other work.
4. Protection of hardware surfaces.
5. Substrate surface protection.
6. Installation.
7. Adjusting.
8. Repair.
9. Field quality control.
10. Cleaning.

1.9 INSTRUCTIONS

A. Hardware Set Symbols on Drawings: Except for protective plates, door stops, mutes, thresholds and the like specified herein, hardware requirements for each door are indicated on drawings by symbols. Symbols for hardware sets consist of letters (e.g., "HW") followed by a number. Each number designates a set of hardware items applicable to a door type.

B. Keying: All cylinders shall be keyed into existing key system. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 7 pin type. Keying information shall be furnished at a later date by the COR.

C. Keying: A new Great Grandmaster key shall be established for this project. The key system shall be small format (Best size and profile) removable core type as previously described. The key blanks shall be protected by a utility patent with a minimum seven years remaining on the patent from the start of construction, and protected by contract-controlled distribution. The manufacturer shall furnish code pattern listings in both paper and electronic formats so keys may be reproduced by code.; provide electronic format in file type required by project’s key control software. The manufacturer shall design the new key system with the capacity to rekey the existing system and also provide for 25 percent expansion capability beyond this requirement. Submit a keying chart for approval showing proposed keying layout and listing expansion capacity.

1. Keying information will be furnished to the Contractor by the COR.
2. Supply information regarding key control of cylinder locks to manufacturers of equipment having cylinder type locks. Notify COR immediately when and to whom keys or keying information is supplied. Return all such keys to the COR.

1.10 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. In text, hardware items are referred to by series, types, etc., listed in such specifications and standards, except as otherwise specified.

B. ASTM International(ASTM):

F883-22.....Padlocks

E2180-20.....Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic Materials

C. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):

A156.1-20.....Butts and Hinges

A156.2-20.....Bored and Pre-assembled Locks and Latches

A156.3-21.....Exit Devices, Coordinators, and Auto Flush Bolts

A156.4-20.....Door Controls (Closers)

A156.5-21.....Cylinders and Input Devices for Locks.

A156.6-20.....Architectural Door Trim

A156.8-20.....Door Controls-Overhead Stops and Holders

A156.11-20.....Cabinet Locks

A156.12-20 .....Interconnected Locks and Latches

A156.13-20.....Mortise Locks and Latches Series 1000

A156.14-20 .....Sliding and Folding Door Hardware

A156.15-20.....Release Devices-Closer Holder, Electromagnetic and Electromechanical

A156.16-20.....Auxiliary Hardware

A156.17-20 .....Self-Closing Hinges and Pivots

A156.18-20.....Materials and Finishes

A156.20-20 .....Strap and Tee Hinges, and Hasps

A156.21-20.....Thresholds

A156.22-20.....Door Gasketing and Edge Seal Systems

A156.23-20.....Electromagnetic Locks

A156.24-20.....Delayed Egress Locking Systems

A156.25-20 .....Electrified Locking Devices

A156.26-20.....Continuous Hinges

A156.28-20 .....Master Keying Systems

A156.29-20 .....Exit Locks and Alarms

A156.30-03 .....High Security Cylinders

A156.31-07 .....Electric Strikes and Frame Mounted Actuators

A156.36-10.....Auxiliary Locks

A250.8-20.....Standard Steel Doors and Frames

D. National Fire Protection Association (NFPA):

80-22.....Fire Doors and Other Opening Protectives

101-24.....Life Safety Code

E. Underwriters Laboratories, Inc. (UL):

Building Materials Directory (2008)

F. Architectural Barriers Act Accessibility Standards (ABAAS)

PART 2 - PRODUCTS

2.1 BUTT HINGES

A. ANSI A156.1. Provide only three-knuckle hinges, except five-knuckle where the required hinge type is not available in a three-knuckle version (e.g., some types of swing-clear hinges). The following types of butt hinges shall be used for the types of doors listed, except where otherwise specified:

1. Exterior Doors: Type A2112/A5112 for doors 900 mm (3 feet) wide or less and Type A2111/A5111 for doors over 900 mm (3 feet) wide. Hinges for exterior outswing doors shall have non-removable pins. Hinges for exterior fire-rated doors shall be of stainless steel material.
2. Interior Doors: Type A8112/A5112 for doors 900 mm (3 feet) wide or less and Type A8111/A5111 for doors over 900 mm (3 feet) wide. Hinges for doors exposed to high humidity areas (shower rooms, toilet rooms, kitchens, janitor rooms, etc. shall be of stainless steel material.

B. Provide quantity and size of hinges per door leaf as follows:

1. Doors up to 1210 mm (4 feet) high: 2 hinges.
2. Doors 1210 mm (4 feet) to 2260 mm (7 feet 5 inches) high: 3 hinges minimum.
3. Doors greater than 2260 mm (7 feet 5 inches) high: 4 hinges.
4. Doors up to 900 mm (3 feet) wide, standard weight: 114 mm x 114 mm (4-1/2 inches x 4-1/2 inches) hinges.
5. Doors over 900 mm (3 feet) to 1065 mm (3 feet 6 inches) wide, standard weight: 127 mm x 114 mm (5 inches x 4-1/2 inches).
6. Doors over 1065 mm (3 feet 6 inches) to 1210 mm (4 feet), heavy weight: 127 mm x 114 mm (5 inches x 4-1/2 inches).
7. Provide heavy-weight hinges where specified.
8. At doors weighing 330 kg (150 pounds) or more, furnish 127 mm (5 inch) high hinges.

C. See Articles "MISCELLANEOUS HARDWARE" and "HARDWARE SETS" for pivots and hinges other than butts specified above and continuous hinges specified below.

2.2 CONTINUOUS HINGES

A. ANSI/BHMA A156.26, Grade 1-600.

1. Listed under Category N in BHMA's "Certified Product Directory."

B. General: Minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete

C. Continuous, Barrel-Type Hinges: Hinge with knuckles formed around a Teflon-coated 6.35mm (0.25-inch) minimum diameter pin that extends entire length of hinge.

1. Base Metal for Exterior Hinges: Stainless steel.
2. Base Metal for Interior Hinges: Stainless steel.
3. Base Metal for Hinges for Fire-Rated Assemblies: Stainless steel.
4. Provide with non-removable pin (hospital tip option) at lockable outswing doors.
5. Where required to clear adjacent casing, trim, and wall conditions and allow full door swing, provide wide throw hinges of minimum width required.
6. Provide with manufacturer’s cut-outs for separate mortised power transfers and/or mortised automatic door bottoms where they occur.
7. Where thru-wire power transfers are integral to the hinge, provide hinge with easily removable portion to allow easy access to wiring connections.
8. Where models are specified that provide an integral wrap-around edge guard for the hinge edge of the door, provide manufacturer’s adjustable threaded stud and machine screw mechanism to allow the door to be adjusted within the wrap-around edge guard.

2.3 DOOR CLOSING DEVICES

A. Closing devices shall be products of one manufacturer for each type specified.

2.4 OVERHEAD CLOSERS

A. Conform to ANSI A156.4, Grade 1.

B. Closers shall conform to the following:

1. The closer shall have minimum 50 percent adjustable closing force over minimum value for that closer and have adjustable hydraulic back check effective between 60 degrees and 85 degrees of door opening.
2. Where specified, closer shall have hold-open feature.
3. Size Requirements: Provide multi-size closers, sizes 1 through 6, except where multi-size closer is not available for the required application.
4. Material of closer body shall be forged or cast.
5. Arm and brackets for closers shall be steel, malleable iron or high strength ductile cast iron.
6. Where closers are exposed to the exterior or are mounted in rooms that experience high humidity, provide closer body and arm assembly of stainless steel material.
7. Closers shall have full size metal cover; plastic covers will not be accepted.
8. Closers shall have adjustable hydraulic back-check, separate valves for closing and latching speed, adjustable back-check positioning valve, and adjustable delayed action valve.
9. Provide closers with any accessories required for the mounting application, including (but not limited to) drop plates, special soffit plates, spacers for heavy-duty parallel arm fifth screws, bull-nose or other regular arm brackets, longer or shorter arm assemblies, and special factory templating. Provide special arms, drop plates, and templating as needed to allow mounting at doors with overhead stops and/or holders.
10. Closer arms or backcheck valve shall not be used to stop the door from overswing, except in applications where a separate wall, floor, or overhead stop cannot be used.
11. Provide parallel arm closers with heavy duty rigid arm.
12. Where closers are to be installed on the push side of the door, provide parallel arm type except where conditions require use of top jamb arm.
13. Provide all surface closers with the same body attachment screw pattern for ease of replacement and maintenance.
14. All closers shall have a 1 ½" (38mm) minimum piston diameter.

2.5 FLOOR CLOSERS AND FLOOR PIVOT SETS

2.6 DOOR STOPS

A. Conform to ANSI A156.16.

B. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction. For concrete, masonry or quarry tile construction, use expansion shields for mounting door stops.

C. Where cylindrical locks with turn pieces or pushbuttons occur, equip wall bumpers Type L02251 (rubber pads having concave face) to receive turn piece or button.

D. Provide floor stops (Type L02141 or L02161) in office areas; Type L02121 x 3 screws into floor elsewhere. Wall bumpers, where used, must be installed to impact the trim or the door within the leading half of its width. Floor stops, where used, must be installed within 4-inches of the wall face and impact the door within the leading half of its width.

E. Where drywall partitions occur, use floor stops, Type L02141 or L02161 in office areas, Type L02121 elsewhere.

F. Provide stop Type L02011, as applicable for exterior doors. At outswing doors where stop can be installed in concrete, provide stop mated to concrete anchor set in 76mm (3-inch) core-drilled hole and filled with quick-setting cement.

G. Omit stops where floor mounted door holders are required and where automatic operated doors occur.

H. Provide appropriate roller bumper for each set of doors (except where closet doors occur) where two doors would interfere with each other in swinging.

I. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.

J. Provide overhead surface applied stop Type C02541, ANSI A156.8 on patient toilet doors in bedrooms where toilet door could come in contact with the bedroom door.

K. Provide door stops on doors where combination closer magnetic holders are specified, except where wall stops cannot be used or where floor stops cannot be installed within 4-inches of the wall.

L. Where the specified wall or floor stop cannot be used, provide concealed overhead stops (surface-mounted where concealed cannot be used).

2.7 OVERHEAD DOOR STOPS AND HOLDERS

A. Conform to ANSI Standard A156.8. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door. Set overhead holders for 110 degree opening, unless limited by building construction or equipment. Provide Grade 1 overhead concealed slide type: stop-only at rated doors and security doors, hold-open type with exposed hold-open on/off control at all other doors requiring overhead door stops.

2.8 FLOOR DOOR HOLDERS

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2.9 LOCKS AND LATCHES

A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over shall have beveled fronts. Lock cylinders shall have not less than seven pins. Cylinders for all locksets shall be removable core type. Cylinders shall be furnished with construction removable cores and construction master keys. Cylinder shall be removable by special key or tool. Construct all cores so that they will be interchangeable into the core housings of all mortise locks, rim locks, cylindrical locks, and any other type lock included in the Great Grand Master Key System. Disassembly of lever or lockset shall not be required to remove core from lockset. All locksets or latches on double doors with fire label shall have latch bolt with 19 mm (3/4 inch) throw, unless shorter throw allowed by the door manufacturer’s fire label. Provide temporary keying device or construction core to allow opening and closing during construction and prior to the installation of final cores.

B. In addition to above requirements, locks and latches shall comply with following requirements:

1. Mortise Lock and Latch Sets: Conform to ANSI/BHMA A156.13. Mortise locksets shall be series 1000, minimum Grade 2. All locksets and latchsets, except on designated doors in Psychiatric (Mental Health) areas, shall have lever handles fabricated from cast stainless steel. Provide sectional (lever x rose) lever design matching [_____]. No substitute lever material shall be accepted. All locks and latchsets shall be furnished with 122.55 mm (4-7/8-inch) curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 21mm (7/8-inch) lip-to-center dimension. Lock function F02 shall be furnished with emergency tools/keys for

emergency entrance. All lock cases installed on lead lined doors shall be lead lined before applying final hardware finish. Furnish armored fronts for all mortise locks. Where mortise locks are installed in high-humidity locations or where exposed to the exterior on both sides of the opening, provide non-ferrous mortise lock case.

2. Auxiliary locks shall be as specified under hardware sets and conform to ANSI A156.36.
3. Locks on designated doors in Psychiatric (Mental Health) areas shall be paddle type with arrow projection covers and be UL Listed. Provide these locks with paddle in the down position on both sides of the door. Locks shall be fabricated of wrought stainless steel.

2.10 PUSH-BUTTON COMBINATION LOCKS

A. ANSI/BHMA A156.5, Grade 1. Battery operated pushbutton entry.

B. Construction: Heavy duty mortise lock housing conforming to ANSI/BHMA A156.13, Grade 1. Lever handles and operating components in compliance with the ABAAS and the ADA Accessibility Guidelines. Match lever handles of locks and latchsets on adjacent doors.

C. Special Features: Key override to permit a master keyed security system and a pushbutton security code activated passage feature to allow access without using the entry code.

2.11 ELECTROMAGNETIC LOCKS

A. ANSI/BHMA A156.23; electrically powered, of strength and configuration indicated; with electromagnet attached to frame and armature plate attached to door. Listed under Category E in BHMA's "Certified Product Directory."

1. Type: Full exterior or full interior, as required by application indicated.
2. Strength Ranking: 1500 pound force (6672 N)
3. Inductive Kickback Peak Voltage: Not more than 53 V.
4. Residual Magnetism: Not more than 4 pound force (18 N) to separate door from magnet.

B. Delayed-Egress Locks: BHMA A156.24. Listed under Category G in BHMA's "Certified Product Directory".

1. Means of Egress Doors: Lock releases within 15 seconds after applying a force not more than 15 pound force (67 N) for not more than 3 seconds, as required by NFPA 101.

2. Security Grade: Activated from secure side of door by initiating device.
3. Movement Grade: Activated by door movement as initiating device.
4. The lock housing shall not project more than 4-inches (101mm) from the underside of the frame head stop.

2.12 ELECTRIC STRIKES

A. ANSI/ BHMA A156.31 Grade 1.

B. General: Use fail-secure electric strikes at fire-rated doors.

2.13 KEYS

A. Stamp all keys with change number and key set symbol. Furnish keys in quantities as follows:

Locks/Keys	**Quantity**
Cylinder locks	2 keys each
Cylinder lock change key blanks	100 each different key way
Master-keyed sets	6 keys each
Grand Master sets	6 keys each
Great Grand Master set	5 keys
Control key	2 keys

2.14 KEY CABINET

2.15 ARMOR PLATES, KICK PLATES, MOP PLATES AND DOOR EDGING

A. Conform to ANSI Standard A156.6.

B. Provide protective plates and door edging as specified below:

1. Kick plates, mop plates and armor plates of metal, Type J100 series.
2. Provide kick plates and mop plates where specified. Kick plates shall be 254 mm (10 inches) or 305 mm (12 inches) high. Mop plates shall be 152 mm (6 inches) high. Both kick and mop plates shall be minimum 1.27 mm (0.050 inches) thick. Provide kick and mop plates beveled on all 4 edges (B4E). On push side of doors where jamb stop extends to floor, make kick plates 38 mm (1-1/2 inches) less than width of door, except pairs of metal doors which shall have plates 25 mm (1 inch) less than width of each door. Extend all other kick and mop plates to within 6 mm (1/4 inch) of each edge of doors. Kick and mop plates

shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.

3. Kick plates and/or mop plates are not required on following door sides:
   a. Armor plate side of doors;
   b. Exterior side of exterior doors;
   c. Closet side of closet doors;
   d. Both sides of aluminum entrance doors.
4. Armor plates for doors are listed under Article "Hardware Sets". Armor plates shall be thickness as noted in the hardware set, 875 mm (35 inches) high and 38 mm (1-1/2 inches) less than width of doors, except on pairs of metal doors. Provide armor plates beveled on all 4 edges (B4E). Plates on pairs of metal doors shall be 25 mm (1 inch) less than width of each door. Where top of intermediate rail of door is less than 875 mm (35 inches) from door bottom, extend armor plates to within 13 mm (1/2 inch) of top of intermediate rail. On doors equipped with panic devices, extend armor plates to within 13 mm (1/2 inch) of panic bolt push bar.
5. Where louver or grille occurs in lower portion of doors, substitute stretcher plate and kick plate in place of armor plate. Size of stretcher plate and kick plate shall be 254 mm (10 inches) high.
6. Provide stainless steel edge guards where so specified at wood doors. Provide mortised type instead of surface type except where door construction and/or ratings will not allow. Provide edge guards of bevel and thickness to match wood door. Provide edge guards with factory cut-outs for door hardware that must be installed through or extend through the edge guard. Provide full-height edge guards except where door rating does not allow; in such cases, provide edge guards to height of bottom of typical lockset armor front. Forward edge guards to wood door manufacturer for factory installation on doors.

2.16 EXIT DEVICES

A. Conform to ANSI Standard A156.3. Exit devices shall be Grade 1; type and function are specified in hardware sets. Provide flush with finished floor strikes for vertical rod exit devices in interior of building. Trim shall have cast satin stainless steel lever handles of design similar to locksets, unless

otherwise specified. Provide key cylinders for keyed operating trim and, where specified, cylinder dogging.

B. Surface vertical rod panics shall only be provided less bottom rod; provide fire pins as required by exit device and door fire labels. Do not provide surface vertical rod panics at exterior doors.

C. Concealed vertical rod panics shall be provided less bottom rod at interior doors, unless lockable or otherwise specified; provide fire pins as required by exit device and door fire labels. Where concealed vertical rod panics are specified at exterior doors, provide with both top and bottom rods.

D. Where removable mullions are specified at pairs with rim panic devices, provide mullion with key-removable feature.

E. At non-rated openings with panic hardware, provide panic hardware with key cylinder dogging feature.

F. Exit devices for fire doors shall comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.

2.17 FLUSH BOLTS (LEVER EXTENSION)

A. Conform to ANSI A156.16. Flush bolts shall be Type L24081 unless otherwise specified. Furnish proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors.

B. Lever extension manual flush bolts shall only be used at non-fire-rated pairs for rooms only accessed by maintenance personnel.

C. Face plates for cylindrical strikes shall be rectangular and not less than 25 mm by 63 mm (1 inch by 2-1/2 inches).

D. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.

E. Provide extension rods for top bolt where door height exceeds 2184 mm (7 feet 2 inches).

2.18 FLUSH BOLTS (AUTOMATIC)

A. Conform to ANSI A156.3. Dimension of flush bolts shall conform to ANSI A115. Bolts shall conform to Underwriters Laboratories, Inc., requirements for fire door hardware. Flush bolts shall automatically latch and unlatch. Furnish dustproof strikes conforming to ANSI A156.16 for bottom flushbolt. Face plates for dustproof strike shall be rectangular and not less than 38 mm by 90 mm (1-1/2 by 3-1/2 inches).

B. At interior doors, provide auto flush bolts less bottom bolt, unless otherwise specified, except at wood pairs with fire-rating greater than 20

minutes; provide fire pins as required by auto flush bolt and door fire labels.

2.19 LIGATURE RESISTANT DOOR ALARM:

2.20 DOOR PULLS WITH PLATES

A. Conform to ANSI A156.6. Pull Type J401, 152 mm CTC (6 inches CTC) length by 19 mm (3/4 inches) diameter minimum with plate Type J302, 90 mm by 381 mm (3-1/2 inches by 15 inches), unless otherwise specified. Provide pull with projection of 57.2 mm (2 1/4 inches) minimum and a clearance of 38.1 mm (1 1/2 inches) minimum. Cut plates of door pull plate for cylinders, or turn pieces where required.

2.21 PUSH PLATES

A. Conform to ANSI A156.6. Metal, Type J302, 203 mm (8 inches) wide by 406.4 mm (16 inches) high. Provide metal Type J302 plates 102 mm (4 inches) wide by 406.4 mm (16 inches) high where push plates are specified for doors with stiles less than 203 mm (8 inches) wide. Cut plates for cylinders, and turn pieces where required.

2.22 COMBINATION PUSH AND PULL PLATES

A. Conform to ANSI 156.6. Type J303, stainless steel 3 mm (1/8 inch) thick, 80 mm (3-1/3 inches) wide by 800 mm (16 inches) high), top and bottom edges shall be rounded. Secure plates to wood doors with 38 mm (1-1/2 inch) long No. 12 wood screws. Cut plates for turn pieces, and cylinders where required. Pull shall be mounted down.

2.23 COORDINATORS

A. Conform to ANSI A156.16. Coordinators, when specified for fire doors, shall comply with Underwriters Laboratories, Inc., requirements for fire door hardware. Coordinator may be omitted on exterior pairs of doors where either door will close independently regardless of the position of the other door. Coordinator may be omitted on interior pairs of non-labeled open where open back strike is used. Open back strike shall not be used on labeled doors. Paint coordinators to match door frames, unless coordinators are plated. Provide bar type coordinators, except where gravity coordinators are required at acoustic pairs. For bar type coordinators, provide filler bars for full width and, as required, brackets for push-side surface mounted closers, overhead stops, and vertical rod panic strikes.

2.24 THRESHOLDS

2.25 AUTOMATIC DOOR BOTTOM SEAL AND RUBBER GASKET FOR LIGHT PROOF OR SOUND CONTROL DOORS

A. Conform to ANSI A156.22. Provide mortise or under-door type, except where not practical. For mortise automatic door bottoms, provide type specific for door construction (wood or metal).

2.26 WEATHERSTRIPS (FOR EXTERIOR DOORS)

2.27 MISCELLANEOUS HARDWARE

A. Access Doors (including Sheet Metal, Screen and Woven Wire Mesh Types): Except for fire-rated doors and doors to Temperature Control Cabinets, equip each single or double metal access door with Lock Type E07213, conforming to ANSI A156.11. Key locks as directed. Ship lock prepaid to the door manufacturer. Hinges shall be provided by door manufacturer.

B. Mutes: Conform to ANSI A156.16. Provide door mutes or door silencers Type L03011 or L03021, depending on frame material, of white or light gray color, on each steel or wood door frame, except at fire-rated frames, lead-lined frames and frames for sound-resistant, lightproof and electromagnetically shielded doors. Furnish 3 mutes for single doors and 2 mutes for each pair of doors, except double-acting doors. Provide 4 mutes or silencers for frames for each Dutch type door. Provide 2 mutes for each edge of sliding door which would contact door frame.

2.28 PADLOCKS FOR VARIOUS DOORS, GATES AND HATCHES

2.29 THERMOSTATIC TEMPERATURE CONTROL VALVE CABINETS

2.30 HINGED WIRE GUARDS (FOR WINDOWS, DOORS AND TRANSOMS) AND WIRE PARTITION DOORS

2.31 FINISHES

A. Exposed surfaces of hardware shall have ANSI A156.18, finishes as specified below. Finishes on all hinges, pivots, closers, thresholds, etc., shall be as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, see Section 09 91 00, PAINTING.

B. 626 or 630: All surfaces on exterior and interior of buildings, except where other finishes are specified.

C. Miscellaneous Finishes:

1. Hinges --exterior doors: 626 or 630.
2. Hinges --interior doors: 652 or 630.
3. Pivots: Match door trim.

4. Door Closers: Factory applied paint finish. Dull or Satin Aluminum color.
5. Thresholds: Mill finish aluminum.
6. Cover plates for floor hinges and pivots: 630.
7. Other primed steel hardware: 600.

D. Hardware Finishes for Existing Buildings: U.S. Standard finishes shall match finishes of hardware in (similar) existing spaces except where otherwise specified.

E. Special Finish: Exposed surfaces of hardware for dark bronze anodized aluminum doors shall have oxidized oil rubbed bronze finish (dark bronze) finish on door closers shall closely match doors.

F. Anti-microbial Coating: All hand-operated hardware (levers, pulls, push bars, push plates, paddles, and panic bars) shall be provided with an anti-microbial/anti-fungal coating that has passed ASTM E2180 tests. Coating to consist of ionic silver (Ag+). Silver ions surround bacterial cells, inhibiting growth of bacteria, mold, and mildew by blockading food and respiration supplies.

2.32 BASE METALS

A. Apply specified U.S. Standard finishes on different base metals as following:

Finish	**Base Metal**
652	Steel
626	Brass or bronze
630	Stainless steel

PART 3 - EXECUTION

3.1 HARDWARE HEIGHTS

A. For existing buildings locate hardware on doors at heights to match existing hardware. The Contractor shall visit the site, verify location of existing hardware and submit locations to VA COR for approval.

B. Hardware Heights from Finished Floor:

1. Exit devices centerline of strike (where applicable) 1024 mm (40-5/16 inches).
2. Locksets and latch sets centerline of strike 1024 mm (40-5/16 inches).

3. Deadlocks centerline of strike 1219 mm (48 inches).
4. Hospital arm pull 1168 mm (46 inches) to centerline of bottom supporting bracket.
5. Centerline of door pulls to be 1016 mm (40 inches).
6. Push plates and push-pull shall be 1270 mm (50 inches) to top of plate.
7. Push-pull latch to be 1024 mm (40-5/16 inches) to centerline of strike.
8. Locate other hardware at standard commercial heights. Locate push and pull plates to prevent conflict with other hardware.

3.2 INSTALLATION

A. Closer devices, including those with hold-open features, shall be equipped and mounted to provide maximum door opening permitted by building construction or equipment. Closers shall be mounted on side of door inside rooms, inside stairs, and away from corridors Measure and adjust opening force for all doors equipped with closers.

B. Hinge Size Requirements:

Door Thickness	**Door Width**	**Hinge Height**
45 mm (1-3/4 inch)	900 mm (3 feet) and less	113 mm (4-1/2 inches)
45 mm (1-3/4 inch)	Over 900 mm (3 feet) but not more than 1200 mm (4 feet)	125 mm (5 inches)
35 mm (1-3/8 inch) (hollow core wood doors)	Not over 1200 mm (4 feet)	113 mm (4-1/2 inches)

C. Hinge leaves shall be sufficiently wide to allow doors to swing clear of door frame trim and surrounding conditions.

D. Where new hinges are specified for new doors in existing frames or existing doors in new frames, sizes of new hinges shall match sizes of existing hinges; or, contractor may reuse existing hinges provided hinges are restored to satisfactory operating condition as approved by COR. Existing hinges shall not be reused on door openings having new doors and new frames. Coordinate preparation for hinge cut-outs and screw-hole locations on doors and frames.

E. Hinges Required Per Door:

Door Description	**Number butts**
Doors 1500 mm (5 ft) or less in height	2 butts
Doors over 1500 mm (5 ft) high and not over 2280 mm (7 ft 6 in) high	3 butts
Doors over 2280 mm (7 feet 6 inches) high	4 butts
Dutch type doors	4 butts
Doors with spring hinges 1370 mm (4 feet 6 inches) high or less	2 butts
Doors with spring hinges over 1370 mm (4 feet 6 inches)	3 butts

F. Fastenings: Suitable size and type and shall harmonize with hardware as to material and finish. Provide machine screws and lead expansion shields to secure hardware to concrete, ceramic or quarry floor tile, or solid masonry. Fiber or rawl plugs and adhesives are not permitted. All fastenings exposed to weather shall be of nonferrous metal.

G. After locks have been installed; show in presence of COR that keys operate their respective locks in accordance with keying requirements. (All keys, Master Key level and above shall be sent Registered Mail to the Medical Center Director along with the bitting list. Also a copy of the invoice shall be sent to the COR for his records.) Installation of locks which do not meet specified keying requirements shall be considered sufficient justification for rejection and replacement of all locks installed on project.

3.3 FINAL INSPECTION

A. Installer to provide letter to VA COR that upon completion, installer has visited the Project and has accomplished the following:

1. Re-adjust hardware.
2. Evaluate maintenance procedures and recommend changes or additions, and instruct VA personnel.
3. Identify items that have deteriorated or failed.
4. Submit written report identifying problems.

3.4 DEMONSTRATION

A. Demonstrate efficacy of mechanical hardware and electrical, and electronic hardware systems, including adjustment and maintenance procedures, to satisfaction of COR and VA Locksmith.

3.5 HARDWARE SETS

A. Following sets of hardware correspond to hardware symbols shown on drawings. Only those hardware sets that are shown on drawings will be required. Disregard hardware sets listed in specifications but not shown on drawings.

B. Hardware Consultant working on a project will be responsible for providing additional information regarding these hardware sets. The numbers shown in the following sets come from BHMA standards.

ELECTRIC HARDWARE ABBREVIATIONS LEGEND:

ADO = Automatic Door Operator

EMCH = Electro-Mechanical Closer-Holder

MHO = Magnetic Hold-Open (wall- or floor-mounted)

C. INTERIOR SINGLE DOORS

HW-1L (EXAM, IMAGING ROOMS)

Each Door to Have:	NON-RATED
1 Continuous Hinge	-
1 Latchset	F04
1 Kick Plate	J102
1 Wall Stop	L02101 CONVEX
1 Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
1 Auto Door Bottom	R0Y346 – HEAVY DUTY
2 Sets Self-Adhesive Seals	R0Y154

HW-2G (TOILETS)

Each Door to Have:	RATED/NON-RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Keyed Privacy Indicator Lock	F13 x OCCUPANCY INDICATOR
1 Closer	C02011/C02021
1 Kick Plate	J102
1 Mop Plate (@ Inswing Doors)	J103
1 Floor Stop	L02121 x 3 FASTENERS
1 Auto Door Bottom	R0Y346 – HEAVY DUTY
2 Set Self-Adhesive Seals	R0Y154

STONE THRESHOLD BY OTHER TRADES.

HW-3E (RECEPTION)

Each Door to Have:	NON-RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Office Lock	F04
1 Floor Stop	L02121 x 3 FASTENERS
1 Set Self-Adhesive Seals	R0Y154
1 Coat Hook	L03121

OMIT COAT HOOK WHERE GLASS LITE PREVENTS INSTALLATION.

HW-3G (OFFICES)

Each Door to Have:	NON-RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Office Lock	F04
1 Floor Stop	L02121 x 3 FASTENERS
1 Coat Hook	L03121
1 Door Viewer (Mental Health Only)	L03221 90 degree (VIEW INTO CORRIDOR)
1 Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
1 Auto Door Bottom	R0Y346 – HEAVY DUTY
2 Sets Self-Adhesive Seals	R0Y154

OMIT VIEWER IF DOOR PROVIDED WITH VISION LITE.

OMIT COAT HOOK WHERE GLASS LITE PREVENTS INSTALLATION.

HW-4A (break /locker; optic shop/waiting entry single door)

Each [ADO] Door to Have:	RATED
1 Continuous Transfer Hinge	x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL
1 Classroom Lock	F05
1 Electric Strike	E09311 (FAIL-SECURE), 24VDC
1 Power Supply	REGULATED, FILTERED, 24VDC, AMPERAGE AS REQUIRED
1 Kick Plate	J102
1 Mop Plate (@ Inswing Doors)	J103 @ TOILET ROOMS ONLY
1 Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1 Floor Stop	L02121 x 3 FASTENERS
1 Set Self-Adhesive Seals	R0Y154

AUTOMATIC DOOR OPERATOR AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.

POWER TRANSFER FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).

HW-5B (STORAGE PYXIS)

Each Door to Have:	RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Storeroom Lock	F07
1 Closer	C02011/C02021
1 Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1 Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1 Floor Stop	L02121 x 3 FASTENERS
1 Set Self-Adhesive Seals	R0Y154

HW-5D (HAC)

Each Door to Have:	NON-RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Storeroom Lock	F07
1 Kick Plate	J102 (@ STORAGE, EVM, & HAC ROOMS ONLY)
1 Floor Stop (@ Inswing Doors)	L02121 x 3 FASTENERS
1 Wall Stop (@ Outswing Doors)	L02101 CONVEX
3 Silencers	L03011

D. **INTERIOR PAIRS OF DOORS**

HW-10D (exam rooms uneven leaf)

Each Pair to Have:	NON-RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT
1 Classroom Lock	F05
1 Overlapping Astragal with Self-Adhesive Seal	R0Y634 x R0Y154 x THRU-BOLTS
2 Kick Plates	J102
2 Floor Stops	L02121 x 3 FASTENERS
1 Set Self-Adhesive Seals	R0Y154

HW-11C (MECHANICAL)

Each Pair to Have:	RATED/NR
Hinges	QUANTITY & TYPE AS REQUIRED
1 Set Auto Flush Bolts	TYPE 25 LESS BOTTOM BOLT
1 Storeroom Lock	F07
1 Coordinator	TYPE 21A
1 Overlapping Astragal with Self-Adhesive Seal	R0Y634 x R0Y154 x THRU-BOLTS C02011/C02021
2 Kick Plates	J102 (@ STORAGE ROOMS ONLY)
2 Floor Stops	L02121 x 3 FASTENERS
1 Threshold	J32300 x 57 MM WIDTH (2-1/4 INCHES)
2 Auto Door Bottoms	R0Y346 – HEAVY DUTY
2 Set Self-Adhesive Seals	R0Y154

HW-12A (CLINIC ENTRY)

Each [MHO] Pair Integrated Doors to Have:	RATED

ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-12C (CORRIDOR)

Each [MHO] Pair Integrated Double Egress Doors to Have: RAT

ALL HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES

HW-13

Each [ADO] Bi-Parting Automatic Pair to Have: NON-RATED

ALL HARDWARE BY SECTION 08 71 13.

SECURITY HARDWARE ABBREVIATIONS LEGEND:
AC = Access Control Device (Card reader, biometric reader, keypad, etc.)
ADO = Automatic Door Operator
DEML = Delayed Egress Magnetic Lock
DEPH = Delayed Egress Panic Exit Device
DPS = Door Position Switch (Door or Alarm Contact)
EL = Electric Lock or Electric Lever Exit Device
PB = Push-button Combination Lock (stand-alone)
RR = Remote Release Button
ELR = Electric Latch Retraction Exit Device
REX = Request-to-Exit Switch in Latching Device Inside Trim

E. **INTERIOR SINGLE SECURITY DOORS**

HW-SH-3C (STORAGE CLOSET)

Each [PB] Door to Have:	RATED
Hinges	QUANTITY & TYPE AS REQUIRED
1 Push-button Combination Lock	N3 – A156.13 F07 G1 E06
1 Closer	C02011/C02021
1 Armor Plate	J101 x 1.275 MM (0.050 INCH) THICKNESS
1 Edge Guard (@ Wood Doors)	J208M / J211 (VERIFY), CUT: HARDWARE
1 Floor Stop	L02121 x 3 FASTENERS
1 Set Self-Adhesive Seals	R0Y154

F. **INTERIOR PAIRS OF SECURITY DOORS**

HW-SH-10A (CORRIDORS)

Each [AC, ADO, EL, REX, DPS] Pair Integrated Doors to Have:	RATED
1 Key Cylinder	TYPE AS REQUIRED

BALANCE OF HARDWARE BY SECTION 08 17 10, INTEGRATED DOOR ASSEMBLIES. AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS.

- - - E N D - - -

SECTION 27 13 23
COMMUNICATIONS OPTICAL FIBER BACKBONE CABLING

PART 1 – GENERAL

1.1 DESCRIPTION:

This section specifies requirements for telecommunications optical fiber backbone cabling.

1.2 SUMMARY

Section Includes:

A. Multimode Optical Fiber Backbone Cables.

B. Single Mode Optical Fiber Backbone Cables.

1.3 REFERENCES

A. VA Infrastructure Standard for Telecommunications Spaces.

1.4 RELATED WORK:

A. Computer room structured cabling: Section 27 10 00, STRUCTURED CABLING.

B. Cable labeling requirements: Section 27 05 53, IDENTIFICATION FOR COMMUNICATIONS SYSTEMS.

1.5 SUBMITTALS:

A. Submit in accordance with Section 27 05 11, REQUIREMENTS FOR COMMUNICATIONS INSTALLATIONS.

PART 2 – PRODUCTS

2.1 MULTIMODE OPTICAL FIBER BACKBONE CABLES.

Multimode fiber optic backbone cables are specified for inside plant use, for intrabuilding facility backbone.

A. Performance Category. Laser-optimized OM4 cables are specified.

B. Testing. All fiber optic backbone media shall pass all Tier 1 requirements (attenuation with an Optical Loss Test Set or OLTS, verification of cable length and polarity) and all Tier 2 requirements (characterization by an Optical Time Domain Reflectometer or OTDR resulting in indication of the uniformity of cable attenuation and connector insertion loss).

C. Termination. Fiber will be field terminated (fusion spliced) when used to connect the computer room to Telecommunications Rooms (TRs).

D. Jacket Color.

1. OM4. Aqua.

E. Jacket Rating. Communications Multipurpose Cable, Plenum (CMP) shall be specified if any portion of the cable passes through an NEC-defined plenum. Communications Multipurpose Cable, Riser (CMR) shall be specified for all other applications. CMP may be used as a substitute for CMR.

F. Bundling and Construction. Bundles consisting of multiples of sub-bundles (subunits) of 24 strands of fiber are specified. Cables shall be dielectric and tight-buffered. Construction shall match the rear entry requirements of the fiber optic distribution or splice cassette such that the sub-bundle (subunit) remains jacketed into the cassette.

G. Length. Backbone cabling for computer room first level backbone use (pre-terminated) shall be procured to the specific length required by the design (horizontal and vertical paths) with no more than 1 meter of excess length on each end.

2.2 SINGLE MODE OPTICAL FIBER BACKBONE CABLES.

Single mode fiber optic backbone cables are specified for inside use, for campus backbone (intrabuilding) use.

A. Performance Category. OS1 is specified for inside plant applications.

B. Testing. All fiber optic backbone media shall pass all Tier 1 requirements (attenuation with an Optical Loss Test Set or OLTS, verification of cable length and polarity) and all Tier 2 requirements (characterization by an Optical Time Domain Reflectometer or OTDR resulting in indication of the uniformity of cable attenuation and connector insertion loss).

C. Termination. Fiber will be field terminated (fusion spliced) when used to connect the computer room to Telecommunications Rooms (TRs).

D. Jacket Color. Yellow.

E. Jacket Rating. Communications Multipurpose Cable, Plenum (CMP) shall be specified if any portion of the cable passes through an NEC-defined plenum. Communications Multipurpose Cable, Riser (CMR) shall be

specified for all other applications. CMP may be used as a substitute for CMR.

F. Bundling and Construction. Bundles consisting of multiples of sub-bundles (subunits) of 12 strands of fiber are specified. Cables shall be dielectric and tight-buffered for OS1.

2.3 HYBRID OPTICAL FIBER BACKBONE CABLES. (NOT USED)

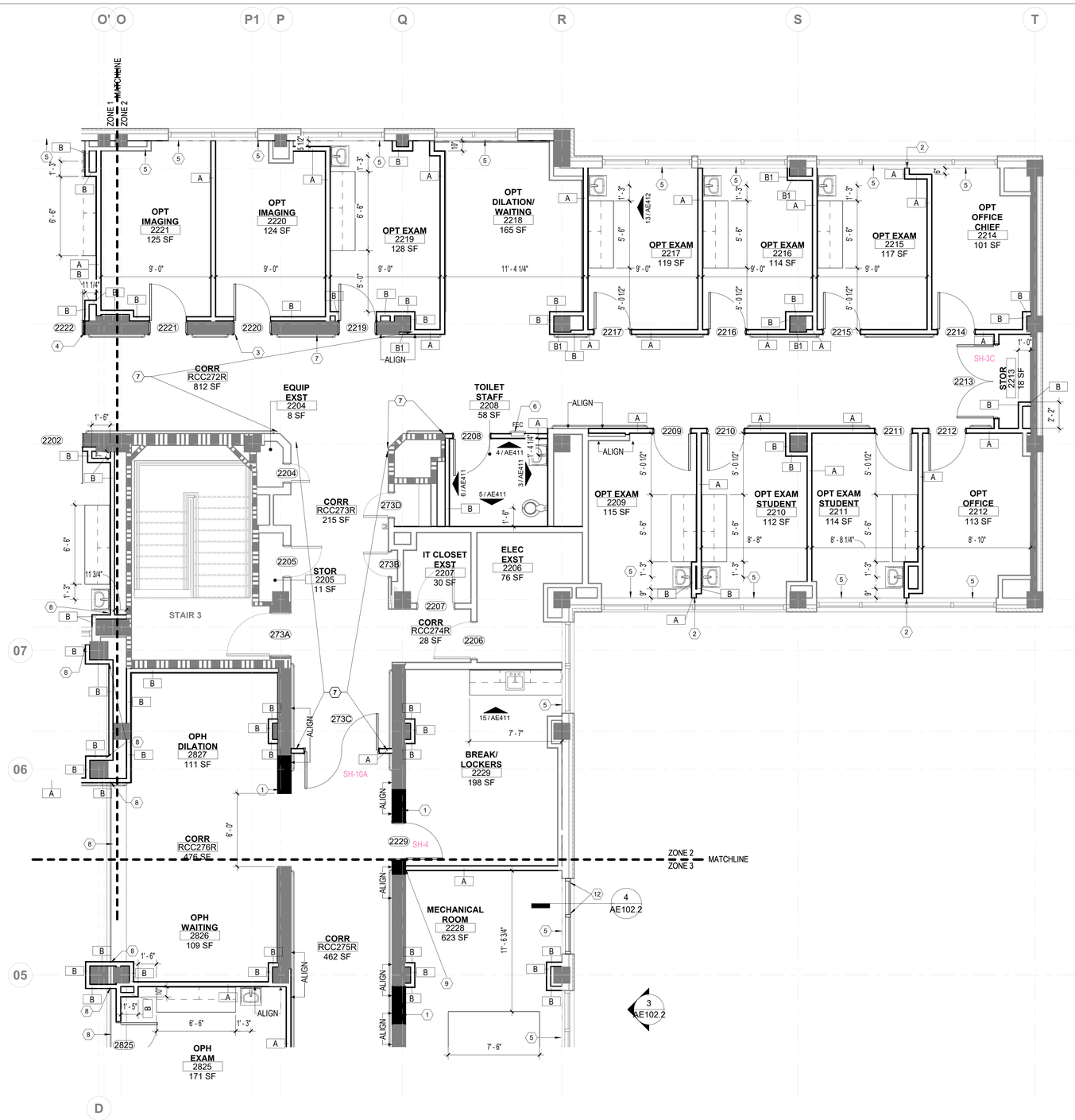
PART 3 - EXECUTION

3.1 IMPLEMENTATION.

A. All cabling and equipment shall be labeled per the requirements of the VA Infrastructure Standard for Telecommunications Spaces.

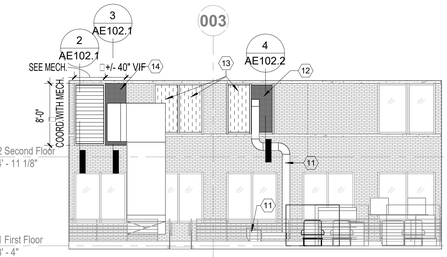
B. Interior to telecommunications spaces, install fiber optic backbone cabling in overhead cable tray and fiber raceway systems.

- - - E N D - - -



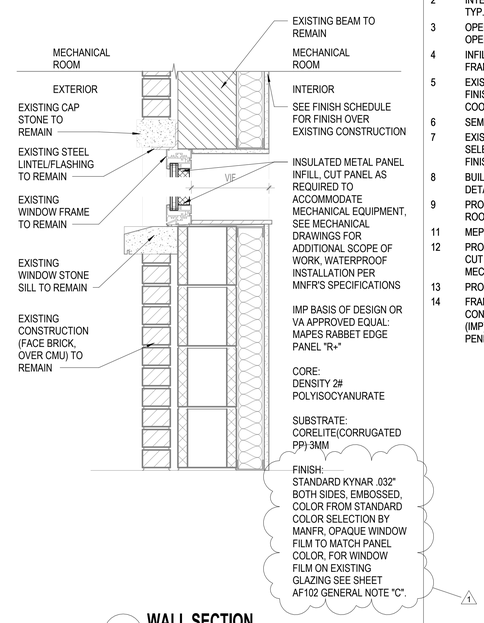
1 FLOOR PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS - ZONE 2

1/4" = 1'-0"



3 BUILDING ELEVATION

1/8" = 1'-0"



4 WALL SECTION

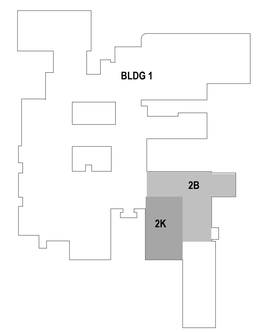
1 1/2" = 1'-0"

GENERAL SHEET NOTES

A. SEE LIFE SAFETY PLAN FOR FIRE-RATED PARTITION LEGEND.
B. SEE AE501 FOR PARTITION TYPE DETAILS.
C. SEE A001, A002 FOR ARCHITECTURAL SHEET NOTES, SYMBOLS AND ABBREVIATIONS.
D. EXISTING PLASTER WALLS, NOT SHOWN TO BE DEMOLISHED, TO REMAIN U.N.O. REMOVE ALL EXISTING WALL BASE AND WALL MOUNTED ITEMS IN THOSE WALLS, AS REQUIRED. PATCH AND PREPARE TO RECEIVE NEW FINISHES AS SCHEDULED. WHERE EXISTING PLASTER WALLS ARE SHOWN ADJACENT TO NEW GYPSUM WALL, CREATE A SMOOTH TRANSITION AND PREP SURFACE TO RECEIVE NEW FINISH AS SCHEDULED.
E. VERIFY IN FIELD ALL OPENINGS IN EXISTING SHEAR WALLS. NOTIFY AE AND VA OF ANY DISCREPANCIES UNCOVERED DURING CONSTRUCTION.
F. SEE GI101.1 FOR ENLARGED FLOOR PLAN ZONES.

KEYNOTES

1 EXISTING SHEAR WALL OPENING INFILL, SEE STRUCTURAL DRAWINGS. PATCH TO MATCH EXISTING PLASTER, AS NEEDED, AND PREP SURFACE TO RECEIVE FINISHES AS SCHEDULED.
2 INTERIOR PARTITION CENTERED ON EXISTING MULLION, SEE 4/AE511, TYP. AT ALL LOCATIONS.
3 OPENING IN EXISTING SHEAR WALL, SEE STRUCTURAL. FRAME OPENING, MATCH EXISTING PLASTER AND PAINT AS SCHEDULED.
4 INFILL PORTION OF OPENING IN EXISTING SHEAR WALL AROUND DOOR FRAME.
5 EXISTING PLASTER WALL TO REMAIN, PATCH AND PREP TO RECEIVE FINISHES AS SCHEDULED, TYPICAL AT ALL EXTERIOR PERIMETER, COORDINATE WITH DEMOLITION WORK.
6 SEMI RECESSED FIRE EXTINGUISHER CABINET.
7 EXISTING PLASTER WALL TO REMAIN TO THE EXTENT POSSIBLE AFTER SELECTIVE DEMOLITION. PATCH AND PREP, AS REQUIRED, TO RECEIVE FINISHES AS SCHEDULED.
8 BUILDING EXPANSION JOINT, SEE ROOM FINISH LEGEND AT AF601 FOR DETAILS.
9 PROVIDE 1 HR RATING AT EXISTING SHEAR WALL IN THE MECHANICAL ROOM.
11 MEP EQUIPMENT, SEE MEP DRAWINGS.
12 PROVIDE INSULATED METAL PANEL WITHIN EXISTING WINDOW FRAME, CUT PANEL TO ACCOMMODATE MECHANICAL DUCT PENETRATION, SEE MECHANICAL DRAWINGS.
13 PROVIDE OPAQUE WINDOW FILM ON EXISTING GLAZING.
14 FRAME THE OPENING AFTER DEMOLITION OF PART OF EXTERIOR CONSTRUCTION. SEE 2/AD102. PROVIDE INSULATED METAL PANEL (IMP). CUT PANEL TO ACCOMMODATE MECHANICAL DUCT PENETRATION, SEE MECHANICAL DRAWINGS. REFER TO 3/AE102.1.



KEYPLAN

ADDENDUM #1	11/06/2026
ISSUED FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	03/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
65% DESIGN DEVELOPMENT SUBMITTAL	09/08/2025
35% SCHEMATIC DESIGN RESUBMITTAL	06/30/2025
Revisions:	Date:

CONSULTANT

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Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ARCHITECTURAL - FLOOR PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS - ZONE 2

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: CR

Drawn: LD

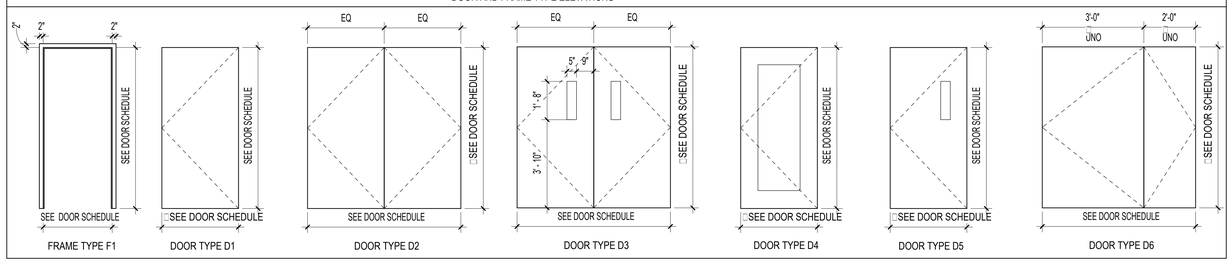
Project Number: 521-24-102

Building Number: #1

Drawing Number: AE102.2

VA FORM 08-6231

DOOR AND FRAME TYPE ELEVATIONS

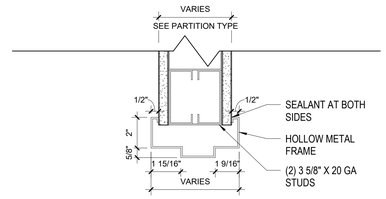


DOOR SCHEDULE

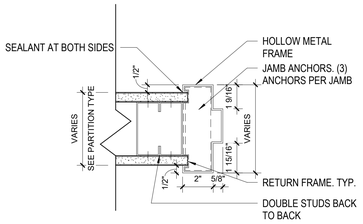
GENERAL NOTES:
A.SEE SHEET A001 FOR SYMBOLS AND ABBREVIATIONS.
B.COORDINATE ALL DOOR HARDWARE WITH VA/COR PRIOR ORDERING.
C.SEE SPECIFICATIONS FOR DOOR GLAZING TYPES.
D.SEE SPECIFICATIONS FOR DOOR HARDWARE TYPES.
E.FIELD VERIFY ALL DOOR OPENINGS PRIOR ORDERING.
F.MANUFACTURER EGGERS INDUSTRIES OR VA APPROVED EQUAL. STAIN TO MATCH WILSONART FUSION MAPLE LAMINATE.
G.ALL DOOR HARDWARE TO BE ADA-COMPLIANT.
H.ALL DOOR HARDWARE FINISH TO BE STAINLESS STEEL, SATIN FINISH....

NOTES:

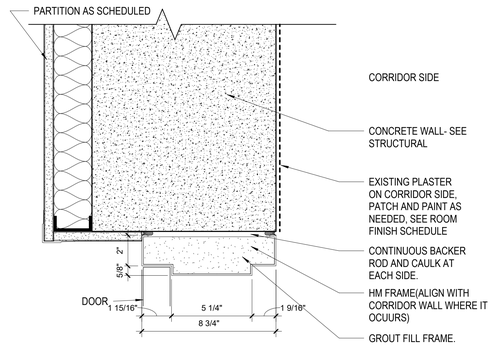
MARK	ROOM NAME	ROOM NUMBER	DOOR					DOOR ELEVATION	DOOR GLAZING	FRAME MATERIAL	FRAME			HARDWARE SET	FIRE RATING	NOTES
			WIDTH	HEIGHT	THICKNESS	MATERIAL	TYPE				MATERIAL	ELEVATION	HEAD	JAMB		
270A	CORR	-	6' - 0"	7' - 0"	1 3/4"	WD	D3	35	MG-1	HM	HM	F1	1/AE601	2/AE601	12A	90 MIN	
270B	CORR	RCC272R	6' - 0"	7' - 0"	1 3/4"	WD	D3	35	MG-1	HM	HM	F1	1/AE601	2/AE601	SH-10A	1	
273A	CORR	RCC273R	3' - 6"	7' - 0"	1 3/4"	WD	EXISTING TO REMAIN	59		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
273B	IT CLOSET EXST	2207	2' - 0"	7' - 0"	1 3/4"	WD	EXISTING TO REMAIN	63		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
273C	CORR	RCC273R	6' - 0"	7' - 0"	1 3/4"	WD	D2	75		HM	F1	5/AE601	6/AE601	12C	1	
273D			2' - 0"	7' - 0"	1 3/4"	WD	EXISTING TO REMAIN	57		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
284A	CORR	-	3' - 6"	7' - 0"	1 3/4"	WD	D1	84	MG-1	HM	HM	F1	1/AE601	2/AE601	4A	90 MIN	
284B	CORR	RCC284R	3' - 6"	7' - 0"	1 3/4"	WD	D1	84	MG-1	HM	HM	F1	1/AE601	2/AE601	4A	90 MIN	
284C	CORR	RCC276R	6' - 0"	7' - 0"	1 3/4"	WD	D3	35	MG-1	HM	HM	F1	1/AE601	2/AE601	SH-10A		
2201A	CORR	RCC277R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3E		
2201B	CORR	RCC277R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3E	1	
2202	CORR	RCC272R	5' - 0"	7' - 0"	1 3/4"	WD	D6	90			HM	F1			10D		
2203	CORR	RCC277R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2204	EQUIP EXST	2204	1' - 6"	7' - 0"	1 3/4"	WD	E	55		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
2205	STOR	2205	2' - 6"	7' - 0"	1 3/4"	WD	EXISTING TO REMAIN	56		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
2206	ELEC EXST	2206	3' - 0"	7' - 0"	1 3/4"	WD	EXISTING TO REMAIN	33		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
2207	CORR	RCC274R	3' - 0"	7' - 0"	1 3/4"	WD	EXISTING TO REMAIN	33		HM	HM	EXISTING RO REMAIN	1/AE601	2/AE601	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN, REPAINT DOOR AND FRAME TO MATCH NEW
2208	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	2G		
2209	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2210	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2211	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2212	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2213	CORR	RCC272R	6' - 0"	7' - 0"	1 3/4"	WD	D2	35		HM	HM	F1	1/AE601	2/AE601	SH-3C		
2214	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2215	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2216	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2217	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2219	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	85		HM	HM	F1	3/AE601	4/AE601	1L		
2220	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	85		HM	HM	F1	3/AE601	4/AE601	1L		
2221	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	85		HM	HM	F1	3/AE601	4/AE601	1L		
2222	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	85		HM	HM	F1	3/AE601	4/AE601	1L		
2223	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	85		HM	HM	F1	3/AE601	4/AE601	1L		
2224	CORR	RCC272R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L	1	
2225	CORR	RCC270R	3' - 0"	7' - 0"	1 3/4"	WD	4A	33	MG-1	HM	HM	F1	1/AE601	2/AE601	4A		
2226	CORR	RCC271R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	2G		
2227	CORR	RCC271R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	2G		
2228	CORR	RCC275R	6' - 0"	7' - 0"	1 3/4"	HM	D2	35		HM	HM	F1	1/AE601	2/AE601	11C	45 MIN	PROVIDE ELECTRIC STRIKE, MORTISED IN THE INACTIVE LEAF
2229	BREAK/ LOCKERS	2229	3' - 0"	7' - 0"	1 3/4"	WD	D1	85		HM	HM	F1	3/AE601	4/AE601	4A	1	
2801	CORR	RCC283R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2802	CORR	RCC283R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2803	OPH EXAM	2803	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2804	OPH EXAM	2804	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2805	CORR	RCC282R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2806	CORR	RCC282R	5' - 0"	7' - 0"	1 3/4"	WD	D6	90			HM	F1			10D	1	
2807	CORR	RCC282R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2808	CORR	RCC281R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2809	CORR	RCC281R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2810	CORR	RCC282R	3' - 6"	7' - 0"	1 3/4"	WD	D1	65		HM	HM	F1	1/AE601	2/AE601	2G		
2811	CORR	RCC282R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	5B		
2813	CORR	RCC280R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2814	CORR	RCC280R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2815	CORR	RCC280R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2816	CORR	RCC280R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	3G		
2817	OPH STOR	2817	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	5B		
2818	CORR	RCC278R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	5D		
2820	OPH EXAM	2820	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2821	CORR	RCC278R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2822	CORR	RCC278R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2823	CORR	RCC278R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2824	CORR	RCC278R	3' - 0"	7' - 0"	1 3/4"	WD	D1	33		HM	HM	F1	1/AE601	2/AE601	1L		
2825	CORR	RCC278R	5' - 0"	7' - 0"	1 3/4"	WD	D6	90			HM	F1			10D	1	



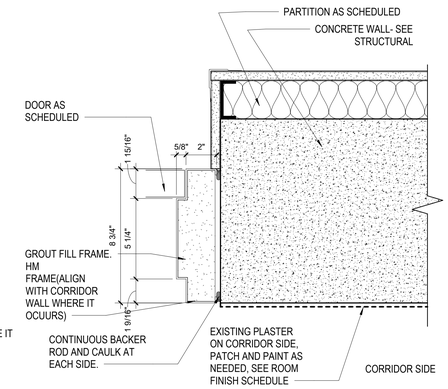
1 TYPICAL HEADER AT STUD WALL
3" = 1'-0"



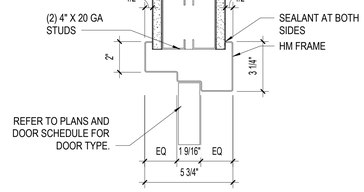
2 TYPICAL JAMB AT STUD WALL
3" = 1'-0"



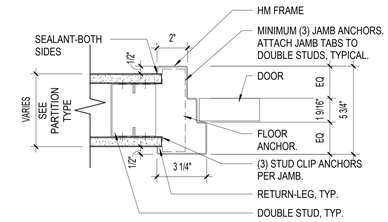
3 TYPICAL HEADER AT SHEAR WALL
3" = 1'-0"



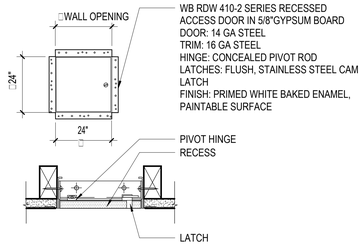
4 TYPICAL JAMB AT SHEAR WALL
3" = 1'-0"



5 DOUBLE EGRESS HEADER
3" = 1'-0"



6 DOUBLE EGRESS JAMB
3" = 1'-0"



7 ACCESS DOOR
3" = 1'-0"

ADDENDUM #1	**11/06/2026**
ISSUED FOR BID	**05/15/2026**
100% CONSTRUCTION DOCUMENTS	**03/16/2026**
95% CONSTRUCTION DOCUMENTS	**01/30/2026**
65% DESIGN DEVELOPMENT RESUBMITTAL	**12/01/2025**
65% DESIGN DEVELOPMENT SUBMITTAL	**09/08/2025**
Revisions:	**Date:**

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Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
ARCHITECTURAL - DOOR SCHEDULE AND DETAILS

Approved: Project Director

Phase
ISSUED FOR BID

FULLY SPRINKLERED

Project Title
RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location
BIRMINGHAM VAMC

Issue Date 11/06/2026
Checked CR
Drawn LD

Project Number 521-24-102
Building Number #1
Drawing Number AE601

VA FORM 08-6231



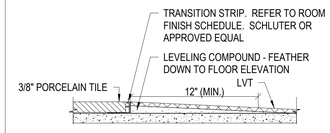
GENERAL SHEET NOTES

A. SEE AF601 FOR FINISH LEGEND AND ROOM FINISH SCHEDULE.
B. COORDINATE ALL FINISHES AND LOCATIONS WITH VA.
C. PROVIDE TRANSPARENT WINDOW GLAZING FILM AT ALL EXISTING EXTERIOR WINDOW GLAZING (WITH THE EXCEPTION OF OPAQUE WINDOW FILM AS SHOWN ON AE102.2) WITHIN THE SCOPE OF WORK. WINDOW FILM MINIMUM THICKNESS AND TYPE SHALL BE 7-MIL-THICK ANTI-SHATTER/ANTI-FRAGMENTATION FILM, COMPLYING WITH ASTM F162. COORDINATE SCOPE OF WORK WITH THE VA/COR.

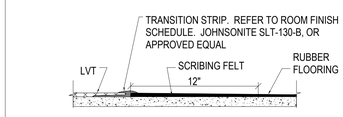
LEGEND

LVT-2

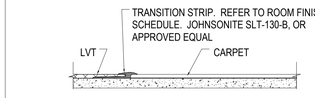
LVT-3



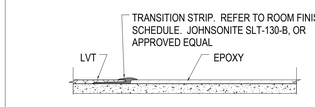
TS-1



TS-2(NOT USED)



TS-3



TS-4

N

1 FINISH PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS

1/8" = 1'-0"

0 4' 8' 16'

ADDENDUM #1	11/06/2026
ISSUED FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	03/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
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Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ARCHITECTURAL - FINISH PLAN - PARTIAL SECOND FLOOR - 2K, 2B AREAS

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: CR

Drawn: LD

Project Number: 521-24-102

Building Number: #1

Drawing Number: AF102

VA FORM 08-6231

MOUNTING HEIGHTS FOR ELECTRICAL DEVICES

DEVICE	MOUNTING HEIGHTS
LIGHT SWITCHES, WALL MOUNTED OCCUPANCY SENSORS	48" TO CENTERLINE OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
DISCONNECT SWITCHES, MOTOR STARTERS, MOTOR PUSH BUTTON STATIONS	60" TO CENTERLINE.
WALL MOUNTED EXIT SIGNS	90" TO CENTERLINE OF SIGN OR CENTERED IN WALL AREA BETWEEN TOP OF DOOR AND CEILING.
CEILING MOUNTED EXIT SIGNS	80" TO BOTTOM FIXTURE.
RECEPTACLES	16" TO BOTTOM OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
SPECIAL OUTLETS OR RECEPTACLES	16" TO BOTTOM OF BOX OR AS NOTED ON DRAWINGS. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
PLUGMOLD OR WIREMOLD	AS NOTED ON DRAWINGS. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
CLOCK OUTLETS	12" CEILING TO CENTERLINE OR 7'-0" TO CENTERLINE IF CEILING IS OVER 8'-0".
DATA/COMMUNICATION OR TELEPHONE OUTLETS	16" TO BOTTOM OF BOX.
TELEPHONE OUTLETS - WALL TYPE	54" TO DIAL CENTER (NON-ACCESSIBLE). 48" TO HIGHEST OPERABLE PART (ACCESSIBLE).
TEMPERATURE/HUMIDITY SENSORS	60" TO CENTER LINE OF BOX.
FIRE ALARM MANUAL PULL STATIONS	48" TO CENTERLINE OF BOX - NOT MORE THAN 5'-0" FROM EXIT.
FIRE ALARM AUDIBLE ONLY DEVICE	NOT LESS THAN 90" TO TOP OR 6" BELOW CEILING, WHICH EVER IS HIGHER.
FIRE ALARM VISUAL ONLY DEVICE OR A COMBINATION AUDIBLE AND VISUAL DEVICE	80" TO BOTTOM OF DEVICE OR NOT MORE THAN 96" TO TOP.
WALL MOUNTED REMOTE INDICATOR LIGHT	80" TO CENTERLINE OF DEVICE OR 6" BELOW CEILING, WHICHEVER IS LOWER.
AREA OF REFUGE TELEPHONE	SAME AS TELEPHONE - ACCESSIBLE.
CALL FOR AID SWITCH WITH PULL CHAIN TO FLOOR	48" TO CENTERLINE OF BOX MINIMUM (TOILETS). 66" TO CENTERLINE OF BOX MAXIMUM (SHOWERS - LOCATED OUT OF SPRAY AREA).
CARD READER	48" TO HIGHEST OPERABLE PART (SIDE OR FORWARD ACCESS).
INTERCOM STATION	54" TO HIGHEST OPERABLE PART (SIDE ACCESS). 48" HIGHEST OPERABLE PART (FORWARD ACCESS).
SOUND SYSTEM VOLUME CONTROL	54" TO HIGHEST OPERABLE PART (SIDE ACCESS). 48" HIGHEST OPERABLE PART (FORWARD ACCESS).
MICROPHONE OUTLETS	16" TO BOTTOM OF BOX.
THERMOSTATS	54" TO HIGHEST OPERABLE PART (SIDE ACCESS). 48" HIGHEST OPERABLE PART (FORWARD ACCESS).
TEMPERATURE/HUMIDITY SENSORS	60" TO CENTER LINE OF BOX.

NOTES:

1. ALL DIMENSIONS ARE CONSIDERED FROM FINISHED FLOOR AND, UNLESS NOTED OTHERWISE, SHALL NOT VARY. RAISED FLOORS SHALL BE CONSIDERED FINISHED FLOOR.
2. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DETAILS AND MAY BE ADJUSTED TO CONFORM WITH ARCHITECTURAL REQUIREMENTS AS LONG AS NO CODE RESTRICTION IS VIOLATED.
3. OUTLETS INSTALLED LOWER THAN 15" AFF (FORWARD REACH) AND 9" AFF (SIDE REACH) ARE IN VIOLATION OF ADA.

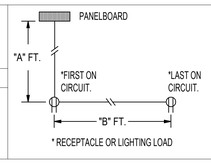
SPECIAL NOTES:

1. EXIT SIGNS SHALL NOT BE INSTALLED IN A MANNER THAT THE SIGN WILL BLOCK FIRE ALARM VISUAL DEVICES.
2. FOR LIGHTING FIXTURES MOUNTING HEIGHTS SEE SCHEDULE AND DRAWINGS.

WIRE SIZING TABLE

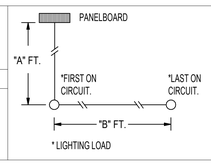
FOR 120V-20A BRANCH CIRCUITS ONLY (UNLESS NOTED OTHERWISE)

IF DISTANCE (A+B) IN FEET IS: (SEE DIAGRAMAT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY.	
	WIRE SIZE	CONDUIT SIZE
0' TO 100'	#12 AWG (MIN.)	3/4"
100' TO 175'	#10 AWG	3/4"
175' TO 300'	#8 AWG	3/4"
300' TO 450'	#6 AWG (MAX.)	1"



FOR 277V-20A BRANCH CIRCUITS ONLY (UNLESS NOTED OTHERWISE)

IF DISTANCE (A+B) IN FEET IS: (SEE DIAGRAMAT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY.	
	WIRE SIZE	CONDUIT SIZE
0' TO 250'	#12 AWG (MIN.)	3/4"
250' TO 400'	#10 AWG	3/4"
400' TO 700'	#8 AWG	3/4"
700' TO 1000'	#6 AWG (MAX.)	1"



NOTES:

1. TABLES ARE BASED ON EVENLY DISTRIBUTED LOAD ALLOWING A 3% VOLTAGE DROP AT LAST OUTLET.
2. 480V MOTOR BRANCH CIRCUIT CONDUCTORS SHALL BE #12 AWG IN 3/4" C UNLESS OTHERWISE NOTED.
3. SIZE OF CONDUCTORS ARE BASED UPON EACH MOTOR BEING FED WITH SEPARATE CONDUIT. IF CONDUCTORS FOR TWO MOTORS (MAX.) ARE TO BE COMBINED IN ONE CONDUIT, INCREASE THE SIZE OF CONDUCTORS AND CONDUITS PER NATIONAL ELECTRICAL CODE (NEC), TO COMPENSATE FOR CONDUCTOR DE-RATING.
4. PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT.

ELECTRICAL GENERAL NOTES

SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL REQUIREMENTS LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AND AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED BELOW.

EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) PROTOCOLS": IS TO BE FOLLOWED FOR ALL EQUIPMENT, MATERIAL AND ASSEMBLIES SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE FULL BOD EQUIVALENCY SUBSTITUTION REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

1. CODES

   THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, STATE, NATIONAL CODES, AND ALL VA APPLICABLE DESIGN MANUALS STANDARDS REQUIREMENTS. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.

   ALL WORK, MATERIAL, AND EQUIPMENT SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (N.E.C.), NATIONAL ELECTRICAL SAFETY CODE, OSHA, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES ALONG WITH ALL DESIGN CRITERIA STD AND REQUIREMENTS. ALL ELECTRICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE NEW (UNLESS OTHERWISE NOTED) AND SHALL BEAR THE MARK OF NATIONALLY RECOGNIZED TESTING LABORATORY. ALL EQUIPMENT OF THE SAME TYPE AND CAPACITY SHALL BE BY THE SAME MANUFACTURER.

2. DRAWINGS AND SPECIFICATIONS

   THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.
   CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS: INCLUDING BUT NOT NECESSARILY LIMITED TO ALL ARCHITECTURAL, ALL STRUCTURAL, ALL MECHANICAL, ALL ELECTRICAL, ALL PLUMBING, AND ENTIRE SPECIFICATIONS. CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN THE SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF THE ELECTRICAL WORK. CONTRACTOR SHALL FULLY COORDINATE ELECTRICAL WORK WITH THE INSTALLATION OF WORK BY ALL OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE BASE SCOPE OF WORK AT NO ADDITIONAL COST TO THE VA.

3. INTERPRETATION OF THE DOCUMENTS

   CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE COR BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE BID, IT WILL NOT BE CONSIDERED EXTRA.
   ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, IN A NEAT AND WORKABLE MANNER CONSISTENT WITH RECOGNIZED GOOD PRACTICE, AND SHALL BE SUBJECT TO THE APPROVAL OF THE VA.
   ANY CHANGES TO THE CONTRACT REQUIREMENTS MUST BE APPROVED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL KEEP UP-TO-DATE DRAWINGS, ON-SITE, AVAILABLE, INCLUDING ALLOWABLE DEVIATIONS FROM THE CONTRACT DRAWINGS.

4. ELECTRICAL DRAWINGS

   THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC. THE LOCATION OF RACEWAY SYSTEM COMPONENTS IS SCHEMATIC. THE EXACT LOCATION OF RACEWAY SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES AND ROUGH-INS PRIOR TO STARTING WORK.

5. SITE EXAMINATION

   BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THIS VISIT SHALL ONLY BE ALLOWED AS PER THE VA SCHEDULED WALKTHROUGH AND THE SUBMISSION OF A BID WILL BE CONSTRUED AS EVIDENCE THAT SUCH A VISIT HAS BEEN MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH VISIT BEEN MADE.

6. COORDINATION WITH OTHER TRADES

   THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH MECHANICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, ROUGH-IN LOCATIONS, AND OTHER ADDITIONAL SCOPE OF WORK THAT MAY NOT BE SHOWN ON THE ELECTRICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL 120 VOLT (AND HIGHER) AC POWER TO OTHER TRADES EQUIPMENT AND HARDWARE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROLS, FIRE AND SECURITY SYSTEMS, MOTORIZED DOORS, DAMPERS, LIFTS, AND OTHER SYSTEMS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT. THE CONTRACTOR SHALL CHECK ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL TRADES WORK FOR POSSIBLE INTERFERENCE CAUSED BY CONDITIONS IN THE FIELD BEFORE THE BID IS MADE. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE TO THE CONTRACTOR BY REASON OF HISHER FAILURE TO HAVE MADE SUCH EXAMINATIONS OR OF ANY ERROR OF HISHER PART.

7. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER DURING CONSTRUCTION FOR ALL NEW EQUIPMENT FURNISHED BY THE ELECTRICAL CONTRACTOR.

   CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, INSPECTIONS AND TAXES APPLICABLE TO THIS DIVISION IF NECESSARY. (FEDERAL GOVERNMENT IS NOT SUBJECT TO LOCAL PERMITS OR FEE FOR THE PROJECT).

8. FIRE STOPPING

   ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO OR APPROVED EQUAL.

9. PAINTING

   ALL NEWLY INSTALLED EXPOSED PIPING SHALL BE PAINTED TO MATCH THE EXISTING ADJACENT WALL OR CEILING SURFACE.

10. VA FURNISHED EQUIPMENT

    EQUIPMENT THAT WILL BE FURNISHED BY THE VA SHALL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE VA FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE COR, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPTING THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT, AND ULTIMATELY INSTALL THE EQUIPMENT.

11. ELECTRICAL SERVICE DISRUPTIONS

    ANY WORK INVOLVING A TASK WHICH EXPOSES ACTIVE BUS SHALL BE PERFORMED AFTER HOURS (11:00PM TO 5:00AM). THIS RESTRICTION INCLUDES REMOVING THE COVER FROM ANY PANEL BOARD, SWITCHBOARD, M.C.C. ETC. ALL WORK WHICH EXPOSES ACTIVE BUS REQUIRES A WRITTEN NOTIFICATION TO THE COR WHICH WILL OUTLINE THE METHOD OF PROCEDURE FOR THE WORK. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 3 WEEKS NOTICE TO THE COR BEFORE WORKING ON ANY ENERGIZED ELECTRICAL SYSTEM. ADDITIONALLY, CONTRACTOR SHALL OBTAIN MEDICAL CENTER DIRECTOR'S APPROVAL. ALL POWER DISRUPTION SHALL OCCUR AT TIMES AND OF DURATIONS ACCEPTABLE TO THE COR.

12. EQUIPMENT

    ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.
    THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, TOOLS, EQUIPMENT SERVICES, AND ACCESSORIES FOR COMPLETE INSTALLATION OF ALL ELECTRICAL WORK AS NOTED. ITEMS OMITTED FROM EITHER THE SPECIFICATIONS OR THE DRAWINGS, BUT SHOWN OR DESCRIBED IN ONE OR THE OTHER, AND ITEMS NECESSARY TO MAKE THE ELECTRICAL SYSTEM COMPLETE AND WORKABLE SHALL FORM A PART OF THE WORK.

13. MISCELLANEOUS SUPPORTING MEMBERS

    ALL ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC. REQUIRED TO SUPPORT LUMINAIRE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
    ANY MENTION OF A SPECIFIC VOLTAGE ON THE ELECTRICAL DRAWINGS SHALL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE VOLTAGE PRIOR TO PURCHASING OR ROUGH-IN WORK.

14. DISTRIBUTION PANELS AND PANELS BOARDS

    ALL DISTRIBUTION PANELS AND PANEL BOARDS SHALL BE PROVIDED WITH TYPEWRITTEN DIRECTORIES. SEE PANEL SCHEDULES ON THE DRAWINGS AND SPECIFICATION FOR COMPLETE IDENTIFICATION AND LABELING REQUIREMENTS. ALL DISTRIBUTION PANELS AND PANEL BOARDS SHALL BE LABELED ON THE PANEL CABINET WITH THE PANEL NAME AND THE POWER SOURCE FEEDING THE PANEL AS PER THE ELECTRICAL ONE LINE. ALL PANELS AND PANEL BOARDS SHALL BE PROVIDED WITH HINGED DOOR WITH LOCK AND KEY.

15. SAFETY

    THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE VA'S EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK

16. EQUIPMENT CONNECTIONS

    PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS AND FOR ALL VA FURNISHED EQUIPMENT. PROVIDE A FLEXIBLE LIQUID TIGHT CONNECTION TO ALL VIBRATION PRODUCING EQUIPMENT.

17. TEMPORARY LIGHTING, POWER, FIRE, AND SAFETY

    PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED IN AREAS UNDERGOING WORK DURING CONSTRUCTION. FURNISH AND INSTALL ONE OSHA APPROVED PIGTAIL SOCKET WITH LED EQUIVALENT 150-WATT LAMP FOR EVERY 500 SQUARE FEET OF FLOOR SPACE AND A MINIMUM 1 PER ROOM. TEMPORARY LIGHTING SHALL BE LEFT IN PLACE UNTIL PERMANENT LIGHTING IS COMPLETELY OPERATIONAL.

    FURNISH AND INSTALL POWER OUTLETS TO A MINIMUM ONE FOR EVERY 2,000 SQUARE FEET OR PART THEREOF OF FLOOR AREA AND THESE SHALL BE 20 AMP, SINGLE PHASE RECEPTACLES FOR EITHER 110 VOLTS OR AS INDICATED ON THE DRAWINGS. PROVIDE ADDITIONAL OUTLETS AS NECESSARY. COORDINATE ADDITIONAL TEMPORARY POWER AND REQUIREMENTS WITH OTHER TRADES TO PROVIDE AN ADEQUATE INSTALLATION.

    COMPLY WITH NFPA 241 FOR SAFEGUARDING DURING CONSTRUCTION AND ALTERATION OPERATIONS. IN ADDITION, ANY OPENINGS IN FIRE RATED SEPARATIONS BETWEEN OCCUPIED AND UNOCCUPIED (OR OPERATIONAL AND NON-OPERATIONAL) AREAS SHALL BE SEALED AT THE END OF EACH WORK DAY WITH AN APPROPRIATE FIRE RATED ENCLOSURE OR SEALANT. DO NOT COMPROMISE EXISTING SECURITY OR FIRE ALARM SYSTEMS SERVING THE OCCUPIED OR OPERATIONAL AREAS.

    DURING CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN ELECTRICAL SERVICE TO THE BUILDING WITHOUT ANY POWER OUTAGES OR INTERRUPTION AT ALL TIMES. SHOULD IT BE NECESSARY TO INTERRUPT ANY ELECTRICAL SERVICE OR UTILITY, THE CONTRACTOR SHALL REQUIRED PERMISSION IN WRITING FROM THE COR FOR SUCH INTERRUPTION AT LEAST 2 WEEKS IN ADVANCE. ANY INTERRUPTION SHALL BE MADE WITH A MINIMUM AMOUNT OF DOWNTIME TO THE VA. ANY SHUT-DOWN TIME SHALL HAVE TO BE ON A PREMIUM TIME BASIS AND SUCH TIME TO BE INCLUDED IN THE CONTRACTOR'S BID.
    CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE, AND FEDERAL SAFETY LAWS (OSHA), AND AS RECOMMENDED IN THE 'MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION' AS ISSUED BY THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA, INC., 20TH AND E. STREETS, N.W. WASHINGTON, D.C.

18. POWER COORDINATION

    THE CONTRACTOR SHALL PERFORM ALL COORDINATION AND SCHEDULING OF LOCAL POWER OUTAGES REQUIRED WITH THE COR. ALL NEEDED POWER OUTAGES TO BE SCHEDULED WITH THE COR MINIMUM OF TWO WEEKS IN ADVANCE.

19. CABLING

    BRANCH CIRCUITS TO RECEPTACLES, LIGHTING AND MISC. SMALL LOADS (15 OR 20 AMP CIRCUITS), UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE 2 - #12, 1 - #12 GRD., 3/4" C. A THE COR WHICH WILL OUTLINE THE METHOD OF PROCEDURE FOR THE WORK. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 3 WEEKS NOTICE TO THE COR BEFORE WORKING ON ANY ENERGIZED ELECTRICAL SYSTEM. ADDITIONALLY, CONTRACTOR SHALL OBTAIN MEDICAL CENTER DIRECTOR'S APPROVAL. ALL POWER DISRUPTION SHALL OCCUR AT TIMES AND OF DURATIONS ACCEPTABLE TO THE COR. SEE WIRE SIZING TABLE ON THIS SHEET. 1
    WIRE SIZE #10 AWG AND SMALLER SHALL BE SOLID AND LARGER SHALL BE STRANDED.

    EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. ALL CONDUCTORS SHALL BE COPPER TYPE THWN / XHHW.

20. CABLING SIZES

    BRANCH CIRCUIT CABLE SIZING SHALL BE ADJUSTED BASED ON THE VALUES INDICATED IN THE WIRE SIZING TABLE PER THIS SHEET.

21. SPECIAL LUG REQUIREMENTS

    ANY CABLE WHICH TERMINATES DIRECTLY ON TO A BUS BAR SHALL BE 2 BOLT LONG BARREL TYPE WITH INSPECTION HOLES PRODUCED WITH NON FLASHING TYPE DYES AS MANUFACTURED BY THOMAS AND BETTS, OR EQUAL MINIMUM 10 TONS OF COMPRESSION, HEX CRIMP. THE USE OF HEAT SHRINK TUBING IS EXPLICITLY FORBIDDEN. THERE SHALL BE NO "SHINERS" AT THE LUGS.

22. RACEWAYS

    ALL WIRE SHALL BE INSTALLED IN THIN WALL (E.M.T.) CONDUIT UNLESS OTHERWISE NOTED. MINIMUM SIZE SHALL BE 3/4" EXCEPT FOR DROPS FOR DEVICES, SWITCH LEGS, TEMPERATURE CONTROL CONDUITS, WHERE INDICATED OR AS CALLED FOR ON DRAWINGS. ALL THINWALL FITTINGS SHALL BE OF THE STEEL COMPRESSION GLAND TYPE.
    ALL UNDERFLOOR, UNDERGROUND OR EXPOSED-TO-WEATHER CONDUIT SHALL BE HEAVYWALL GALVANIZED RIGID STEEL. (G.R.S.), MINIMUM 3/4".

    ALL CONDUIT FASTENERS, STRAPS, SUPPORTS ETC. MUST BE "BOLT-ON" GALVANIZED STEEL ON EXPOSED CONSTRUCTION AND IN WET AREAS. SNAP-ON BLACK METAL "CADDY" CLIPS IN METAL PARTITION WALLS AND ABOVE SUSPENDED CEILINGS WILL BE PERMITTED. ALL FASTENERS, STRAPS, CLIPS, ETC. SHALL BE UL LISTED FOR THEIR USE.

    SUPPORT CONDUIT WITH P1000 UNISTRUT OR APPROVED EQUAL WITH 3/8" THREADED ROD 8'-0" O.C. MAX.

    PROVIDE MYERS HUBS OR EQUAL FOR ALL CONDUIT TO ENCLOSURE CONNECTIONS.

    ALL CONDUIT RACEWAYS SHALL BE CONCEALED IN OR WITHIN: WALLS, CEILING CAVITY, ROOF CONSTRUCTION (WHERE APPROVED), SLAB, GRADE, ETC. UNLESS OTHERWISE NOTED. ANY RACEWAY THAT IS TO BE ROUTED EXPOSED SHALL BE APPROVED BY THE VACOR AND SUCCESSFULLY REVIEWED BY THE ARCHITECT/ENGINEER. PRIOR TO INSTALLATION. ALL CONDUIT SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL MEMBERS WITH 90° BENDS WHERE REQUIRED AND SHALL BE RACKED. PULL AND JUNCTION BOXES SHALL BE HELD TO A MINIMUM. CONTRACTOR SHALL INSTALL ALL WORK IN NEAT & WORK LIKE MANNER.

    GROUND ALL CONDUITS, MOTORS, AND EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ALL PROVISIONS WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. VA SPECIFICATION SECTION 26 05 26 "GROUNDING AND BONDING FOR ELECTRICAL SYSTEM".

    CONTRACTOR SHALL PROVIDE BOXES, JUNCTION BOXES, SPLICE BOXES AND FITTINGS WHERE NECESSARY OR REQUIRED BY THE NEC.

    ALL ELECTRICAL CONDUITS TO A MINIMUM OF 3/4". MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

    PROVIDE COLOR RED CONDUIT FOR FIRE ALARM. WHERE CORE DRILLING AND CUTTING OF FLOORS OR WALLS IS REQUIRED, SCAN THE AREAS PRIOR TO DRILLING. AVOID INTERFERENCE WITH EXISTING CONCEALED ELECTRICAL, PLUMBING INSTALLATIONS REINFORCING STEEL. REFINISH DAMAGED AND CUT SURFACES TO MATCH ADJACENT FINISHES.

    CONTRACTOR SHALL FIREPROOF ALL CONDUIT OPENINGS BETWEEN FLOORS AND ANY INTERSPACE FIRE SEPARATION BLOCK WALLS WITH AN COR APPROVED U.L. LISTED FIRE RETARDANT MATERIAL. AS SUCCESSFULLY REVIEWED BY ARCHITECT/ENGINEER.

23. LIGHTING

    ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

24. RECEPTACLES

    CONTRACTOR SHALL VERIFY ALL OUTLET MOUNTING ARRANGEMENTS, HEIGHTS AND LOCATIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, HEIGHT OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE SPECIFIC REQUIREMENT WITH THE EQUIPMENT FURNISHED OR THE OTHER TRADES WORKING IN THE SAME AREA. NO ADDITIONS TO THE CONTRACT SUM WILL BE PERMITTED FOR OUTLETS IN WRONG LOCATIONS, IN CONFLICT WITH OTHER WORK ETC. THE VA RESERVES THE RIGHT TO RELOCATE ANY DEVICE 10'-0" PRIOR TO ROUGH-IN WITHOUT ANY ADDITIONAL CHARGES BY THE CONTRACTOR.

    OUTLET BOXES MOUNTED BACK-TO-BACK IN THE SAME WALL ARE PROHIBITED. A MINIMUM 24" CENTER-TO-CENTER LATERAL SPACING SHALL BE MAINTAINED BETWEEN BOXES.

    ALL DUPLEX RECEPTACLES SHALL BE HOSPITAL GRADE NEMA 5-20R.

    ALL EMERGENCY POWER OUTLETS SHALL BE RED IN COLOR. IN ROOMS WITHOUT GENERAL ILLUMINATION ON EMERGENCY POWER, EMERGENCY RECEPTACLES SHALL BE OF THE SELF ILLUMINATED TYPE.

25. GUARANTEE

    ALL EQUIPMENT FURNISHED AND WORK PERFORMED UNDER THE CONTRACT DOCUMENTS SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD AS PER VA SPECIFICATION, UNLESS OTHERWISE NOTED. ANY FAILURE OF EQUIPMENT OR WORK DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE VA.

26. FINAL INSPECTION

    ALL THE ITEMS AND WORK SHALL BE TESTED FOR SAFE, PROPER OPERATIONS.

    UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL REVIEW AND CHECK THE ENTIRE PORTION OF WORK, CLEAN EQUIPMENT AND DEVICES, REMOVE SURPLUS MATERIALS AND RUBBISH FROM THE VA'S PROPERTY, LEAVING THE WORK IN NEAT AND CLEAN ORDER AND IN COMPLETE WORKING CONDITION. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY CARTON, DEBRIS, ETC., FOR EQUIPMENT INSTALLED BY THIS CONTRACTOR INCLUDING EQUIPMENT FURNISHED BY THE VA. THE ABOVE SHALL ALSO APPLY TO ALL EQUIPMENT FURNISHED BY OTHERS AND UNPACKED OR REMOVED FROM CARTON, BY THE CONTRACTOR.

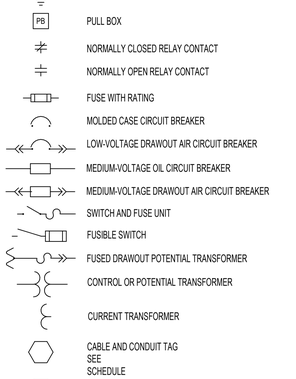
GENERAL NOTES - DEMOLITION

1. EXAMINATION
   A. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE AREAS UNDERWHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE VA IN WRITING OF ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL SATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
   B. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS FOR DEVICES SHOWN ON DRAWINGS.
   C. DEMOLITION DRAWINGS ARE BASED ON FIELD OBSERVATION AND EXISTING RECORD DRAWINGS. REPORT DISCREPANCIES TO COR BEFORE DISTURBING EXISTING INSTALLATION. CONTRACTOR SHALL COORDINATE WITH COR FOR ANY HIDDEN/UNFORESEEN WORK FOUND AFTER COMMENCEMENT OF WORK THAT NEEDS TO BE REWORKED/RELOCATED TO COMPLETE THE NEW WORK.
   D. COMMENCEMENT O

ELECTRICAL SYMBOLS - DIAGRAM

- INCOMING LINE
- GROUND
- DELTA CONNECTION
- WYE CONNECTION
- SURGE AND LIGHTNING ARRESTER
- POTHEAD
- STRESS CONE
- TRANSFORMER
- CONTACTOR
- EARTH GROUND
- PB — PULL BOX
- NORMALLY CLOSED RELAY CONTACT
- NORMALLY OPEN RELAY CONTACT
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- LOW-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- MEDIUM-VOLTAGE OIL CIRCUIT BREAKER
- MEDIUM-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- SWITCH AND FUSE UNIT
- FUSIBLE SWITCH
- FUSED DRAWOUT POTENTIAL TRANSFORMER
- CONTROL OR POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- CABLE AND CONDUIT TAG SEE SCHEDULE
- EQUIPMENT TAG SEE EQUIPMENT SCHEDULE
- ST — SHUNT TRIP
- A — AMMETER
- AS — AMMETER SELECTOR SWITCH
- V — VOLTMETER
- VS — VOLTMETER SELECTOR SWITCH
- M — UTILITY METER
- CM — OWNER METER
- KWH — KILOWATT HOUR METER
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- GF — GROUND FAULT
- CONTROL OR POTENTIAL TRANSFORMER

ELECTRICAL SYMBOL - HVAC POWER PLAN



ELECTRICAL SYMBOL - POWER PLAN

- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- TRANSFORMER, PLAN
- WYE CONNECTION
- EARTH GROUND
- J — POWER JUNCTION BOX
- A/V — DOUBLE GANG DEEP AUDIO/VISUAL JUNCTION BOX
- LADDER CABLE TRAY
- PB — PULL BOX
- WIREWAY
- REGULAR POWER
- LIFE SAFETY POWER
- CRITICAL POWER
- PANELBOARD
- RECEPTACLE, DUPLEX
- RECEPTACLE, DUPLEX MOUNTED AT 44"
- RECEPTACLE, DUPLEX ON CRITICAL POWER
- RECEPTACLE, DUPLEX MOUNTED AT 44" ON CRITICAL POWER
- GFCI — RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- GFCI — RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER MOUNTED AT 44"
- RECEPTACLE, QUADRAPLEX
- RECEPTACLE, QUADRAPLEX MOUNTED AT 44"
- RECEPTACLE, QUADRAPLEX ON CRITICAL POWER
- FLOOR RECEPTACLE, DUPLEX
- FLOOR RECEPTACLE, DUPLEX ON CRITICAL POWER
- FLOOR RECEPTACLE, QUADRAPLEX
- FLOOR RECEPTACLE, QUADRAPLEX ON CRITICAL POWER
- CEILING MOUNTED RECEPTACLE
- CEILING MOUNTED RECEPTACLE ON CRITICAL POWER
- L6-30R TWIST LOCK RECEPTACLE ON NORMAL POWER, 250V, TWO-POLE, 3W GROUNDED
- L6-30R TWIST LOCK RECEPTACLE ON CRITICAL POWER, 250V, TWO-POLE, 3W GROUNDED
- ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" AFF OR AS INDICATED.
- PP — AUTOMATIC DOOR OPERATOR PUSH PLATE
- TC — TIME CLOCK
- CONDUIT STUBBED DOWN
- CONDUIT STUBBED UP
- FLEXIBLE CONDUIT
- POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
- LIMIT OF DEMOLITION
- JUNCTION BOX WITH DISCONNECT SWITCH AND FLEXIBLE CONDUIT CONNECTION
- EQUIPMENT CONNECTION
- EMERGENCY POWER OFF PUSHBUTTON
- BELL
- B — BUZZER
- DOCK DOOR POSITION INDICATOR LIGHT
- T — THERMOSTAT, WALL MOUNTED PULL CORD
- H — HUMIDISTAT, WALL MOUNTED

MOTORS AND CONTROLS

- XX — SINGLE PHASE MOTOR (HP AS INDICATED)
- XX — THREE PHASE (HP AS INDICATED)
- 30A/20A — DISCONNECT SWITCH, FUSED (SWITCH/FUSE RATING)
- 30A — DISCONNECT SWITCH, UNFUSED (SWITCH RATING)
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- VFD — VARIABLE FREQUENCY DRIVE

ELECTRICAL SYMBOLS - LIGHTING PLAN

- $ — SWITCH
  - BLANK = SINGLE POLE
  - 3 = THREE-WAY
  - 4 = FOUR-WAY
  - K = KEY OPERATED
  - D = DIMMER
  - P = WITH PILOT LIGHT
  - LV= LOW VOLTAGE
  - TM = TIMER OPERATED
  - WP=WEATHER PROOF
  - X = EXPLOSION PROOF
  - T= THERMAL OVERLOAD PROTECTION
  - OS= OCCUPANCY SENSOR
- OS — SWITCH, OCCUPANCY SENSOR REFER TO FIXTURE SCHEDULE FOR TYPE
- PC — SWITCH, EXTERIOR PHOTO CELL FOR CONTROL OF EXTERIOR LIGHTING
- SWITCH, LAMP HOLDER POLE
- LIGHT FIXTURE RECESSED ROUND CEILING MOUNTED DOWNLIGHT
- LIGHT FIXTURE RECESSED SQUARE CEILING MOUNTED DOWNLIGHT
- LIGHT FIXTURE, RECESSED LED, 2'x4'
- LIGHT FIXTURE, RECESSED LED 1'x4'
- LIGHT FIXTURE, RECESSED LED, 2'x2'
- S — LIGHT FIXTURE, LED, 2'x4' LETTER INDICATES MOUNTING TYPE i.e. LETTER "S" INDICATES SURFACE MOUNTED.
- S — LIGHT FIXTURE, LED, 1'x4' LETTER INDICATES MOUNTING TYPE i.e. LETTER "S" INDICATES SURFACE MOUNTED.
- S — LIGHT FIXTURE, LED, 2'x2' LETTER INDICATES MOUNTING TYPE i.e. LETTER "S" INDICATES SURFACE MOUNTED.
- LIGHT FIXTURE, LED CRITICAL POWER
- LIGHT FIXTURE, LED LIFE SAFETY
- LIGHT TRACK WITH HEADS AS SHOWN
- LIGHT FIXTURE, STRIP/INDUSTRIAL LED; LETTER INDICATES TYPE.
- LIGHTING, UNDERCABINET LIGHT/COVE LIGHT
- EMERGENCY BATTERY BACK-UP EGRESS LIGHT
- DOUBLE FACED CEILING OR WALL MOUNTED EXIT SIGN. ARROW INDICATES DIRECTION
- SINGLE FACED CEILING OR WALL MOUNTED EXIT SIGN. ARROW INDICATES DIRECTION
- LIGHT POLE, ONE MAST ARM, ONE LUMINAIRE
- LIGHT POLE, TWO MAST ARMS, TWO LUMINAIRES
- LIGHT POLE, POST TOP MOUNT LUMINAIRE
- LIGHT POLE, ONE LUMINAIRE
- LIGHT POLE, TWO LUMINAIRES
- LIGHTING WALL PACK - EXTERIOR BUILDING
- LIGHTING LANDSCAPE WALL
- LIGHT FIXTURE, BOLLARD, ROUND
- LIGHT FIXTURE, BOLLARD, SQAURE
- LIGHT FIXTURE, DIRECTIONAL

ELECTRICAL ABBREVIATIONS

1PH	SINGLE-PHASE	EC	EMPTY CONDUIT	NEUT OR N	NEUTRAL
1P	SINGLE POLE	EG	EQUIPMENT GROUND	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
2/C	TWO-CONDUCTOR	EL	ELEVATION	NIC	NOT IN CONTRACT
3/C	THREE-CONDUCTOR	ELEC	ELECTRIC OR ELECTRICAL	NL	NIGHT LIGHT
3PH	THREE-PHASE	ELEV	ELEVATOR	NO	NORMALLY OPEN
4/C	FOUR-CONDUCTOR	EMCP	EMERGENCY MONITORING CONTROL PANEL	NS	NO SCALE
4W	FOUR-WIRE	EMER	EMERGENCY	NTS	NOT TO SCALE
		EMI	ELECTROMAGNETIC INTERFERENCE		
A/C UNIT	AIR CONDITIONING UNIT	EMT	ELECTRICAL METALLIC TUBING	OC	ON CENTER
A/E	ARCHITECT/ENGINEER	ENCL	ENCLOSURE	OD	OUTSIDE DIAMETER
AAP	ALARM ANNUNCIATOR PANEL	EPO	EMERGENCY POWER OFF	OL	OVERLOAD
AC	ALTERNATING CURRENT OR ARMORED CABLE	EPRF	EXPLOSION PROOF		
ACC	ACCESSIBLE	ESMT	EASEMENT	P	POLE
ADDL	ADDITIONAL	EWC	ELECTRIC WATER COOLER	PA	PUBLIC ADDRESS
ADJ	ADJACENT, ADJOINING	EWH	ELECTRIC WATER HEATER	PB	PANELBOARD, PULL BOX, OR PUSHBUTTON
ADO	AUTOMATIC DOOR OPENER	EXIST, EX	EXISTING	PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
AF	AMPERE FRAME OR AMP FUSE			PCB	POLYCHLORINATED BIPHENYL
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT	FA	FIRE ALARM	PEC	PHOTOELECTRIC CELL
		FAAP	FIRE ALARM ANNUNCIATOR PANEL	PED	PEDESTAL
AFF	ABOVE FINISHED FLOOR	FABL	FIRE ALARM BELL	PEND	PENDANT
AFG	ABOVE FINISHED GRADE	FABX	FIRE ALARM BOX	PF	POWER FACTOR
AH	AMPERE HOUR	FACP	FIRE ALARM CONTROL PANEL	PH	PHASE
AHJ	AUTHORITY HAVING JURISDICTION	FC	FOOTCANDLE	PNL	PANEL
AIC	AMPERE INTERRUPTING CAPACITY	FI	FILM ILLUMINATOR	POD	POWER OPERATED DAMPER
ALT	ALTERNATE	FIXT	FIXTURE	PT	POTENTIAL TRANSFORMER
AMB OR A	AMBIENT	FLA	FULL LOAD AMPS	PTRV	POWER TYPE ROOF VENTILATION
AMP	AMPERE	FLEX	FLEXIBLE METALLIC CONDUIT	PVC	POLYVINYL CHLORIDE (PLASTIC)
ARCH	ARCHITECT	FLT	FLOODLIGHT	PWR	POWER
ASC	AMPS SHORT CIRCUIT	FLUOR	FLUORESCENT		
AT	AMPERE TRIP	FLUOR FIX	FLUORESCENT FIXTURE	RCP	REFLECTED CEILING PLAN
ATS	AUTOMATIC TRANSFER SWITCH	FOUTT	TELEPHONE FLOOR OUTLET	REC	RECESSED
AUTO	AUTOMATIC	FP	FIRE PROTECTION	RECPT	RECEPTACLE
AV	AUDIO VISUAL	FT	FEET OR FOOT	RGS	RIGID GALVANIZED STEEL
		FU SW	FUSED SWITCH	RM	ROOM
BAT	BATTERY	FVNR	FULL VOLTAGE NON-REVERSING	RMS	ROOT MEAN SQUARE
BC	BARE COPPER	FVR	FULL VOLTAGE REVERSING	REQD	REQUIRED
BD	BOARD				
BFF	BELOW FINISH FLOOR	G OR GND	GROUND OR GENERATOR	SCC	SHORT CIRCUIT CAPACITY
BIL	BASIC INSULATION LEVEL	GB	GROUND BUSBAR	SES	SERVICE ENTRANCE SECTION
BLDG	BUILDING	GEN	GENERATOR	SD	SMOKE DETECTOR
BPIP	BOILER PLANT INSTRUMENTATION PANEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SF	SQUARE FOOT (FEET)
BRKR	BREAKER	GTB	GROUND TERMINAL BOX	SHT	SHEET
BYP	BY PASS			SI	INTERNATIONAL SYSTEM OF UNITS
		HID	HIGH INTENSITY DISCHARGE	SPEC	SPECIFICATION
C	CONDUIT	HOA	HAND-OFF-AUTOMATIC	SPST	SINGLE POLE, SINGLE THROW
CAB	CABINET	HP	HORSEPOWER	SURF	SURFACE
CALC	CALCULATE	HT	HEIGHT	SW	SWITCH
CAP	CAPACITY	HZ	HERTZ	SWBD	SWITCHBOARD
CAT	CATALOG			SWGR	SWITCHGEAR
CATV	COMMUNITY ANTENNA TELEVISION	IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA		
CCR	CONTROL CONTACTOR	IMC	INTERMEDIATE METAL CONDUIT	TC	TIME CLOCK
CCTV	CLOSED CIRCUIT TELEVISION	INCAND	INCANDESCENT	TEL	TELEPHONE
CB	CODE BLUE	IR	INFRARED	TP	TWISTED PAIR
cd	CANDELA	IWH	INSTANTANEOUS WATER HEATER	TPS	TWISTED PAIR SHIELDED
CD	CONSTRUCTION DOCUMENTS			TTB	TELEPHONE TERMINAL BOARD
CF	CONTRACTOR FURNISHED	J-BOX, JB	JUNCTION BOX	TV	TELEVISION
CFiCI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED			TYP	TYPICAL
CFiOI	CONTRACTOR FURNISHED/OWNER INSTALLED	kV	KILOVOLT		
CFE	CONTRACTOR FURNISHED EQUIPMENT	kVA	KILOVOLT AMPERE	UFD	UNDERFLOOR DUCT
CHW	CHILLED WATER	kVAH	KILOVOLT AMPERE PER HOUR	UGND	UNDERGROUND
CHWP	CHILLED WATER PUMP	kVAR	KILOVOLT AMPERE REACTIVE	UL	UNDERWRITERS LABORATORY
CKT	CIRCUIT	kW	KILOWATT	UON	UNLESS OTHERWISE NOTED
CKT BRKR	CIRCUIT BREAKER	kWH	KILOWATT HOUR	UPS	UNINTERRUPTIBLE POWER SUPPLY
CLF	CURRENT LIMITING FUSE	kWHM	KILOWATT HOUR METER	UTIL	UTILITY
CLG	CEILING				
CMU	CONCRETE MASONRY UNIT	LED	LIGHT EMITTING DIODE	V	VOLT
COAX	COAX CABLE	LF	LINEAR FEET (FOOT)	VA	VOLT AMPERE
COMM	COMMUNICATION	LM	LUMEN	VAR	VOLT AMPERE REACTIVE
COMPT	COMPARTMENT	LP	LIGHT POLE	VFD	VARIABLE FREQUENCY DRIVE
CONC	CONCRETE	LPS	LOW PRESSURE SODIUM	VOLT	VOLTAGE
CONT	CONTINUE	LRA	LOCKED ROTOR AMPS		
CONTR	CONTRACTOR	LTCP	LOCAL TEMPERATURE CONTROL PANEL	W	WATT
COORD	COORDINATE	LT	LIGHT	WH	WATER HEATER
CPT	CONTROL POWER TRANSFORMER	LTG	LIGHTING	WP	WEATHERPROOF
CRI	COLOR RENDERING INDEX	LTG PNL	LIGHTING PANEL		
CT	CURRENT TRANSFORMER	LTNG	LIGHTNING	XFER	TRANSFER
CTV	CABLE TELEVISION	LV	LOW VOLTAGE	XFMR	TRANSFORMER
CU	COPPER				
CU FT	CUBIC FEET	MATV	MASTER ANTENNA TELEVISION SYSTEM		
CUR	CURRENT	MAX	MAXIMUM		
		MC	METAL-CLAD		
DB	DECIBEL OR DIRECT BURIAL	MCA	MINIMUM CIRCUIT AMPS		
DC	DIRECT CURRENT	MCB	MAIN CIRCUIT BREAKER		
DCP	DIMMER CONTROL PANEL	MCC	MOTOR CONTROL CENTER		
DEG C	DEGREES CELSIUS	MDP	MAIN DISTRIBUTION PANEL		
DEG F	DEGREES FAHRENHEIT	MECH	MECHANICAL		
DEMO	DEMOLITION	MG	MOTOR GENERATOR		
DIAG	DIAGRAM	MH	MANHOLE		
DISC	DISCONNECT	MIN	MINIMUM		
DISTR	DISTRIBUTION	MOCP	MAXIMUM OVERCURRENT PROTECTION		
DISTR PNL	DISTRIBUTION PANEL	MLO	MAIN LUGS ONLY		
DMR SW	DIMMER SWITCH	MT	MOUNT		
DN	DOWN	MTD	MOUNTED		
DPDT	DOUBLE POLE, DOUBLE THROW	MTG	MOUNTING		
DPST	DOUBLE POLE, SINGLE THROW	MTS	MANUAL TRANSFER SWITCH		
DRSW	DOOR SWITCH	MV	MEDIUM VOLTAGE		
DS	DISCONNECT SWITCH	MVA	MEGAVOLT-AMPERE		
DWG	DRAWING	MW	MEGAWATT MICROWAVE		
		NA	NOT APPLICABLE		
		NAC	NOTIFICATION APPLIANCES CIRCUIT PANEL		
		NEC	NATIONAL ELECTRICAL CODE		
		NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION		

GENERAL NOTES

1. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.

ADDENDUM #1	**11/06/2026**
ISSUED FOR BID	**05/15/2026**
100% CONSTRUCTION DOCUMENTS	**03/16/2026**
95% CONSTRUCTION DOCUMENTS	**01/30/2026**
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35% SCHEMATIC DESIGN RESUBMITTAL	**06/30/2025**
Revisions:	**Date:**

CONSULTANT

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Bancroft Project No. 23-135

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - SYMBOLS AND ABBREVIATIONS

Phase: ISSUED FOR BID

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Project Number: 521-24-102

Building Number: #1

Approved: Project Director

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: PTP

Drawn: YY

Drawing Number: E002

VA FORM 08-6231



ELECTRICAL PHASING GENERAL NOTES

A. DEMOLISH ALL EXISTING BRANCH CIRCUITS SERVING THE 2K AREA THAT ARE ROUTED TO THE EXISTING PANELBOARDS LOCATED IN ROOM 2206.

B. PROVIDE A TEMPORARY 250A BUS, 208Y/120V, 42-CIRCUIT PANELBOARD WITH A 225A LSI MAIN CIRCUIT BREAKER AND 25KAIC RATING. INSTALL PANELBOARD AT THE LOCATION SHOWN. PROVIDE UNISTRUT SUPPORT FRAMING FOR PANELBOARD MOUNTING.

C. IDENTIFY WHICH OF THE EXISTING PANELBOARDS, C22C 1/2 OR L22C A/B, HAS THE FEWEST REMAINING CONNECTED BRANCH CIRCUITS FOLLOWING DEMOLITION OF THE 2K AREA. FIELD VERIFY THE EXISTING FEEDER, AND SPLICE AND EXTEND IT FROM THE SELECTED PANELBOARD TO THE TEMPORARY PANELBOARD. PERFORM THIS WORK DURING OFF-HOURS.

D. TRANSFER ALL REMAINING BRANCH CIRCUITS SERVING AREA 2B FROM THE EXISTING PANELBOARDS C22C 1/2 AND L22C A/B TO THE TEMPORARY PANELBOARD AND EXISTING PANELBOARD E22C, AS REQUIRED. SPLICE AND EXTEND EXISTING BRANCH-CIRCUIT CONDUCTORS AS NECESSARY. PROVIDE NEW BRANCH-CIRCUIT CONDUCTORS AND CONDUIT TO MATCH THE EXISTING INSTALLATION. PERFORM THIS WORK DURING OFF-HOURS.

E. DEMOLISH EXISTING PANELBOARDS L22C A/B AND C22C 1/2 AFTER COMPLETION OF BRANCH-CIRCUIT TRANSFERS. PREPARE THE EXISTING PANELBOARD LOCATIONS AND ASSOCIATED INFRASTRUCTURE FOR INSTALLATION OF THE NEW PANELBOARDS AS SHOWN ON DRAWING EP102A.

F. PROVIDE AND INSTALL ALL NEW PANELBOARDS, INCLUDING PANELBOARD PPHT1A, AS PART OF THE DEMOLITION AND RECONSTRUCTION OF AREA 2K. ROUTE THE PPHT1A FEEDER CONDUIT AND CONDUCTORS AS SHOWN ON REVISED DRAWING EP102B. (ADDENDUM NO. 1)

UUPON COMPLETION OF THE PERMANENT ELECTRICAL INSTALLATION, REMOVE THE TEMPORARY PANELBOARD AND ASSOCIATED UNISTRUT SUPPORT FRAMING. PROVIDE AN UPDATED, TYPED PANEL DIRECTORY FOR EXISTING PANELBOARD E22C.

ELECTRICAL PHASING LEGEND

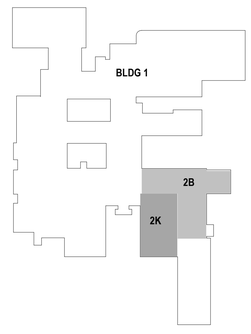
PHASING I CONSTRUCTION

PHASING II CONSTRUCTION

N

1 **ELECTRICAL - PHASING PLAN - SECOND FLOOR - 2K, 2B AREAS**

1/8" = 1'-0"



KEYPLAN

ADDENDUM #1 ⚠1	11/06/2026
Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - PHASING PLAN - SECOND FLOOR - 2K, 2B AREA	Phase: ISSUED FOR BID	Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY	Project Number: 521-24-102
Approved: Project Director		Location: BIRMINGHAM VAMC	Building Number: #1
		Issue Date: 11/06/2026 / Checked: PTP / Drawn: YY	Drawing Number: EP001

VA FORM 08-6231



N

1 ELECTRICAL - POWER DEMOLITION PLAN - SECOND FLOOR - 2K, 2B AREAS

1/8" = 1'-0"

0 4' 8' 16'

ELECTRICAL DEMOLITION GENERAL NOTES

A. ALL ELECTRICAL DEVICES SHOWN WITH DARK DASH LINES SHALL BE REMOVED AND DEMOLISHED. UNLESS OTHERWISE NOTED REMOVE AND DEMOLISH ALL EXISTING CONDUIT AND CABLE BACK TO SOURCE PANEL FOR ALL DEMOLISHED DEVICES AND EQUIPMENTS. CONTRACTOR SHALL PERFORMED OSHA MANDATED LOCK OUT TAGOUT TO DISCONTINUE ALL SOURCE OF ENERGY SUPPLY.

B. UNLESS OTHERWISE NOTED ALL ELECTRICAL DEVICES SHOWN. WITH SOLID LIGHT LINES SCHEDULE TO REMAIN.

C. ALL BRANCH CIRCUIT WIRING AND LOW VOLTAGE WIRING (POWER, LIGHTING, SECURITY, PUBLIC ANNOUNCEMENT, TELECOMMUNICATION/DATA, NURSE CALL, AND PHYSICAL ACCESS CONTROL SYSTEM, ETC.) TO ALL DEMOLISHED DEVICES OR ABANDONED IN PLACE WITHIN THE PROJECT SCOPE AREAS SHALL BE DISCONNECTED AT THE SOURCE PANELS AND REMOVED COMPLETELY BACK TO SOURCE/ASSOCIATED PANELS BY CORRESPONDING CONTRACTOR. EMPTY CONDUITS TO BE REMOVED BACK TO SOURCE PANELS. NO EXISTING JUNCTIONS OR CONDUIT SHALL BE BURIED IN NEW WALLS.

D. IT IS MANDATORY THAT THE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING CONSTRUCTION. SERVICES TO EXISTING BUILDING SHALL BE KEPT ON CONTINUOUS OPERATION INCLUDING POWER, LIGHTING, TELEPHONE, ETC. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH PROJECT CONSTRUCTION SHALL BE HELD TO A MINIMUM AND ARRANGED WITH THE VA COR THROUGH THE GENERAL CONTRACTOR TWO (2) WEEKS IN ADVANCE. TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.

E. COORDINATE WITH MECHANICAL CONTRACTOR AND REMOVE AND DEMO ELECTRICAL WIRING AND CONDUIT BACK TO SOURCE PANEL FOR ANY MECHANICAL EQUIPMENT IS BEING DEMOLISHED AS A PART OF PROJECT SCOPE.

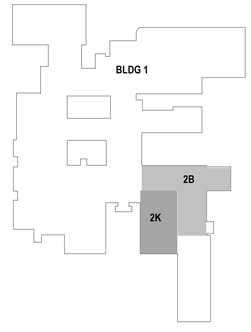
ELECTRICAL DEMOLITION KEY NOTES

1. CONTRACTOR SHALL FIELD VERIFY ANY EXISTING LOADS THAT ARE CONNECTED TO EXISTING PANELS THAT ARE BEING REPLACE AS NEW. PROVIDE TEMPORARY POWER AS NECESSARY, AND SPLICE AND EXTEND EXISTING CIRCUIT WITH THE CABLE/CONDUIT SIZE TO MATCH EXISTING FROM NEW PANEL.
2. EXISTING GROUND BUSBAR TO REMAIN.
3. BEFORE START OF THE DEMO WORK, CONTRACTOR SHALL PREPARE THIS ROOM AS SWING SPACE FOR DOCTOR OFFICE. PROVIDE TWO QUAD OUTLETS AND ONE 2X4 CEILING LIGHT AND PROVIDE LINE VOLTAGE POWER FROM 2216 ELECTRICAL ROOM PANEL.

ELECTRICAL DEMOLITION LEGEND

ITEMS WITH DARK DASH LINE INDICATES TO BE DEMOLISHED.

ITEMS WITH LIGHT SOLID LINE INDICATES SCHEDULE TO REMAIN.



KEYPLAN

ADDENDUM #1 ⚠1	11/06/2026
ISSUED FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	03/16/2026
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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - POWER DEMOLITION PLAN - SECOND FLOOR - 2K, 2B AREA

Phase: ISSUED FOR BID

Approved: Project Director

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026 | Checked: PTP | Drawn: YY

Project Number: 521-24-102

Building Number: #1

Drawing Number: EPD102

VA FORM 08-6231

ELECTRICAL GENERAL NOTES

A. FOR PANEL C22C-A/B, THE AS -BUILT DRAWINGS INDICATE THAT BRANCH CIRCUITS 16, 18, AND 20 ARE CONNECTED TO EXISTING LOADS. CONTRACTOR SHALL FIELD VERIFY THESE CONNECTIONS AND PROVIDE TEMPORARY POWER AS REQUIRED TO MAINTAIN SERVICE CONTINUITY. COORDINATE WITH THE NEW WORK DRAWINGS AND RECONNECT THE AFFECTED CIRCUITS TO THE NEW PANEL.

[#] ELECTRICAL KEY NOTES

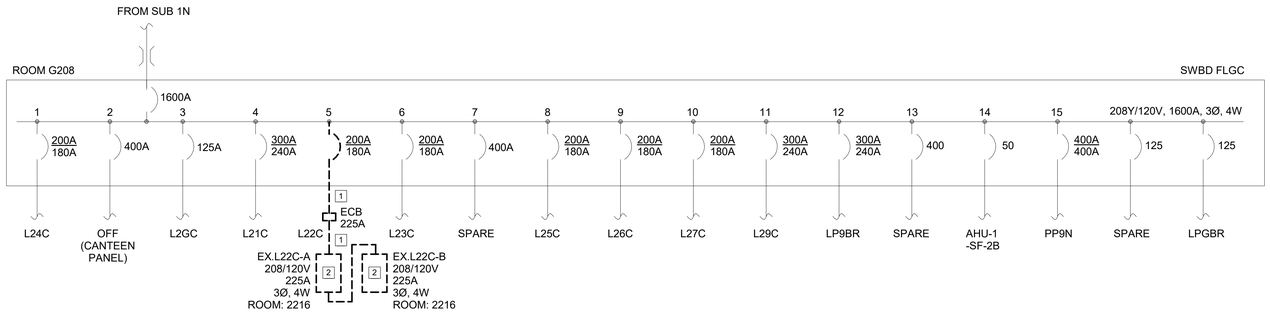
1. CONTRACTOR SHALL REMOVE AND DEMOLISH EXISTING CABLE AND LEAVE THE EXISTING CONDUIT IN PLACE. NEW CABLE SHALL BE ADDED IN EXISTING CONDUIT. REFER TO E500 FOR NEW CABLE SIZE REQUIREMENTS.

2. CONTRACTOR SHALL RECONNECT ALL EXISTING LOADS THAT ARE TO REMAIN TO NEW PANELS. PROVIDE NEW WIRING AND CONDUIT SIZED TO MATCH THE EXISTING INSTALLATION.

ELECTRICAL DEMOLITION LEGEND

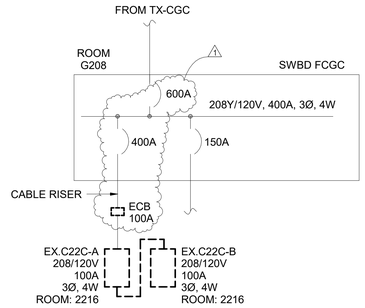
- - - - - - - - ITEMS WITH DARK DASH LINE INDICATES TO BE DEMOLISHED.

———— ITEMS WITH LIGHT SOLID LINE INDICATES ARE EXISTING TO REMAIN.



1 ELECTRICAL - SINGLE LINE DIAGRAM - NORMAL POWER - DEMOLITION

NOT TO SCALE



2 ELECTRICAL - SINGLE LINE DIAGRAM - CRITICAL POWER - DEMOLITION

NOT TO SCALE

ADDENDUM #1 ⚠1	11/06/2026
ISSUED FOR BID	05/15/2026
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VA CONTRACT NO.36C24724C0036
Bancroft Project No. 23-135

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - SINGLE LINE DIAGRAM - DEMOLITION

Approved: Project Director

Phase: ISSUED FOR BID

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026 | Checked: PTP | Drawn: YY

Project Number: 521-24-102

Building Number: #1

Drawing Number: ED500

VA FORM 08-6231

ELECTRICAL GENERAL NOTES

A. CONTRACTOR SHALL PROVIDE LABELS ON EACH RECEPTACLE FACEPLATE INDICATING SERVICE PANEL AND CIRCUIT NUMBER.

B. COORDINATE AND CO-LOCATE WALL MOUNTED RECEPTACLES LOCATION WITH VOICE / DATA OUTLETS SHOWN ON T SERIES DRAWING. OUTLETS BOXES MOUNTED BACK-TO-BACK OUTLET BOXES INSTALLED WITHIN THE SAME WALL ARE PROHIBITED.

C. PROVIDE GFCI OUTLET WITHIN A 6-FOOT RADIUS OF THE OUTSIDE EDGE OF ALL SINK AND WATER OUTLETS.

D. REFER TO WIRE AND CONDUIT SIZE TABLE ON DRAWING E001 AND PROVIDE BRANCH WIRING AND CONDUIT ACCORDINGLY.

E. ALL THE RECEPTACLES SHALL BE HOSPITAL GRADE. ALL EMERGENCY/CRITICAL POWER RECEPTACLES SHALL BE RED IN COLOR. IN PATIENT ROOMS WITHOUT GENERAL ILLUMINATION CONNECTED TO EMERGENCY POWER, EMERGENCY RECEPTACLES SHALL BE OF THE SELF ILLUMINATED TYPE.

F. ALL THE EMERGENCY QUADRUPLEX RECEPTACLES SERVING COMPUTER EQUIPMENT SHALL BE MOUNTED AT 44" HEIGHT IN THE EXAM ROOMS, OPT IMAGING ROOMS AND OPT TECH ROOMS .

(#) ELECTRICAL KEY NOTES

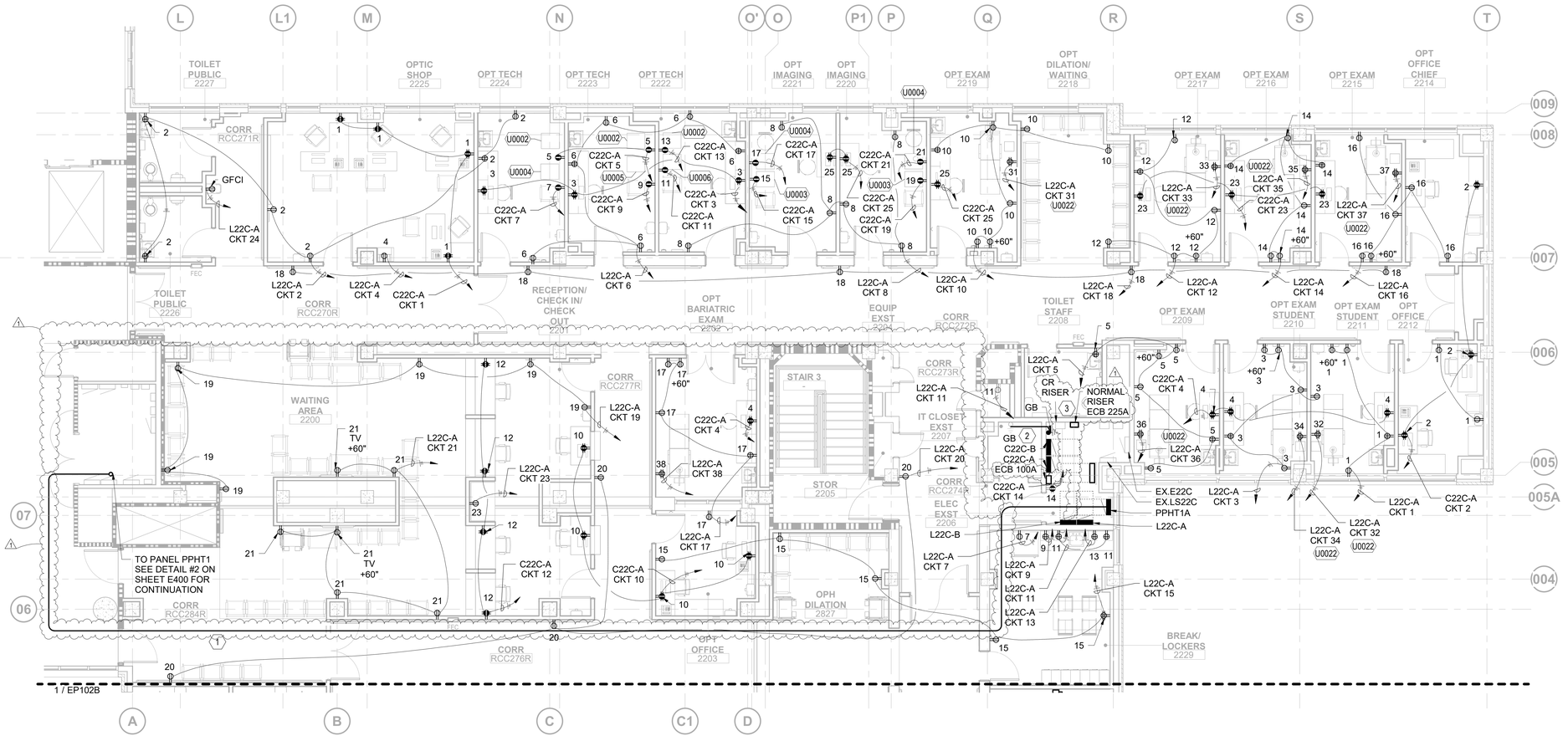
1. REFER TO SHEET E400 FOR SOURCE PANEL LOCATION AND PROVIDE NEW CABLE AND CONDUIT SIZE AS SHOWN ON SHEET E500.
2. CONNECT EXISTING BUSBAR TO NEW BUSBAR USING #4/O GREEN INSULATED STRANDED COPPER CONDUCTOR IN 3/4"C.
3. PROVIDE 18"X4"X1/4" THICK COPPER GROUND BUSBAR ON 2" INSULATED BUSHING. BOND ALL THE PANELS (EXISTING AND NEW) AND ITS GROUND BUS TO BUSBAR WITH #4 GREEN INSULATED COPPER CONDUCTOR IN 3/4". PROVIDE EARTHING CONNECTION BETWEEN BUSBARS AND BUILDING STEEL.

ELECTRICAL LEGEND

FIRE RATED WALL

ITEMS WITH LIGHT SOLID LINE INDICATES DEVICES THAT ARE EXISTING TO REMAIN.

ITEMS WITH DARK SOLID LINE INDICATES THAT CONTRACTOR SHALL FURNISH AND INSTALL NEW AS SPECIFIED.

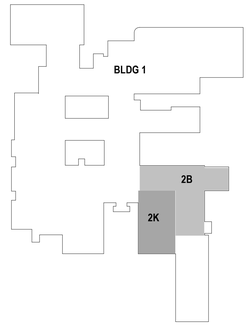


N

1 **ELECTRICAL - POWER PLAN - SECOND FLOOR - 2K, 2B AREAS - ZONE 1**

3/16" = 1'-0"

0 8' 16' 24'



KEYPLAN

ADDENDUM #1 ⚠1	11/06/2026
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VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - POWER PLAN SECOND FLOOR - 2K, 2B AREAS - ZONE 1	Phase: ISSUED FOR BID	Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY	Project Number: 521-24-102
Approved: Project Director		Location: BIRMINGHAM VAMC	Building Number: #1
		Issue Date: 11/06/2026 / Checked: PTP / Drawn: YY	Drawing Number: EP102A

VA FORM 08-6231

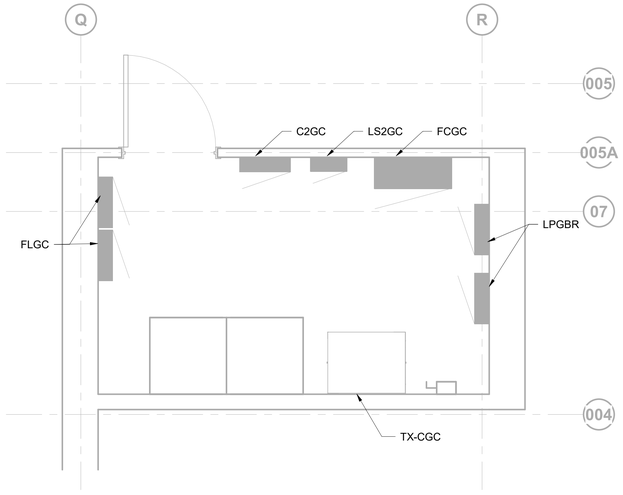
ELECTRICAL GENERAL NOTES

A. ALL THE PANEL SHOWN ON THIS DRAWING ARE EXISTING SHALL REMAIN IN PLACE. COORDINATE WITH SINGLE LINE DIAGRAM E500, AND PROVIDE FIELD ROUTED NEW CONDUIT FROM THESE LOCATIONS TO THE NEW PANEL(S) AS INDICATED. ANY FIELD ROUTING SHALL BE VERIFIED AND COORDINATED PRIOR TO INSTALLATION.

ELECTRICAL LEGEND

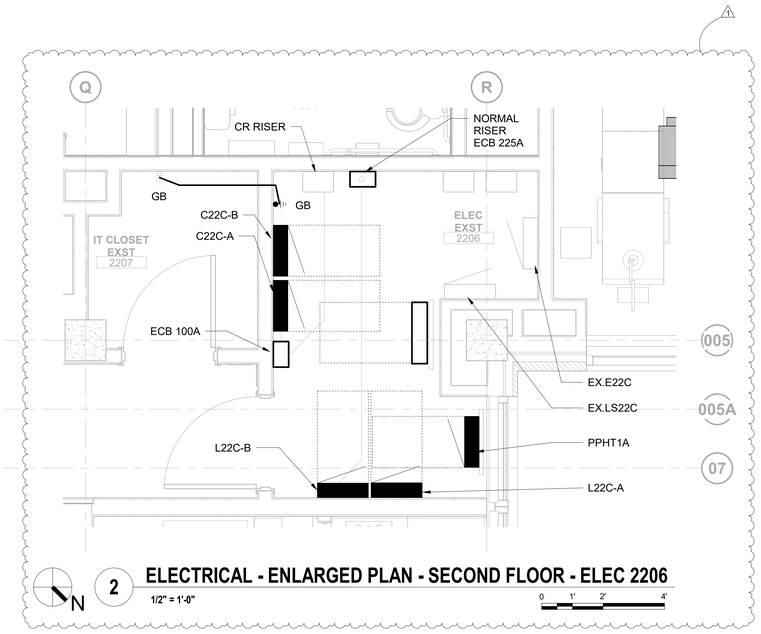
ITEMS WITH LIGHT SOLID LINE INDICATES DEVICES THAT ARE EXISTING TO REMAIN.

ITEMS WITH DARK SOLID LINE INDICATES THAT CONTRACTOR SHALL FURNISH AND INSTALL NEW AS SPECIFIED.



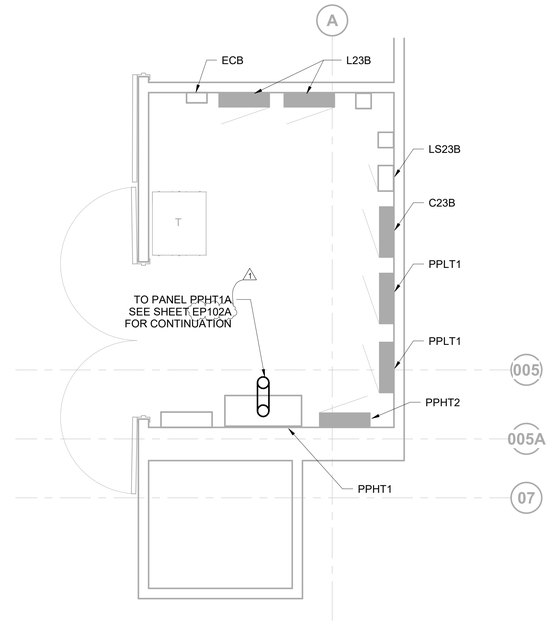
1 ELECTRICAL - ENLARGED PLAN - GROUND FLOOR - ELEC G208

1/2" = 1'-0"



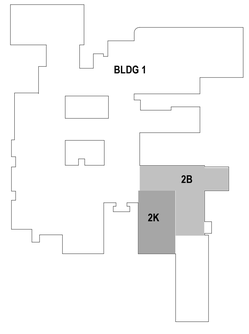
2 ELECTRICAL - ENLARGED PLAN - SECOND FLOOR - ELEC 2206

1/2" = 1'-0"



3 ELECTRICAL - ENLARGED PLAN - THIRD FLOOR - ELEC 3301

1/2" = 1'-0"



KEYPLAN

ADDENDUM #1 ⚠1	11/06/2026
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VA CONTRACT NO.36C24724C0036
Bancroft Project No. 23-135

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - ENLARGED PLAN

Phase: ISSUED FOR BID

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Project Number: 521-24-102

Building Number: #1

Approved: Project Director

Location: BIRMINGHAM VAMC

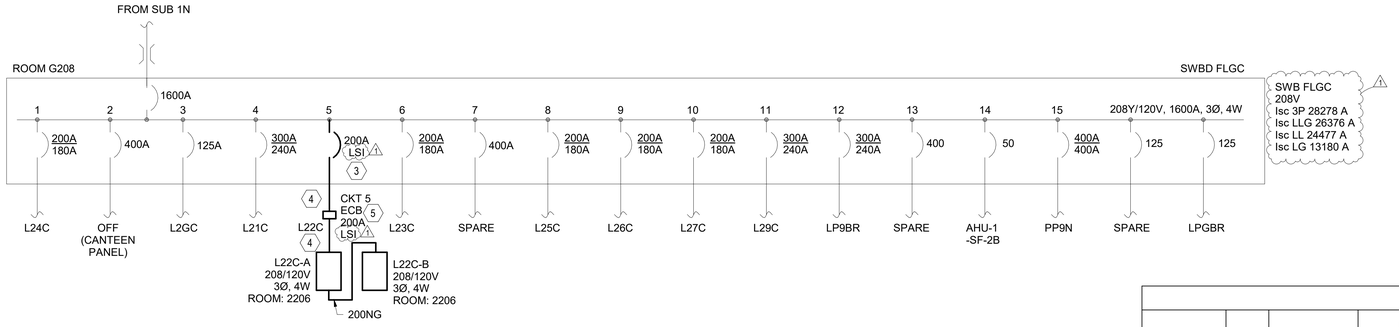
Issue Date: 11/06/2026

Checked: Checker

Drawn: Author

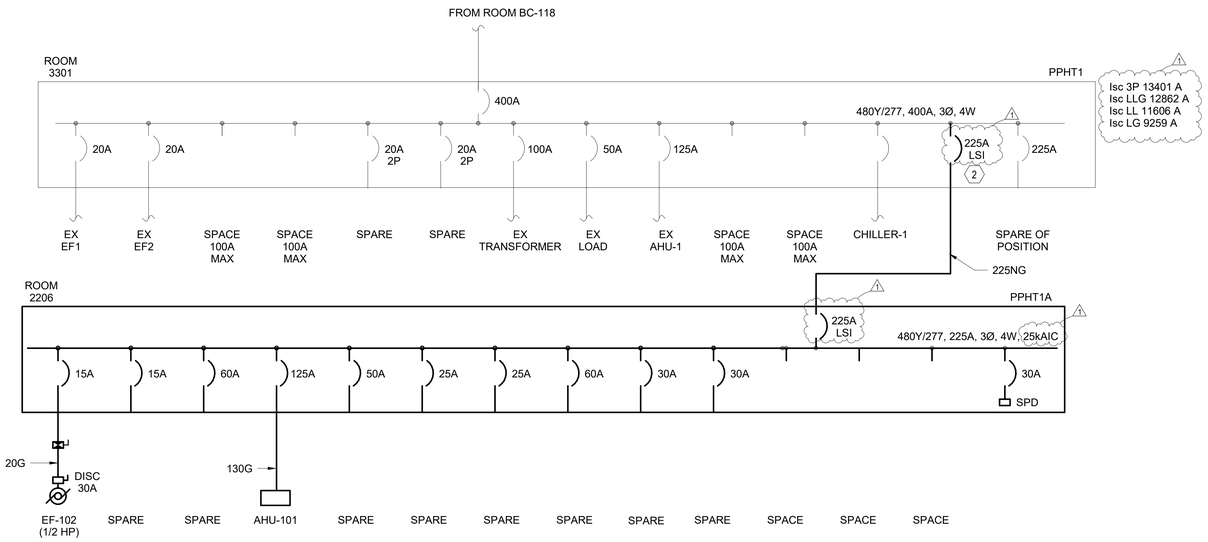
Drawing Number: E400

VA FORM 08-6231



1 ELECTRICAL - SINGLE LINE DIAGRAM - NORMAL POWER

NOT TO SCALE



2 ELECTRICAL - SINGLE LINE DIAGRAM - NORMAL 480V

NOT TO SCALE

ELECTRICAL GENERAL NOTES

A. CONTRACTOR SHALL PERFORM A COORDINATION STUDY FOR ALL NEW CIRCUIT BREAKERS. PROVIDE NEW CIRCUIT BREAKERS AS REQUIRED BY THE RESULTS OF THE STUDY. ADDITIONALLY, THE CONTRACTOR SHALL PERFORM ARC FLASH AND SHORT-CIRCUIT STUDIES AND PROVIDE ARC FLASH WARNING LABELS ON ALL EQUIPMENT AS REQUIRED BY THE LATEST NFPA 70E. LABELS SHALL INCLUDE THE MAXIMUM AVAILABLE FAULT CURRENT WITH THE DATE THE FAULT CURRENT STUDY WAS PERFORMED, IN ACCORDANCE WITH NEC REQUIREMENTS.

B. PROVIDE A CONTINUOUS INSULATED #6 AWG COPPER EQUIPMENT GROUNDING CONDUCTOR IN 3/4" INCH CONDUIT. BOND THE EQUIPMENT GROUNDING BUSBARS OF THE NORMAL AND ESSENTIAL BRANCH PANELBOARDS (LS, CR, AND EQ) TOGETHER IN ACCORDANCE WITH NEC REQUIREMENTS. FIELD MARK THE CONDUIT BY SPRAY PAINTING IT GREEN FOR IDENTIFICATION.

C. PROVIDE INTEGRAL SURGE PROTECTIVE DEVICES (SPDS) FOR ALL NEW PANELBOARDS.

ELECTRICAL KEY NOTES

1. CONTRACTOR TO REPLACE EXISTING RISER TAP BREAKER TO LSI TYPE WITH SAME RATING.
2. CONTRACTOR SHALL PROVIDE SIEMENS FXD6 TYPE CIRCUIT BREAKER.
3. CONTRACTOR SHALL PROVIDE NEW 200A RATED CIRCUIT BREAKER TO MATCH EXISTING TYPE. ALTERNATIVELY, PROVIDE NEW TRIP SENSOR TO MATCH EXISTING TYPE AND SET IT TO 200A (1.0X=200A).
4. CONTRACTOR SHALL REMOVE AND DEMOLISH EXISTING CABLE AND PROVIDE NEW CABLE SIZE 200NG AND PULL THROUGH EXISTING CONDUIT.
5. CONTRACTOR SHALL PROVIDE NEW 200A RATED ECB.

ELECTRICAL LEGEND

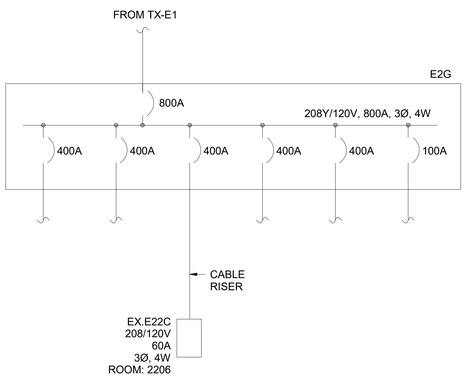
ITEMS WITH LIGHT SOLID LINE INDICATES DEVICES THAT ARE EXISTING TO REMAIN.

ITEMS WITH DARK SOLID LINE INDICATES THAT CONTRACTOR SHALL FURNISH AND INSTALL NEW AS SPECIFIED.

COPPER FEEDER SCHEDULE

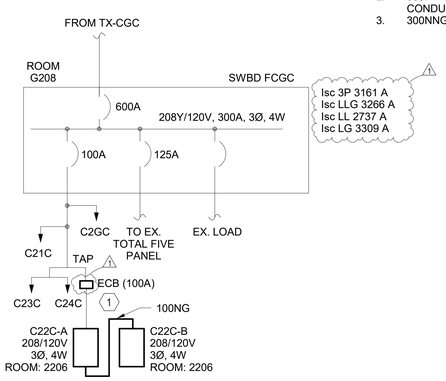
FEEDER DESIGNATION	No. OF SETS	PHASE CONDUCTOR (PER SET)	N NEUTRAL CONDUCTOR (PER SET)	G GROUND CONDUCTOR (PER SET)	SG SYSTEM BONDING JUMPER (PER SET)	I ISOLATED GROUND CONDUCTOR (PER SET)	CONDUIT SIZE - CONDUIT TYPES EMT, FMC, LFMC, IMC, RMC, SCH 40 PVC: 3 PHASE NEUTRAL & GROUND 'NG', 'NSG' 'PG','PSG' (PER SET)	3 PHASE & GROUND 'G' (PER SET)	3 PHASE NEUTRAL, GROUND & ISOLATED GROUND 'NGI',NSGI' (PER SET)
15	1	3 #12	1 #12	1 #12	1 #8	1 #12	3/4"	3/4"	3/4"
20	1	3 #12	1 #12	1 #12	1 #8	1 #12	3/4"	3/4"	3/4"
30	1	3 #10	1 #10	1 #10	1 #8	1 #10	3/4"	3/4"	3/4"
40/50	1	3 #8	1 #8	1 #10	1 #8	1 #10	3/4"	3/4"	1"
60	1	3 #6	1 #6	1 #10	1 #8	1 #10	1"	3/4"	1"
70/80	1	3 #4	1 #4	1 #8	1 #8	1 #8	1 1/4"	1"	1 1/4"
100	1	3 #2	1 #2	1 #8	1 #8	1 #8	1 1/4"	1 1/4"	1 1/2"
115	1	3 #2	1 #2	1 #6	1 #8	1 #6	1 1/4"	1 1/4"	1 1/2"
130	1	3 #1	1 #1	1 #6	1 #6	1 #6	1 1/2"	1 1/2"	1 1/2"
150	1	3 #1/0	1 #1/0	1 #6	1 #6	1 #6	2"	1 1/2"	2"
175	1	3 #2/0	1 #2/0	1 #6	1 #4	1 #6	2"	1 1/2"	2"
200	1	3 #3/0	1 #3/0	1 #6	1 #4	1 #6	2"	2"	2"
225	1	3 #4/0	1 #4/0	1 #4	1 #2	1 #4	2 1/2"	2"	2 1/2"
250	1	3 #250	1 #250	1 #4	1 #2	1 #4	2 1/2"	2"	2 1/2"
300	1	3 #350	1 #350	1 #4	1 #2	1 #4	3"	2 1/2"	3"
350	1	3 #500	1 #500	1 #3	1 #1/0	1 #3	4"	3"	4"
400	2	3 #3/0	1 #3/0	1 #3	1 #1/0	1 #3	2"	2"	2 1/2"
460	2	3 #4/0	1 #4/0	1 #2	1 #1/0	1 #2	2 1/2"	2"	2 1/2"
500	2	3 #250	1 #250	1 #2	1 #1/0	1 #2	2 1/2"	2 1/2"	3"
600	2	3 #350	1 #350	1 #1	1 #2/0	-	3"	2 1/2"	-

EXAMPLES:
1. 150NG = INDICATES 1 SET OF 4# 1/0 + 1# 6 GROUND CONDUCTOR PER SET.
2. 500P = INDICATES 2 SETS OF 3 # 250KCMIL AND 1 # 1/0 PARTIAL NEUTRAL CONDUCTOR PER SET.
3. 300NNG = INDICATES 5 # 350KCMIL AND 1 # 4 GROUND CONDUCTOR.



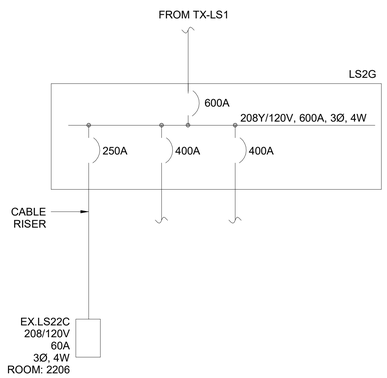
3 ELECTRICAL - EXISTING SINGLE LINE DIAGRAM - EQUIPMENT POWER

NOT TO SCALE



4 ELECTRICAL - SINGLE LINE DIAGRAM - CRITICAL POWER

NOT TO SCALE



5 ELECTRICAL - EXISTING SINGLE LINE DIAGRAM - LIFE SAFETY POWER

NOT TO SCALE

ADDENDUM #1	11/06/2026
ISSUED FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	03/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
65% DESIGN DEVELOPMENT SUBMITTAL	09/08/2025
Revisions:	Date:

CONSULTANT

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Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - SINGLE LINE DIAGRAM

Phase: ISSUED FOR BID

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Project Number: 521-24-102

Building Number: #1

Approved: Project Director

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: Checker

Drawn: Author

Drawing Number: E500

VA FORM 08-6231

ELECTRICAL GENERAL NOTES

PANEL C22C-A CKT 16, 18, AND 20, PANEL E22C CKT1 AND 3, AND PANEL LS22C CKT 1 ARE SHOWN AS EXISTING LOADS AS PER EXISTING PANEL DIRECTORY. CONTRACTOR SHALL FIELD VERIFY THE SAME AND RECONNECT AS SHOWN. SPLICE AND EXTEND EXISTING WIRING AS NECESSARY.

PANELBOARD - C22C-A — CB OPT: ST - SHUNT TRIP; AF - ARC FAULT CIRCUIT INTERRUPTER; GF - GROUND FAULT; FR - 100% RATED; L - LOCKABLE; EP - EQUIPMENT GROUND FAULT (30mA) — 22kA AIC RATING — SPECIAL...

VOLTAGE : 120/208 VOLTS 3 PHASE, 4 WIRE
BUS RATING : 100 AMPS
MAIN : 100A MCB LSI
BRANCHTYPE: CRITICAL BRANCH
LOCATION: ROOM 2206

LOAD TYPE	LOAD (VA)	CKT	LOAD SERVED	CB AMP/P	COMB PT	PHASE A	PHASE B	PHASE C	COMB PT	CB AMP/P	LOAD SERVED	CKT	LOAD (VA)	LOAD TYPE
RECEPTACLE	1600	1	COMPU RM 2204	20/1		A				20/1	COMPU RM 2212,14	2	1200	RECEPTACLE
RECEPTACLE	1200	3	COMPU RM 2205,06,07	20/1			B			20/1	COMPU RM 2202,09,10,11	4	1600	RECEPTACLE
RECEPTACLE	960	5	#U0002 @ 2 RM 2224,23	20/1				C		20/2	EX.HVAC RM 2714A	6	500	MOTOR
RECEPTACLE	1400	7	#U0004 RM 2224	20/1		A						8	500	MOTOR
RECEPTACLE	100	9	#U0005 RM 2223	20/1			B			20/1	COMPU RM 2201,03	10	1600	RECEPTACLE
RECEPTACLE	100	11	#U0006 RM 2222	20/1				C		20/1	COMPU RM 2201	12	1600	RECEPTACLE
RECEPTACLE	480	13	#U0002 RM 2222	20/1		A				20/1	REPCT RM 2206	14	360	RECEPTACLE
RECEPTACLE	960	15	#U0003 RM 2221	20/1			B			20/1	EX.OUTSIDE LIGHT-N	16	200	LIGHTING
RECEPTACLE	1400	17	#U0004 RM 2221	20/1				C		20/1	SPARE	18		
RECEPTACLE	960	19	#U0003 RM 2220	20/1		A				20/1	SPARE	20		
RECEPTACLE	1400	21	#U0004 RM 2220	20/1			B			20/1	SPARE	22		
RECEPTACLE	1200	23	COMPU RM 2215,16,17	20/1				C		20/1	SPARE	24		
RECEPTACLE	1200	25	COMPU RM 2219,20,21	20/1		A				20/1	SPARE	26		
		27	SPARE	20/1			B				SPACE	28		
		29	SPARE	20/1				C			SPACE	30		
		31	SPARE	20/1		A					SPACE	32		
		33	SPARE	20/1			B				SPACE	34		
		35	SPARE	20/1				C			SPACE	36		
		37	SPACE			A					SPACE	38		
		39	SPACE				B				SPACE	40		
		41	SPACE					C			SPACE	42		

EXISTING... PHASE A PHASE B PHASE C (VA)
LOAD X 125%

PANEL CALCULATIONS:

LOAD TYPE	LOAD (VA)	DEMAND FACTOR	DEMAND...	
RECEPTACLE	39840	PER NEC ARTICLE 220.44	24920	VA
LIGHTING	200	125%	250	VA
MOTOR	1000	100%	1000	VA
HEAT	0	100%	0	VA
MISC	0	100%	0	VA
0 KITCHEN	0	100%	0	VA
0 ELEVATORS	0	100%	0	VA
X-RAY	0	PER NEC ARTICLE 517.73(2)	0	VA
HOTEL UNIT	0	PER NEC ARTICLE 220.42	0	VA
0 UNIT PANELS	0	100%	0	VA
25% OF LARGEST MOTOR			250	VA
HOTEL SQFT		TOTAL HOTEL SQFT	0	

FEED THROUGH PANEL — LOAD (kVA)
PANELBOARD - C22C-B — 21

SUB FEED LOADS AMP/P LOAD.. LOAD TYPE

LOAD SUMMARY

Phase Loading		
Phase A	16	kVA
Phase B	12	kVA
Phase C	13	kVA
Total Connected Load	41..	kVA
Total Demand Load	26..	kVA
Line to Line Voltage	208..	VOLTS
Spare Capacity	20%	
Panel Amps	88..	AMPS

PANELBOARD - C22C-B — CB OPT: ST - SHUNT TRIP; AF - ARC FAULT CIRCUIT INTERRUPTER; GF - GROUND FAULT; FR - 100% RATED; L - LOCKABLE; EP - EQUIPMENT GROUND FAULT (30mA) — 22kA AIC RATING — SPECIAL...

VOLTAGE : 120/208 VOLTS 3 PHASE, 4 WIRE
BUS RATING : 100 AMPS
MAIN : MLO
BRANCHTYPE: CRITICAL BRANCH
LOCATION: ROOM 2206

LOAD TYPE	LOAD (VA)	CKT	LOAD SERVED	CB AMP/P	COMB PT	PHASE A	PHASE B	PHASE C	COMB PT	CB AMP/P	LOAD SERVED	CKT	LOAD (VA)	LOAD TYPE
RECEPTACLE	900	1	#U0009 RM 2805	20/1		A				20/1	COMPU RM 2801,02	2	800	RECEPTACLE
RECEPTACLE	900	3	#U0008 RM 2805	20/1			B			20/1	COMPU RM 2812	4	180	RECEPTACLE
RECEPTACLE	1000	5	#U0014 RM 2806	20/1				C		20/1	COMPU RM 2803,04,08,09	6	1600	RECEPTACLE
RECEPTACLE	1000	7	#U0013 RM 2806	20/1		A				20/1	COMPU RM 2813,14,15,16	8	1600	RECEPTACLE
RECEPTACLE	1000	9	#U0012 RM 2806	20/1			B			20/1	COMPU RM 2823,24,25	10	1200	RECEPTACLE
RECEPTACLE	1600	11	COMPU RM 2805,06,21,22	20/1				C		20/1	COMPU RM RM 2819	12	800	RECEPTACLE
RECEPTACLE	800	13	COMPU RM 2807,20	20/1		A				20/1	MED EQUIP RM 2811	14	1000	RECEPTACLE
RECEPTACLE	480	15	#U0015 RM 2821	20/1			B			20/1	SPARE	16		
RECEPTACLE	1400	17	#U0010 RM 2822	20/1				C		20/1	SPARE	18		
RECEPTACLE	960	19	#U0011 RM 2822	20/1		A				20/1	SPARE	20		
RECEPTACLE	960	21	#U0011 RM 2822	20/1			B			20/1	SPARE	22		
RECEPTACLE	960	23	#U0011 RM 2822	20/1				C		20/1	SPARE	24		
RECEPTACLE	900	25	#U0058 RM 2805	20/1		A				20/1	SPARE	26		
RECEPTACLE	480	27	#U0015 RM 2821	20/1			B				SPACE	28		
		29	SPACE					C			SPACE	30		
		31	SPACE			A					SPACE	32		
		33	SPACE				B				SPACE	34		
		35	SPACE					C			SPACE	36		
		37	SPACE			A					SPACE	38		
		39	SPACE				B				SPACE	40		
		41	SPACE					C			SPACE	42		

EXISTING... PHASE A PHASE B PHASE C (VA)
LOAD X 125%

PANEL CALCULATIONS:

LOAD TYPE	LOAD (VA)	DEMAND FACTOR	DEMAND...	
RECEPTACLE	20520	PER NEC ARTICLE 220.44	15260	VA
LIGHTING	0	125%	0	VA
MOTOR	0	100%	0	VA
HEAT	0	100%	0	VA
MISC	0	100%	0	VA
0 KITCHEN	0	100%	0	VA
0 ELEVATORS	0	100%	0	VA
X-RAY	0	PER NEC ARTICLE 517.73(2)	0	VA
HOTEL UNIT	0	PER NEC ARTICLE 220.42	0	VA
0 UNIT PANELS	0	100%	0	VA
25% OF LARGEST MOTOR			0	VA
HOTEL SQFT		TOTAL HOTEL SQFT	0	

FEED THROUGH PANEL — LOAD (kVA)

SUB FEED LOADS AMP/P LOAD.. LOAD TYPE

LOAD SUMMARY

Phase Loading		
Phase A	8	kVA
Phase B	5	kVA
Phase C	7	kVA
Total Connected Load	21..	kVA
Total Demand Load	15..	kVA
Line to Line Voltage	208..	VOLTS
Spare Capacity	20%	
Panel Amps	51..	AMPS

PANELBOARD - EX.E22C — CB OPT: ST - SHUNT TRIP; AF - ARC FAULT CIRCUIT INTERRUPTER; GF - GROUND FAULT; FR - 100% RATED; L - LOCKABLE; EP - EQUIPMENT GROUND FAULT (30mA) — 22kA AIC RATING — SPECIAL...

VOLTAGE : 120/208 VOLTS 3 PHASE, 4 WIRE
BUS RATING : 225 AMPS
MAIN : 60A MCB
BRANCHTYPE: EQUIPMENT BRANCH
LOCATION: ROOM 2206

LOAD TYPE	LOAD (VA)	CKT	LOAD SERVED	CB AMP/P	COMB PT	PHASE A	PHASE B	PHASE C	COMB PT	CB AMP/P	LOAD SERVED	CKT	LOAD (VA)	LOAD TYPE
MOTOR	1000	1	EX.FCU (YC)	20/1		A				20/1	SPARE	2		
MISC	200	3	EX.PWER CONTL 2B-130	20/1			B			20/1	***EF-101 RM 2227***	4	***240***	***MOTOR***
HEAT	***250***	5	***PS-V1 RM 2206***	20/1				C		20/1	***PS-V5 RM 2206***	6	***250***	***HEAT***
HEAT	***250***	7	***PS-V2 RM 2206***	20/1		A				20/1	***PS-V6 RM 2206***	8	***200***	***HEAT***
HEAT	***250***	9	***PS-V3 RM 2206***	20/1			B			20/1	***PS-V7 RM 2206***	10	***200***	***HEAT***
HEAT	***250***	11	***PS-V4 RM 2206***	20/1				C		20/1	***AHU-101-CONTROL PNL...***	12	***500***	***MISC***
MOTOR	***200***	13	***CP-1 ELEV LOBBY CORR***	20/1		A				20/1	***RO-1 RM 228***	14	***1600***	***MOTOR***
MOTOR	***200***	15	***CP-2 CORR RCC280R***	20/1			B			20/1	SPACE	16		
		17	SPARE	20/1				C		20/1	SPACE	18		
		19	SPARE	20/1		A				20/1	SPACE	20		
		21	SPARE	20/1			B			20/1	SPACE	22		
		23	SPARE	20/1				C		20/1	SPACE	24		
		25	SPARE	20/1		A					SPACE	26		
		27	SPARE	20/1			B				SPACE	28		
		29	SPARE	20/1				C			SPACE	30		

EXISTING... PHASE A PHASE B PHASE C (VA)
LOAD X 125%

PANEL CALCULATIONS:

LOAD TYPE	LOAD (VA)	DEMAND FACTOR	DEMAND...	
RECEPTACLE	0	PER NEC ARTICLE 220.44	0	VA
LIGHTING	0	125%	0	VA
MOTOR	3240	100%	3240	VA
HEAT	1650	100%	1650	VA
MISC	700	100%	700	VA
0 KITCHEN	0	100%	0	VA
0 ELEVATORS	0	100%	0	VA
X-RAY	0	PER NEC ARTICLE 517.73(2)	0	VA
HOTEL UNIT	0	PER NEC ARTICLE 220.42	0	VA
0 UNIT PANELS	0	100%	0	VA
25% OF LARGEST MOTOR			400	VA
HOTEL SQFT		TOTAL HOTEL SQFT	0	

FEED THROUGH PANEL — LOAD (kVA)

SUB FEED LOADS AMP/P LOAD.. LOAD TYPE

LOAD SUMMARY

Phase Loading		
Phase A	3	kVA
Phase B	1	kVA
Phase C	1	kVA
Total Connected Load	6..	kVA
Total Demand Load	6..	kVA
Line to Line Voltage	208..	VOLTS
Spare Capacity	20%	
Panel Amps	20..	AMPS

PANELBOARD - EX.LS22C — CB OPT: ST - SHUNT TRIP; AF - ARC FAULT CIRCUIT INTERRUPTER; GF - GROUND FAULT; FR - 100% RATED; L - LOCKABLE; EP - EQUIPMENT GROUND FAULT (30mA) — 22kA AIC RATING — SPECIAL...

VOLTAGE : 120/208 VOLTS 3 PHASE, 4 WIRE
BUS RATING : 100 AMPS
MAIN : 60A MCB
BRANCHTYPE: CRITICAL BRANCH
LOCATION: ROOM 2206

LOAD TYPE	LOAD (VA)	CKT	LOAD SERVED	CB AMP/P	COMB PT	PHASE A	PHASE B	PHASE C	COMB PT	CB AMP/P	LOAD SERVED	CKT	LOAD (VA)	LOAD TYPE
MISC	100	1	EX.FA PNL RESEARCH	20/1		A				20/1	***EXIT SIGN***	2	***105***	***LIGHTING***
LIGHTING	***385***	3	***NIGHT LIGHTS***	20/1			B			20/1	SPARE	4		
		5	SPARE	20/1				C		20/1	SPARE	6		
		7	SPARE	20/1		A				20/1	SPARE	8		
		9	SPARE	20/1			B			20/1	SPARE	10		
		11	SPACE					C			SPACE	12		
		13	SPACE			A					SPACE	14		
		15	SPACE				B				SPACE	16		
		17	SPACE					C			SPACE	18		
		19	SPACE			A					SPACE	20		
		21	SPACE				B				SPACE	22		
		23	SPACE					C			SPACE	24		
		25	SPACE			A					SPACE	26		
		27	SPACE				B				SPACE	28		
		29	SPACE					C			SPACE	30		

EXISTING... PHASE A PHASE B PHASE C (VA)
LOAD X 125%

PANEL CALCULATIONS:

LOAD TYPE	LOAD (VA)	DEMAND FACTOR	DEMAND...	
RECEPTACLE	0	PER NEC ARTICLE 220.44	0	VA
LIGHTING	490	125%	613	VA
MOTOR	0	100%	0	VA
HEAT	0	100%	0	VA
MISC	100	100%	100	VA
0 KITCHEN	0	100%	0	VA
0 ELEVATORS	0	100%	0	VA
X-RAY	0	PER NEC ARTICLE 517.73(2)	0	VA
HOTEL UNIT	0	PER NEC ARTICLE 220.42	0	VA
0 UNIT PANELS	0	100%	0	VA
25% OF LARGEST MOTOR			0	VA
HOTEL SQFT		TOTAL HOTEL SQFT	0	

FEED THROUGH PANEL — LOAD (kVA)

SUB FEED LOADS AMP/P LOAD.. LOAD TYPE

LOAD SUMMARY

Phase Loading		
Phase A	0	kVA
Phase B	0	kVA
Phase C	0	kVA
Total Connected Load	1..	kVA
Total Demand Load	1..	kVA
Line to Line Voltage	208..	VOLTS
Spare Capacity	20%	
Panel Amps	2..	AMPS

ADDENDUM #1	**11/06/2026**
ISSUED FOR BID	**05/15/2026**
100% CONSTRUCTION DOCUMENTS	**03/16/2026**
95% CONSTRUCTION DOCUMENTS	**01/30/2026**
65% DESIGN DEVELOPMENT RESUBMITTAL	**12/01/2025**
65% DESIGN DEVELOPMENT SUBMITTAL	**09/08/2025**
Revisions:	**Date:**

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

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www.bancroft-ae.com
Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - PANEL SCHEDULES
Phase: ISSUED FOR BID
Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY
Project Number: 521-24-102
Building Number: #1
Approved: Project Director
Location: BIRMINGHAM VAMC
Issue Date: 11/06/2026
Checked: PTP
Drawn: YY
Drawing Number: E601

VA FORM 08-6231

PANELBOARD - L22C-A

VOLTAGE : 120/208 VOLTS 3 PHASE, 4 WIRE
BUS RATING : 225 AMPS
MAIN : 200A MCB LSI (1)
BRANCHTYPE: NORMAL BRANCH
LOCATION: ROOM 2206

CB OPT: ST - SHUNT TRIP
AF - ARC FAULT CIRCUIT INTERRUPTER
GF - GROUND FAULT
FR - 100% RATED
L - LOCKABLE
EP - EQUIPMENT GROUND FAULT (30mA)

22kA AIC RATING

SPECIAL...

LOAD TYPE	LOAD (VA)	CKT	LOAD SERVED	CB AMP/P	COBPT	A	PHASE B	C	COBPT	CB AMP/P	LOAD SERVED	CKT	LOAD (VA)	LOAD TYPE
RECEPTACLE	1080	1	REC RM 2211,12	20/1		A				20/1	REC RM 2224,25,26,27	2	1080	RECEPTACLE
RECEPTACLE	1080	3	REC RM 2210,11	20/1			B			20/1	REC COPIER RM 2225	4	1000	RECEPTACLE
RECEPTACLE	1080	5	REC RM 2208,09	20/1				C		20/1	REC RM 2222,23,24	6	1080	RECEPTACLE
RECEPTACLE	800	7	REF RM 2229	20/1		A				20/1	REC RM 2220,21,22	8	1080	RECEPTACLE
RECEPTACLE	800	9	MICRO RM 2229	20/1			B			20/1	REC RM 2218,19	10	1260	RECEPTACLE
RECEPTACLE	540	11	REC RM 2229,CLOS	20/1				C		20/1	REC RM 2217,18	12	1080	RECEPTACLE
RECEPTACLE	800	13	COFF MAKER RM 2229	20/1		A				20/1	REC RM 2215,16	14	1080	RECEPTACLE
RECEPTACLE	1080	15	REC RM 2203,29, 2827	20/1			B			20/1	REC RM 2214,15	16	1080	RECEPTACLE
RECEPTACLE	900	17	REC RM 2202,03	20/1				C		20/1	REC RCC270R,272R	18	900	RECEPTACLE
RECEPTACLE	1080	19	REC RM 2200,01	20/1		A				20/1	REC RCC274R,277R, 276R,284R	20	720	RECEPTACLE
RECEPTACLE	1080	21	REC RM 2200	20/1			B			20/1	REC ON 1ST FL ROOF	22	180	RECEPTACLE
RECEPTACLE	1000	23	COPIER RM 2201	20/1				C		20/1	REC RCC271R	24	200	RECEPTACLE
LIGHTING	916	25	LTS RM 2218,19,20,21,22 23,24,25,26,27	20/1		A				20/1	LTS RCC270R,271R,272R 273R,274R,276R,277R, 284R.	26	454	LIGHTING
LIGHTING	969	27	LTS RM 2206,07,08,09,10, 11,12,13,14,15,16,17,29	20/1			B			20/1	LTS RM 2200,01,02,03, 2827	28	540	LIGHTING
LIGHTING	1200	29	nLIGHT BRIDGE B1,B2,B3 B4,B5,B6,B7,B14	20/1				C		20/1	nLIGHT BRIDGE B8,B9, B10,B11,B12,B13	30	900	LIGHTING
RECEPTACLE	1200	31	#U0022 RM 2219	20/1		A				20/1	#U0022 RM 2211	32	1200	RECEPTACLE
RECEPTACLE	1200	33	#U0022 RM 2217	20/1			B			20/1	#U0022 RM 2210	34	1200	RECEPTACLE
RECEPTACLE	1200	35	#U0022 RM 2216	20/1				C		20/1	#U0022 RM 2209	36	1200	RECEPTACLE
RECEPTACLE	1200	37	#U0022 RM 2215	20/1		A				20/1	#U0022 RM 2202	38	1200	RECEPTACLE
RECEPTACLE	100	39	nLIGHT LIGHT CONTROL...	20/1			B			20/1	SPARE	40		
		41	SPARE	20/1				C		20/1	SPARE	42		
		43	SPARE	20/1		A				20/1	SPARE	44		
		45	SPARE	20/1			B			20/1	SPARE	46		
		47	SPARE	20/1				C		20/1	SPARE	48		
		49	SPARE	20/1		A				20/1	SPARE	50		
		51	SPACE				B				SPACE	52		
		53	SPACE					C			SPACE	54		
		55	SPACE			A					SPACE	56		
		57	SPACE				B				SPACE	58		
		59	SPACE					C			SPACE	60		

EXISTING... PHASE A PHASE B PHASE C (VA)
LOAD X 125%

PANEL CALCULATIONS:

LOAD TYPE	LOAD (VA)	DEMAND FACTOR	DEMAND...	
RECEPTACLE	61520	PER NEC ARTICLE 220.44	35760	VA
LIGHTING	8380	125%	10475	VA
MOTOR	500	100%	500	VA
HEAT	0	100%	0	VA
MISC	0	100%	0	VA
0 KITCHEN	0	100%	0	VA
0 ELEVATORS	0	100%	0	VA
X-RAY	0	PER NEC ARTICLE 517.73(2)	0	VA
HOTEL UNIT	0	PER NEC ARTICLE 220.42	0	VA
0 UNIT PANELS	0	100%	0	VA
25% OF LARGEST MOTOR			125	VA
HOTEL SQFT		TOTAL HOTEL SQFT	0	

FEED THROUGH PANEL — LOAD (kVA)
PANELBOARD - L22C-B — 34

SUB FEED LOADS AMP/P LOAD.. LOAD TYPE

LOAD SUMMARY
Phase Loading

Phase A	26 kVA
Phase B	23 kVA
Phase C	22 kVA
Total Connected Load	70.. kVA
Total Demand Load	47.. kVA
Line to Line Voltage	208.. VOLTS
Spare Capacity	20%
Panel Amps	156.. AMPS

PANELBOARD - L22C-B

VOLTAGE : 120/208 VOLTS 3 PHASE, 4 WIRE
BUS RATING : 225 AMPS
MAIN : MLO
BRANCHTYPE: NORMAL BRANCH
LOCATION: ROOM 2206

CB OPT: ST - SHUNT TRIP
AF - ARC FAULT CIRCUIT INTERRUPTER
GF - GROUND FAULT
FR - 100% RATED
L - LOCKABLE
EP - EQUIPMENT GROUND FAULT (30mA)

22kA AIC RATING

SPECIAL...

LOAD TYPE	LOAD (VA)	CKT	LOAD SERVED	CB AMP/P	COBPT	A	PHASE B	C	COBPT	CB AMP/P	LOAD SERVED	CKT	LOAD (VA)	LOAD TYPE
RECEPTACLE	1080	1	REC RM 2801,02	20/1		A				20/1	REC RM 2805,22	2	1080	RECEPTACLE
RECEPTACLE	1080	3	REC RM 2801,04	20/1			B			20/1	REC RM 2806,21	4	900	RECEPTACLE
RECEPTACLE	1080	5	REC RM 2803,07	20/1				C		20/1	REC RM 2807	6	900	RECEPTACLE
RECEPTACLE	1080	7	REC RM 2803,09	20/1		A				20/1	REC RM 2820	8	900	RECEPTACLE
RECEPTACLE	1080	9	REC RM 2808,09	20/1			B			20/1	REC RCC280R,281R,282R	10	720	RECEPTACLE
RECEPTACLE	720	11	REC RM 2810,11,18,19	20/1				C		20/1	REC RCC275R,278R,279R	12	720	RECEPTACLE
RECEPTACLE	1080	13	REC RM 2825,26	20/1		A				20/1	REC RM 2228	14	720	RECEPTACLE
RECEPTACLE	1080	15	REC RM 2824,25	20/1			B			20/1	AHU-101-UV LTS RM 2228	16	500	LIGHTING
RECEPTACLE	900	17	REC RM 2823	20/1				C		20/1	LTS RM 2801,02,03,04,...	18	642	LIGHTING
RECEPTACLE	720	19	REC RM 2813,14	20/1		A				20/1	LTS 2805,06,07,20,221,...	20	1116	LIGHTING
RECEPTACLE	720	21	REC RM 2815,16	20/1			B			20/1	LTS RCC275R,278R,279R...	22	483	LIGHTING
MOTOR	500	23	HUM-101 RM 2228	20/1				C		20/1	LTS RM 2228	24	176	LIGHTING
		25	SPARE	20/1		A				20/1	LTS RM 2810,11,13,14,15...	26	484	LIGHTING
RECEPTACLE	1200	27	#U0023 RM 2802	20/1			B			20/1	#U0023 RM 2807	28	1200	RECEPTACLE
RECEPTACLE	1200	29	#U0023 RM 2801	20/1				C		20/1	#U0023 RM 2802	30	1200	RECEPTACLE
RECEPTACLE	1200	31	#U0023 RM 2803	20/1		A				20/1	#U0023 RM 2823	32	1200	RECEPTACLE
RECEPTACLE	1200	33	#U0023 RM 2804	20/1			B			20/1	#U0023 RM 2824	34	1200	RECEPTACLE
RECEPTACLE	1200	35	#U0023 RM 2809	20/1				C		20/1	#U0023 RM 2825	36	1200	RECEPTACLE
RECEPTACLE	1200	37	#U0023 RM 2808	20/1		A				20/1	SPARE	38		
		39	SPARE	20/1			B			20/1	SPARE	40		
		41	SPARE	20/1				C		20/1	SPARE	42		
		43	SPARE	20/1		A				20/1	SPARE	44		
		45	SPARE	20/1			B			20/1	SPARE	46		
		47	SPARE	20/1				C		20/1	SPARE	48		
		49	SPARE	20/1		A					SPACE	50		
		51	SPACE				B				SPACE	52		
		53	SPACE					C			SPACE	54		
		55	SPACE			A					SPACE	56		
		57	SPACE				B				SPACE	58		
		59	SPACE					C			SPACE	60		

EXISTING... PHASE A PHASE B PHASE C (VA)
LOAD X 125%

PANEL CALCULATIONS:

LOAD TYPE	LOAD (VA)	DEMAND FACTOR	DEMAND...	
RECEPTACLE	29760	PER NEC ARTICLE 220.44	19880	VA
LIGHTING	3401	125%	4251	VA
MOTOR	500	100%	500	VA
HEAT	0	100%	0	VA
MISC	0	100%	0	VA
0 KITCHEN	0	100%	0	VA
0 ELEVATORS	0	100%	0	VA
X-RAY	0	PER NEC ARTICLE 517.73(2)	0	VA
HOTEL UNIT	0	PER NEC ARTICLE 220.42	0	VA
0 UNIT PANELS	0	100%	0	VA
25% OF LARGEST MOTOR			125	VA
HOTEL SQFT		TOTAL HOTEL SQFT	0	

FEED THROUGH PANEL — LOAD (kVA)

SUB FEED LOADS AMP/P LOAD.. LOAD TYPE

LOAD SUMMARY
Phase Loading

Phase A	12 kVA
Phase B	11 kVA
Phase C	10 kVA
Total Connected Load	34.. kVA
Total Demand Load	25.. kVA
Line to Line Voltage	208.. VOLTS
Spare Capacity	20%
Panel Amps	82.. AMPS

ADDENDUM #1 (1)	11/06/2026
ISSUED FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	03/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
65% DESIGN DEVELOPMENT SUBMITTAL	09/08/2025
Revisions:	Date:

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STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - PANEL SCHEDULES
Approved: Project Director
Phase: ISSUED FOR BID
Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY
Location: BIRMINGHAM VAMC
Issue Date: 11/06/2026
Checked: PTP
Drawn: YY
Project Number: 521-24-102
Building Number: #1
Drawing Number: E602

VA FORM 08-6231

GENERAL TELECOMMUNICATIONS NOTES

1. SCOPE INCLUDES MODIFICATIONS AND ADDITIONS TO EXISTING ACCESS CONTROL AND VIDEO SURVEILLANCE SYSTEMS. CONTRACTORS TO PROVIDE ALL LABOR AND MATERIALS, INCLUDING COMPONENTS, REQUIRE TO ACHIEVE A FULLY FUNCTIONAL SYSTEM.
2. PROJECT COORDINATION- NO SYSTEMS OR COMPONENTS SHALL BE DISRUPTED OUT OF PROJECT SEQUENCE; COORDINATE ALL SERVICES DISRUPTIONS WITH THE PROJECT COR.
3. CARE SHALL BE TAKEN AS TO NOT DISRUPT OR DAMAGE EXISTING SYSTEMS INCLUDING BUT NOT LIMITED TO CATV, ACCESS CONTROL, NURSE CALL, BUILDING AUTOMATION, DISTRIBUTED ANTENNA, PAGING.
4. CONTRACTOR SHALL VERIFY ALL COMPONENTS CONNECTED TO EXISTING TELECOMMUNICATION GROUNDING BUSBARS HAVE BEEN TAKEN OUT OF SERVICE OR HAS BEEN BONDED TO THE NEW TELECOMMUNICATION GROUNDING/BONDING SYSTEM PRIOR TO REMOVING EXISTING GROUNDING COMPONENTS.
5. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROMPTLY REPORT ANY DRAWING DISCREPANCIES TO THE PROJECT COR AND ARCHITECT.
6. IN ADDITION TO PRIMARY PATHWAYS, CABLE TRAY SHALL BE PROVIDED WITH CABLE BUNDLES EXCEED 24 CABLES.
7. FIRE RATED MECHANICAL SLEEVE ASSEMBLES SHALL BE PROVIDED WHEN PASSING THROUGH FIRE RATED PARTITIONS ASSUMING 40% FILL AND 50% SPARE CAPACITY
8. CONTRACTOR SHALL ENSURE THAT ALL PENETRATIONS BE SEALED AS REQUIRED TO MEET EXISTING RATINGS. REFER TO SPECIFICATION 07 84 00.
9. EXISTING ROUTING FOR TELECOM DROPS SHALL BE MAINTAINED TO THE FULLEST EXTENT POSSIBLE. IT IS UNDERSTOOD THAT SOME OF THE NEW CABLE WILL BE PLACED WITHIN NEW CABLE TRAY, HOWEVER THE EXISTING CONDUIT TO THE DATE DROP SHALL BE REUSED.
10. THE INDUSTRY STANDARD OF 295 FEET MAXIMUM HORIZONTAL CABLE LENGTH SHALL IMPLEMENTED. IF THIS REQUIREMENT CAN NOT BE MET, CONTACT TO PROJECT COR IMMEDIATELY.
11. PROVIDE CAT 6A DUAL JACK SURFACE MOUNT KEYSTONE BOX ABOVE THE CEILING.
12. SPLICING OF ANY LOW VOLTAGE CABLING SHALL NOT BE ACCEPTABLE.
13. CONTRACTOR SHALL PROVIDE SERVICE LOOP OF 10' AT BOTH TERMINATION OF CABLING, TO BE HOUSED IN CABLE TRAY.

INDUSTRY STANDARDS

1.8.2.8 TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA):
(A) TIA-120 SERIES -TELECOMMUNICATIONS LAND MOBILE COMMUNICATIONS (APCO/PROJECT 25).
(B) TIA-155- GUIDELINES FOR THE ASSESSMENT AND MITIGATION OF INSTALLED CATEGORY 6 CABLING TO SUPPORT 10GBASE-T.
(C) TIA TSB - 162 - A - TELECOMMUNICATIONS CABLING GUIDELINES FOR WIRELESS ACCESS POINTS.
(D) TIA - 222 - STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.
(E) TIA - 472DOOO - B - FIBER OPTIC COMMUNICATIONS CABLE FOR OUTSIDE PLANT USE.
(F) TIA - 568 - REVISION/EDITION: C COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD SET:
- (· TIA - 568 .0 (REV. E) GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES,
- (· TIA - 568 .1 (REV. E) COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD PART 1: GENERAL REQUIREMENTS, (· TIA - 568 .2 (REV. D) COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD - PART 2: BALANCED TWISTED PAIR CABLING COMPONENTS,
- (· TIA - 568.3 (REV. D) OPTICAL FIBER CABLING COMPONENTS STANDARD, AND
- (· TIA - 568 .4 (REV. D) BROADBAND COAXIAL CABLING AND COMPONENTS STANDARD (WITH ADDENDUMS AND ERRATA).

(G) TIA - 569 (REV. E)- TELECOMMUNICATIONS PATHWAYS AND SPACES.
(H) TIA/EIE - 590 (REV. A) - STANDARD FOR PHYSICAL LOCATION AND PROTECTION OF BELOW GROUND FIBER OPTIC CABLE PLANT.
(I) ANSI/TIA - 606 (REV. D) - ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE.
(J) TIA - 607 (REV. D) - GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES.
(K) ANSI/TIA - 758 (REV. B) - CUSTOMER-OWNED OUTSIDE PLANT TELECOMMUNICATION INFRASTRUCTURE STANDARD.
(L) ANSI/TIA - 862 (REV. B)- BUILDING AUTOMATION SYSTEMS CABLING STANDARD.
(M) TIA - 942 (REV. B) - TELECOMMUNICATIONS INFRASTRUCTURE STANDARD FOR DATA CENTERS.
(N) TIA - 1179 (REV. A)- HEALTHCARE FACILITY TELECOMMUNICATIONS INFRASTRUCTURE STANDARD.

COMMUNICATION SYMBOLS

P#+H — WALL MOUNTED - VOICE / DATA OUTLET
P# = NUMBER OF VOICE/DATA PORTS IN EACH FACEPLATE, IF NOT SHOWN PROVIDE 2 PORTS.
+ H =INSTALLATION HEIGHT IN INCHES AT CENTER OF OUTLET, IF NOT SHOWN INSTALL AT TYPICAL 18" RECEPTACLE HEIGHT. COORDINATE WITH ELECTRICAL

P# — CEILING MOUNTED - VOICE / DATA OUTLET
P# = NUMBER OF VOICE / DATA PORTS IN FACEPLATE, IF NOT SHOWN PROVIDE 4 PORTS

P# — FLOOR MOUNTED-TELEPHONE/DATA OUTLET
P# = NUMBER OF VOICE / DATA PORTS IN FACEPLATE, IF NOT SHOWN PROVIDE 4 PORTS

P#+H — WALL MOUNTED - GETWELL NETWORK DATA OUTLET
P# = NUMBER OF VOICE / DATA PORTS IN FACEPLATE, IF NOT SHOWN PROVIDE 1 PORTS
+ H =INSTALLATION HEIGHT IN INCHES AT CENTER OF OUTLET, IF NOT SHOWN INSTALL AT TYPICAL 72" RECEPTACLE HEIGHT. COORDINATE WITH ELECTRICAL

WAP — CEILING MOUNTED - OUTLET FOR WIRELESS ACCESS POINT
P# = NUMBER OF VOICE / DATA PORTS IN FACEPLATE, IF NOT SHOWN PROVIDE 2 PORTS

E P# — FLOOR BOX- VOICE / DATA OUTLETS
P# = NUMBER OF VOICE / DATA PORTS IN FACEPLATE, IF NOT SHOWN PROVIDE 4 PORTS
E= POWER OUTLET- REFER TO ELECTRICAL PLANS FOR DETAILS

E P# — POKE THRU- VOICE / DATA OUTLETS
P# = NUMBER OF VOICE / DATA PORTS IN FACEPLATE, IF NOT SHOWN PROVIDE 4 PORTS
E= POWER OUTLET- REFER TO ELECTRICAL PLANS FOR DETAILS

TV T#+H — WALL MOUNTED TV OUTLET
PROVIDE 1 DATA PORT OTHERWISE NOTED
T# = TYPE OF OUTLET SEE TELECOMMUNICATION DETAILS
+ H =INSTALLATION HEIGHT IN INCHES AT CENTER OF OUTLET, IF NOT SHOWN INSTALL AT TYPICAL 72" RECEPTACLE HEIGHT. COORDINATE WITH ELECTRICAL

TV T#+H — CEILING MOUNTED TV OUTLET
PROVIDE 1 DATA PORT UNLESS OTHERWISE NOTED
T# = TYPE OF OUTLET SEE TELECOMMUNICATION DETAILS
+ H =INSTALLATION HEIGHT IN INCHES AT CENTER OF OUTLET, IF NOT SHOWN INSTALL AT TYPICAL 72" RECEPTACLE HEIGHT. COORDINATE WITH ELECTRICAL

ELECTRONIC SAFETY AND SECURITY SYMBOLS

REMOTE DICTATING OUTLET MTD 1'-6" (457 mm) AFF. UNLESS OTHERWISE NOTED
PA — SECURITY / DURESS-ALARM BUTTON MOUNTED 3" ABOVE COUNTER TOP / COUNTER TOP BACK SPLAH.
X — CEILING MOUNTED SECURITY CAMERA, X REPERSENTS VIEW RANGE OF CAMERA
X — WALL MOUNTED SECURITY CAMERA, X REPERSENTS VIEW RANGE OF CAMERA
CR — WALL MOUNTED CARD READER
CR/K — WALL MOUNTED CARD READER WITH KEYPAD
RFID — WALL MOUNTED PATIENT WRISTBAND READER
AIP — AIPHONE
ADO — AUTOMATIC DOOR OPENER
REX — REQUEST TO EXIT PUSH BUTTON
ACP — ACCESS CONTROL PANEL
ACPS — ACCESS CONTROL POWER SUPPLY
KP — KEYPAD LOCK
RX — REQUEST TO EXIT MOTION
ES — DOOR LOCKING MECHANISM/ELECT STRIKE
ML — DOOR LOCKING MECHANISM/MAG LOCK
ROOF POLE MOUNTED SECURITY CAMERA
CCP — CAMERA CONTROL PANEL
MID — MOTION INTRUSION DETECTOR
GB — GLASS BREAK SENSOR
DC — DOOR CONTACT
WS — DOOR OPENER WAVE SENSOR FOR MOTORIZED DOOR ESSEX ELECTORNICS #32NF3X.
INTERCOM STATION (REFER TO SPECS. FOR FUNCTIONAL OPERATION OF INSTRUMENT & TYPE REQUIRED)
S — INTERCOM STAFF STATION.
R — RADIO CHANNEL SELECTOR FACILITIES, MTD. 4'-6" (1372 mm) AFF UNLESS OTHERWISE NOTED.
RM — SPEAKER PROGRAM SELECTOR SWITCH & VOLUME CONTROL MTD. 4'-6" (1372 mm) AFF UNLESS OTHERWISE NOTED.
DB — DURESS BUTTON
DAP — DIVERSITY PATCH ANTENNA
DAC — DAS ANTENNA CELLULAR
DS — OVER THE DOOR ALARM SENSOR PERVENTIVE
SPA — PUBLIC ADDRESS SYSTEM 2X2 RECESSED SPEAKER
SX — SPEAKER, WALL MOUNTED, "X" INDICATES THE TYPE, PROVIDE SCHEDULE ON LEGEND MTD. 7'-6" (2286mm) AFF UNLESS OTHERWISE NOTED
SPA — PUBLIC ADDRESS SYSTEM WALL MOUNTED SPEAKER
SEM — EMERGENCY MANAGEMENT SYSTEM TEXT-TO-SPEECH WALL MOUNTED SPEAKER.
V — SOUND MASKING (WHITE NOISE) SYSTEM LOCAL KEYPAD STATION
SX — SPEAKER, CEILING MOUNTED, "X" INDICATES THE TYPE, PROVIDE SCHEDULE ON LEGEND
SPA — PUBLIC ADDRESS SYSTEM CEILING RECESSED ROUND SPEAKER
SIC — INTERCOM SYSTEM SPEAKER.
SSM — SOUND MASKING (WHITE NOISE) SYSTEM SPEAKER.

N — NURSE CALL - WALL MOUNTED
-"D" DENOTES DOME LIGHT
-"ST" DENOTES STAFF ASSIST
-"P" DENOTES PULL CORD
-"PS" DENOTES PATIENT STATION WITH STAFF ASSIST AND EMERGENCY CALL

N — NURSE CALL - CEILING MOUNTED
-"D" DENOTES DOME LIGHT
-"DZ" DENOTE ZONE DOME LIGHT

GENERAL SYMBOLS

CATV — CABLE TELEVISION LINE = CATV
CCTV — CLOSED CIRCUIT TELEVISION LINE = CCTV. MINIMUM 1" (25mm) CONDUIT
FO — FIBEROPTICS LINE = FO
T — TELEPHONE LINE = T
I — INTERCOM LINE = I. MINIMUM 3/4" (19mm) CONDUIT.
S — SOUND LINE = S
NC — NURSE CALL LINE = NC. MINIMUM 3/4" (19mm) CONDUIT.
R — RADIO CONDUIT RUN, MINIMUM 3/4" (19mm) CONDUIT.
C — TELECOMMUNICATIONS MANHOLE
TELECOMMUNICATION TERMINAL CABINET
TTB — TELEPHONE BACKBOARD (WALL MOUNTED)

ELECTRICAL DEMOLITION LEGEND

SYMBOL	DESCRIPTION
R	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED.
X	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO REMAIN.
XC	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED AND JUNCTION BOX CAPPED OR REUSED AS REQUIRED.
XO	NEW ELECTRICAL EQUIPMENT INSTALLED OVER EXISTING OUTLET.
XRR	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED, RELOCATED AND JUNCTION BOX REMOVED OR CAPPED AS REQUIRED.
XR	EXISTING ELECTRICAL EQUIPMENT OR OUTLET RELOCATED (NEW LOCATION).
XRT	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE TEMPORARILY REMOVED AND REINSTALLED IN SAME LOCATION.
XA	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE ABANDONED.
XM	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE MODIFIED.
XW	EXISTING ELECTRICAL EQUIPMENT TO BE REWIRED.

NOTE: NOT ALL SYMBOLS MAY BE USED.

ICT DRAWING INDEX

T001	ICT - LEGEND, SYMBOLS AND ABBREVIATIONS
TD102.1	ICT - TELECOMMUNICATIONS DEMOLITION PLAN - PARTIAL SECOND FLOOR - 2K AREA
TD102.2	ICT - TELECOMMUNICATIONS DEMOLITION PLAN - PARTIAL SECOND FLOOR - 2B AREA
TD102	ICT - TELECOMMUNICATIONS DEMOLITION PLAN - PARTIAL SECOND & THIRD FLOOR
T102.1	ICT - TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR - 2K AREA
T102.2	ICT - TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR - 2B AREA
T102.3	ICT - TELECOMMUNICATIONS CABLE TRAY - PARTIAL SECOND FLOOR - 2K, 2B AREAS
T102	ICT - TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR
T103	ICT - TELECOMMUNICATIONS PLAN - THIRD FLOOR
TS102.1	ICT - SECURITY PLAN - PARTIAL SECOND FLOOR - 2K AREA
TS102.2	ICT - SECURITY PLAN - PARTIAL SECOND FLOOR - 2B AREA
T411	ICT - TELECOMMUNICATIONS RISER DIAGRAM
T511	ICT - DETAILS
T512	ICT - DETAILS
T513	ICT - DETAILS

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
65% DESIGN DEVELOPMENT SUBMISSION	09/08/2025
Revisions:	Date:

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Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ICT - LEGEND, SYMBOLS AND ABBREVIATIONS

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

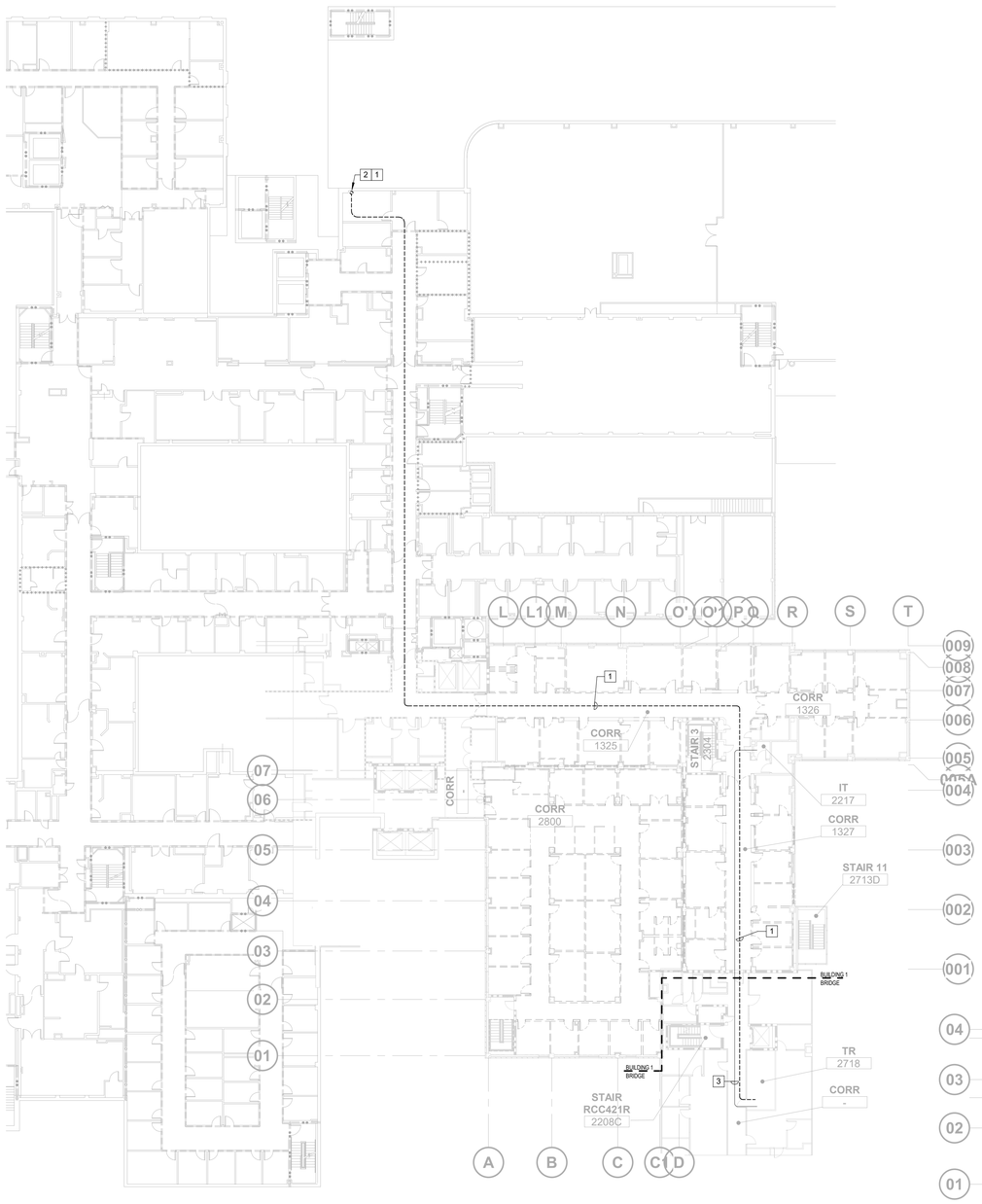
Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: T001

VA FORM 08-6231

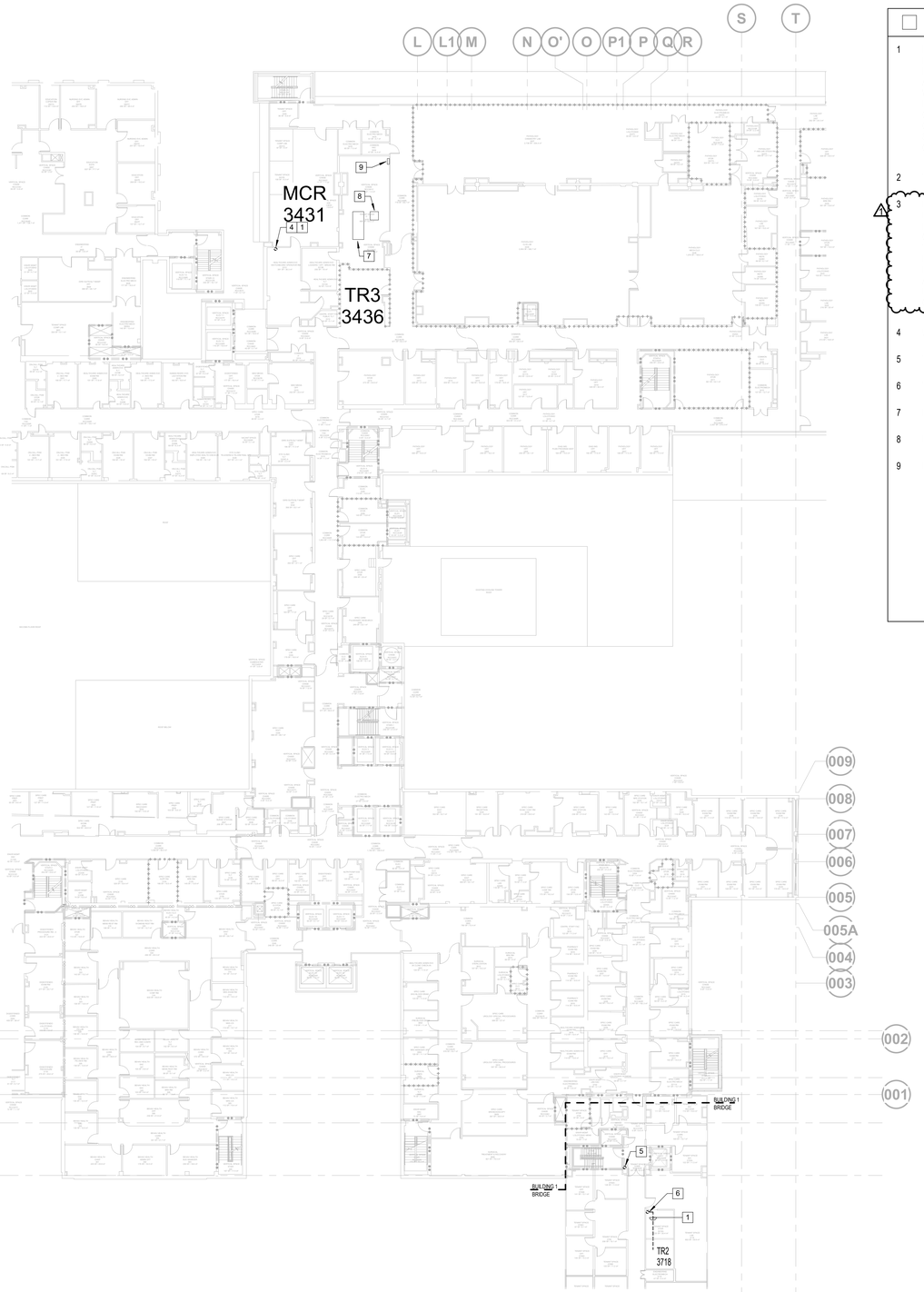


N

1 02 TELECOMMUNICATIONS DEMOLITION PLAN - PARTIAL SECOND FLOOR

1" = 20'-0"

0 10' 20' 40'



N

2 03 TELECOMMUNICAITONS DEMOLITION PLAN - PARTIAL THIRD FLOOR

1" = 20'-0"

0 10' 20' 40'

TELECOM DEMOLITION KEYNOTES

1. BACKBONE FIBER TO BE REMOVED AND DEMOLISHED FROM MDA FIBER PATCH PANEL TO EACH TR ROOM FIBER PATCH PANEL PER SHEET 1/T411 BACKBONE CABLING DIAGRAM, AND RE-PULLED IN RENOVATION NEW WORK. COORDINATE WITH COR AND OI&T FOR ZERO DOWNTIME. APPROXIMATE PATH. VERIFY IN FIELD. ACTUAL LOCATION PER FINAL EHRM CONSTRUCTION. CONTRACTOR TO ACCOMODATE FOR THIS CONTINGENCY. ANY DAMAGE TO THE EXISTING FIBER CABLE SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
2. TO THIRD FLOOR MAIN COMPUTER ROOM.
3. EXISTING TBB (TELECOMMUNICATIONS BONDING BACKBONE) SERVING SECOND FLOOR. DISCONNECT AND REMOVE TBB BACK TO TGB (TELECOMMUNICATIONS GROUNDING BUSBAR) IN SECOND FLOOR. PROVIDE NEW TELECOMMUNICATION BONDING BACKBONE CONDUCTOR FROM IT 2217 TO TR 2718 IMMEDIATLY FOR MINIMAL DOWNTIME. THE CONTRACTOR SHALL COORDINATE WITH ALL CONTRACTORS TO PROVIDE A NEW ROUTE PRIOR TO NEW WORK TO MINIMIZE DOWN TIME. COORDINATE WITH VA OI&T.
4. UTILIZE EXISTING SLEEVE FROM 2ND FLOOR LEVEL.
5. TO SECOND FLOOR LEVEL.
6. TO SECOND FLOOR LEVEL TR2 2718.
7. EXISTING T-MOBILE EQUIPMENT HEAD-END UNIT.
8. EXISTING PAGING AMPLIFIER
9. EXISTING PAGING SYSTEM.

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
65% DESIGN DEVELOPMENT SUBMISSION	09/08/2025
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

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Bancroft Project No. 23-135

STAMP

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ICT - TELECOMMUNICATIONS DEMOLITION PLAN - PARTIAL SECOND & THIRD FLOOR

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: TD102

VA FORM 08-6231

TELECOMMUNICATIONS GENERAL NOTES

A. DAS ANTENNAS SHALL BE REINSTALLED WITHIN 2FT OF THE SAME LOCATION AFTER NEW PLENUM WORK IS COMPLETE. CLEAN OF DEBRIS AND TEST FOR FUNTIONALITY. CONTRACTOR TO REPLACE ANY NON-WORKING ANTENNAS AND CABLING.

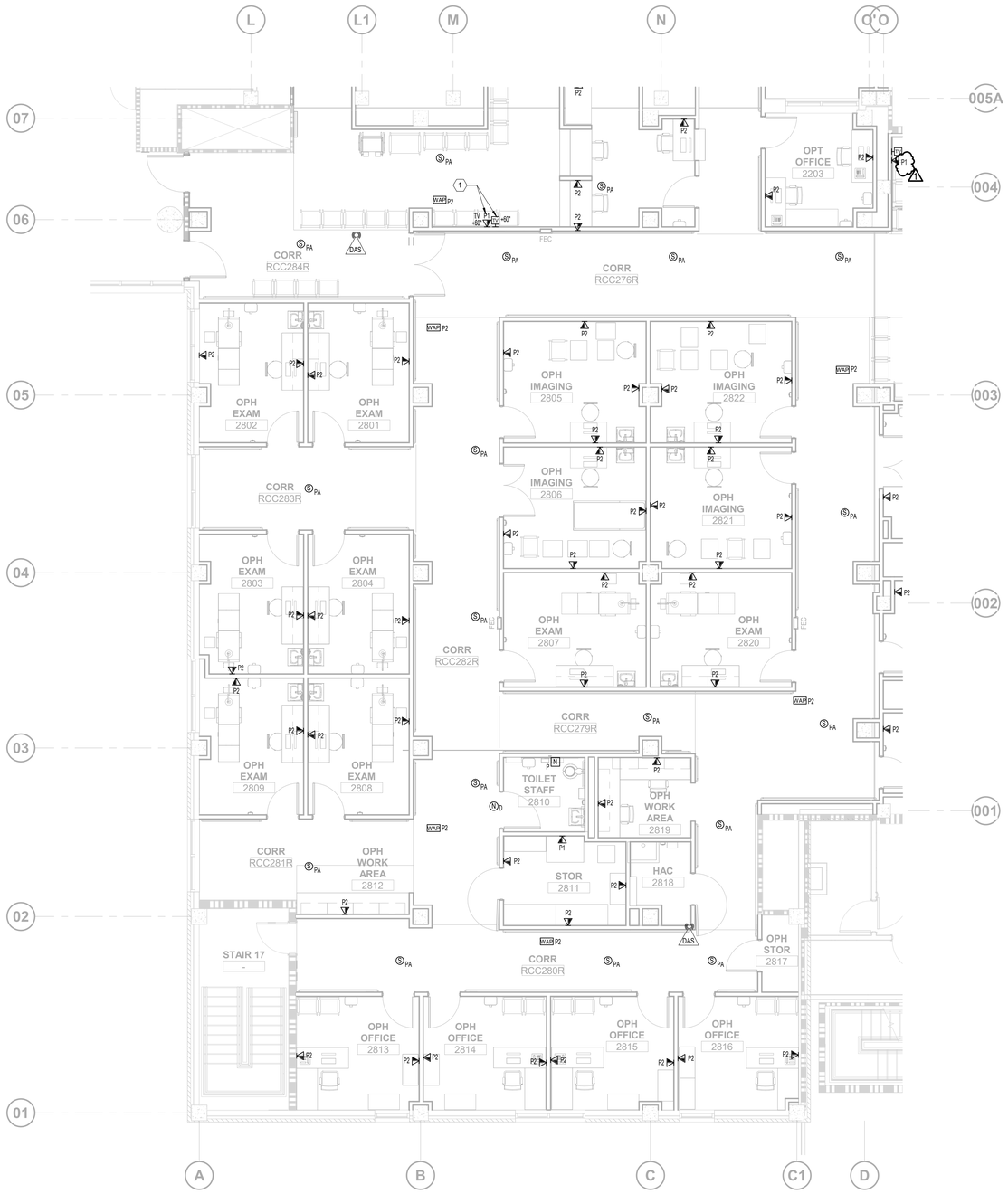
B. NURSE CALL SYSTEM HEAD-END CABINET LOCATED IN BUILDING 1, SECOND FLOOR, TR2 2718. REFER TO SHEET T102.2 FOR EXACT CABINET LOCATION. NURSE CALL SYSTEM SHALL BE COMPATIBLE WITH THE FACILITY'S EXISTING ASCOM TELLIGENCE SYSTEM.

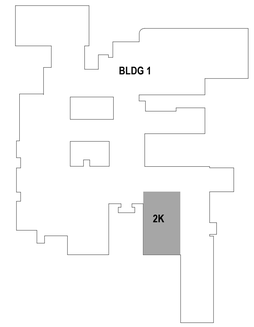
C. NURSE CALL MASTER STATION LOCATED IN BUILDING 1, THIRD FLOOR, ROOM HEALTHCARE ADMIN SVC SWITCHBOARD OPERATION ROOM 3313.

D. WORK AREA OUTLETS TO TERMINATE TO PATCH PANELS IN TR2 2718.

TELECOMMUNICATIONS KEYNOTES

1 MOUNT OUTLETS TO TELEVISION OUTLET ENCLOSURE. REFER TO DETAIL FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION WITH ARCHITECTRUAL ELEVATIONS.





KEYPLAN

N

1 **02 TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR - 2K AREA**

3/16" = 1'-0"

0 8' 16' 24'

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
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STAMP

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ICT - TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR - 2K AREA

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

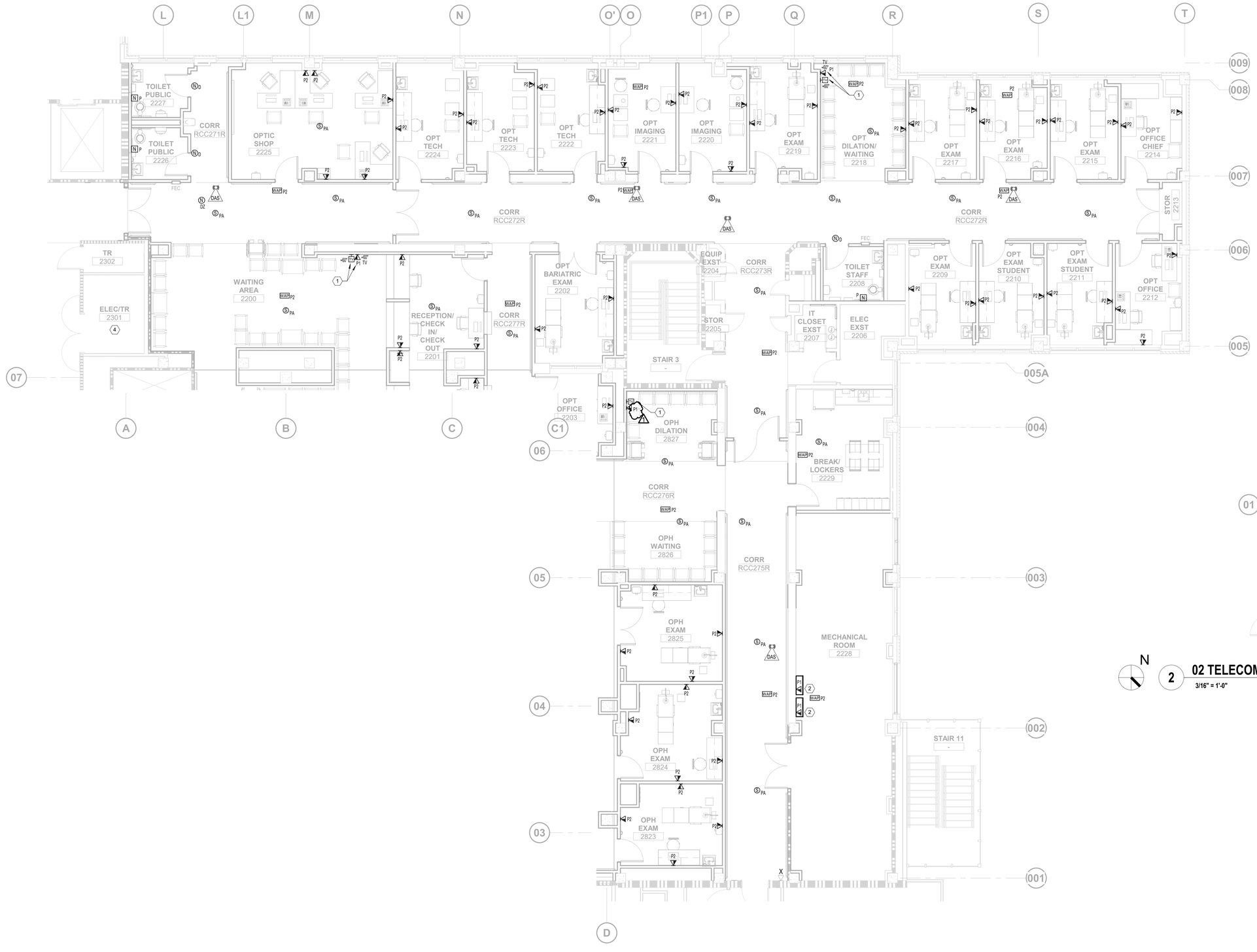
Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: T102.1

VA FORM 08-6231



TELECOMMUNICATION GENERAL NOTES

A. SEE SHEET T102.1 FOR NOTES.

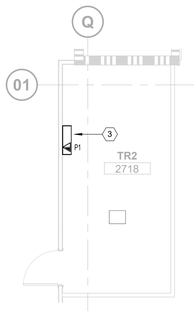
TELECOMMUNICATION KEYNOTES

1 MOUNT OUTLETS TO TELEVISION OUTLET ENCLOSURE. REFER TO DETAIL FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION WITH ARCHITECTRUAL ELEVATIONS.

2 DIRECT DIGITAL CONTROL (DDC) PANEL. COORDINATE EXACT LOCATION AND QUANTITY WITH TEMPERATURE CONTROLS (TC) CONTRACTOR.

3 PROVIDE NURSE CALL SYSTEM HEAD-END CABINET AND NETWORK CONNECTION TO TR PATCH PANEL SERVING THIS AREA. CABINET TO SERVE 2K,2B.

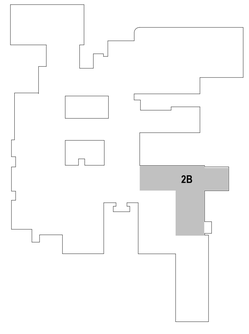
4 EXISTING CATV RISER. PROVIDE NEW SPLITTERS AS REQUIRED.



N

2 02 TELECOMMUNICATIONS PLAN - ROOM TR2 2718

3/16" = 1'-0"



KEYPLAN

N

1 02 TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR - 2B AREA

3/16" = 1'-0"

0 8' 16' 24'

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ICT - TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR - 2B AREA

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: T102.2

VA FORM 08-6231



TELECOMMUNICATIONS GENERAL NOTES

A. ALL INSTALLATION TECHNIQUES SHALL BE REVIEWED WITH AND APPROVED BY THE COR. THE CONTRACTOR SHALL INCLUDE CONTINGENCY IN HIS BID FOR ANY ADDITIONAL EFFORT OR WORK ABOVE NORMAL. REFER TO ARCHITECTURAL OPEN CEILING PLANS AND COORDINATE WITH ALL TRADES.

B. ALL JUNCTION BOX COVERS SHALL BE LABELED WITH THE APPROPRIATE PANEL/CIRCUIT NUMBERS AND THE TYPE OF SYSTEM THE WIRING IS SERVING. I.E. FIRE ALARM, LIGHTING, ETC.

C. HATCHED AREAS NOT IN SCOPE OF WORK.

D. WIRE MESH CABLE TRAY SIZE AS SHOWN ON PLAN.

E. TELECOMMUNICATIONS CABLE TRAY SHALL BE PLACED AT LOWEST POSITION WITHIN CEILING SPACE FOR EASY AND FREQUENT ACCESS.

F. TELECOMMUNICATIONS CABLE TRAY SHALL BE INSTALLED IN A LINEAR FASHION, EITHER PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURE. JOGS, SHIFTS OR DIRECTIONAL CHANGES THAT ARE NOT 90 DEGREES SHALL BE AVOIDED WHENEVER POSSIBLE.

G. TELECOMMUNICATIONS CABLE TRAY SHALL BE INSTALLED ON A CONTINUOUS HORIZONTAL PLANE. CHANGES IN ELEVATION SHALL BE AVOIDED WHENEVER POSSIBLE.

H. OTHER UTILITIES SHALL NOT BE ALLOWED TO BE PLACED BELOW TELECOMMUNICATIONS CABLE TRAY.

I. OTHER UTILITIES, CONDUIT OR CABLING SHALL NOT BE PERMITTED TO PASS THRU THE TELECOMMUNICATIONS CABLE TRAY, EITHER VERTICALLY OR HORIZONTALLY.

J. TELECOMMUNICATIONS CABLE TRAY SHALL NOT BE CUT IN SUCH A WAY THAT IT WEAKENS THE STRUCTURAL INTEGRITY OF THE CABLE TRAY.

K. WHERE PERMISSIBLE, BOTTOM OF TELECOMMUNICATIONS CABLE TRAY SHALL BE PLACED 6" ABOVE TOP OF CEILING T-BAR GRID AND SUSPENDED BAFFLES, BUT UNDER NO CIRCUMSTANCES SHALL SEPARATION BE LESS THAN 3 INCHES.

L. ONE SIDE OF TELECOMMUNICATIONS CABLE TRAY SHALL HAVE A MINIMUM OF 12 INCHES OF HORIZONTAL CLEARANCE TO ALLOW FOR ACCESS TO CABLES FOR MOVES, ADDS AND CHANGES.

M. FROM THE TOP OF THE TELECOMMUNICATIONS CABLE TRAY THERE SHALL BE A MINIMUM OF 12 INCHES OF VERTICAL CLEARANCE TO ALLOW FOR ACCESS TO CABLES FOR MOVE, ADDS AND CHANGES. WHERE THE DISTANCES DOES NOT EXCEED 6'-0", VERTICAL CLEARANCE MAY BE REDUCED TO 6 INCHES. WHERE DISTANCE DOES NOT EXCEED 3'-0", VERTICAL CLEARANCE MAY BE REDUCED TO 3 INCHES. IF VERTICAL CLEARANCE DOES NOT MEET THE ABOVE CRITERIA, TELECOMMUNICATIONS CABLE TRAY SHALL BE TRANSITIONED INTO CONDUIT WHICH EXTENDS A MINIMUM OF 3 INCHES PAST OBSTRUCTION. CONDUIT CROSS-SECTIONAL CALCULATED FILL AREA SHALL BE EQUAL TO OR GREATER THAN THE CROSS-SECTIONAL CALCULATED FILL AREA OF THE TELECOMMUNICATIONS CABLE TRAY.

N. WHERE OTHER DISCIPLINES EQUIPMENT ARE IN CLOSE PROXIMITY WITH TELECOMMUNICATIONS CABLE TRAY OR CONDUIT AND REQUIRE MAINTENANCE, COORDINATE TELECOMMUNICATIONS PATHWAY WITH OTHER DISCIPLINES TO ALLOW FOR MAINTENANCE CLEARANCE AND ROUTING OF TELECOMMUNICATIONS PATHWAYS.

O. CABLE TRAY SHALL NOT INTERFERE WITH EQUIPMENT SUCH AS VAV MAINTENANCE CLEARANCES. COORDINATE WITH MECHANICAL CONTRACTOR.

P. COORDINATE CABLE TRAY PHASING WITH OTHER SYSTEMS IN THE CEILING SPACE.

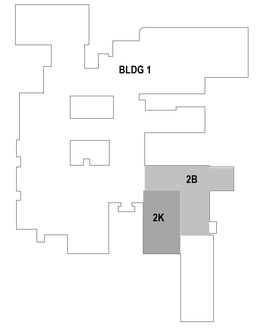
TELECOMMUNICATIONS KEYNOTES

1 PROVIDE NEW SLEEVES IF EXSITING SLEEVES ARE NOT DEEMED REUSABLE. RECAULK EXISTING SLEEVES.

2 (7) PARALLEL 4" CONDUIT TRANSITION.

3 PROVIDE ACCESS CONTROL PANEL AND POWER SUPPLIES.

5 4" SLEEVES. NUMBER OF SLEEVES AS SHOWN ON PLAN.



KEYPLAN

N

1 **02 TELECOMMUNICATIONS CABLE TRAY - PARTIAL SECOND FLOOR - 2K, 2B AREAS**

1/8" = 1'-0"

0 4' 8' 16'

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ICT - TELECOMMUNICATIONS CABLE TRAY - PARTIAL SECOND FLOOR - 2K, 2B AREAS

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

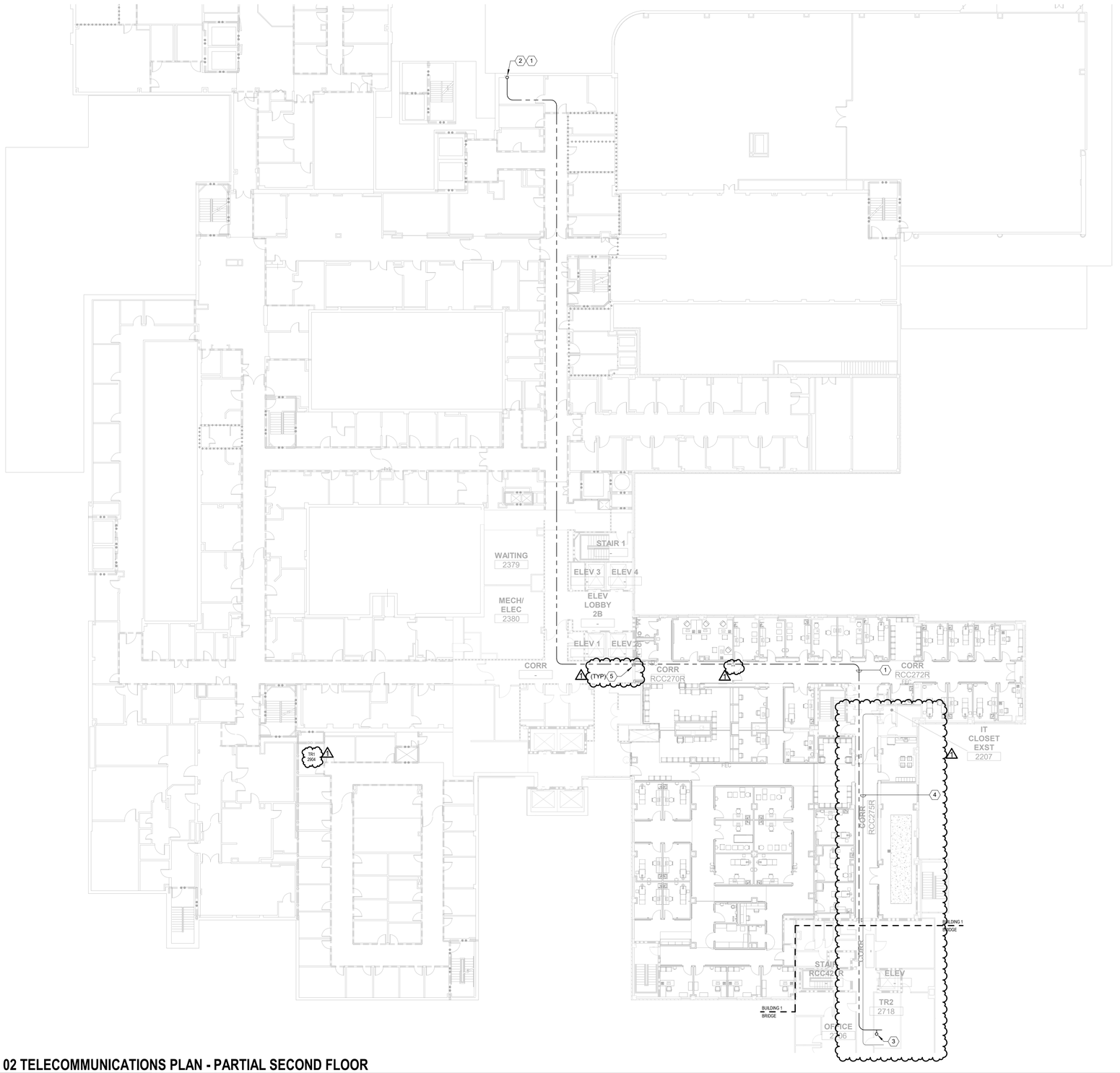
Issue Date: 11/06/2026 | Checked: WG | Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: T102.3

VA FORM 08-6231



TELECOMMUNICATIONS KEYNOTES

1 PROVIDE NEW BACKBONE FIBER FROM MCR EXISTING MDA FIBER PATCH PANEL TO EACH EXISTING TR ROOM FIBER PATCH PANEL PER SHEET 1/T411 BACKBONE CABLING DIAGRAM. FIBER TYPE TO BE EQUAL TO THAT OF THE DEMOLISHED FIBER. COORDINATE EXACT REQUIREMENTS WITH VA OI&T. FOLLOW EXISTING PATH AND ADJACENT FIBER RUNS. SUPPORT METHODS EQUAL TO ADJACENT FIBER RUNS. APPROXIMATE PATH. VERIFY IN FIELD. ACTUAL LOCATION PER FINAL EHRM CONSTRUCTION. CONTRACTOR TO ACCOMODATE FOR THIS CONTINGENCY. ANY DAMAGE TO THE EXISTING FIBER CABLE SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

2 TO THIRD FLOOR MAIN COMPUTER ROOM.

3 TO THIRD FLOOR LEVEL TR2 3718.

4 PROVIDE NEW TELECOMMUNICATIONS BONDING BACKBONE) CABLE FROM IT 2217 TO TR 2718.

5 (1) 1 1/4" SLEEVE.

N

1 **02 TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR**

1/16" = 1'-0"

0 8' 16' 32'

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
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U.S. Department of Veterans Affairs

Drawing Title: ICT - TELECOMMUNICATIONS PLAN - PARTIAL SECOND FLOOR

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

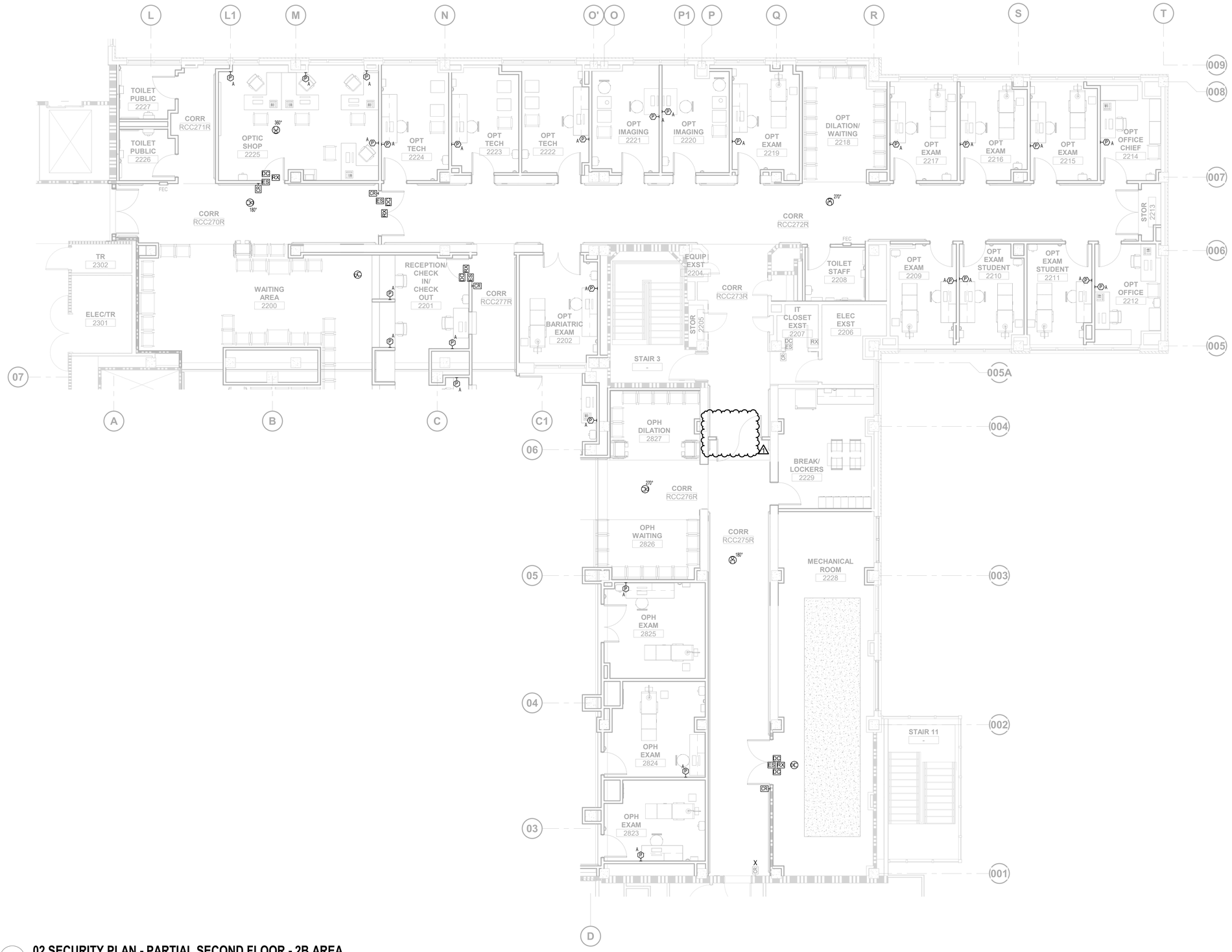
Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: T102

VA FORM 08-6231



SECURITY GENERAL NOTES

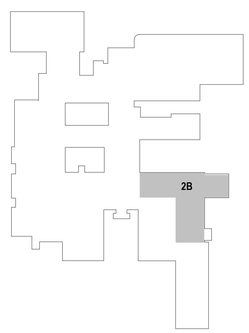
A. REFER TO SHEET 1/T102.3 FOR ACCESS CONTROLS PANEL LOCATION.

N

1 **02 SECURITY PLAN - PARTIAL SECOND FLOOR - 2B AREA**

3/16" = 1'-0"

0 8' 16' 24'



KEYPLAN

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ICT - SECURITY PLAN - PARTIAL SECOND FLOOR - 2B AREA

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

Drawn: JC

Project Number: 521-24-102

Building Number: #1

Drawing Number: TS102.2

VA FORM 08-6231

48-PORT COPPER PATCH PANEL SCHEDULE: E

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 1

PORT #	ROOM
1	DATA OPH EXAM 2807
2	DATA OPH EXAM 2807
3	DATA OPH EXAM 2807
4	DATA OPH EXAM 2807
5	DATA OPH EXAM 2820
6	DATA OPH EXAM 2820
7	DATA OPH EXAM 2820
8	DATA OPH EXAM 2820
9	DATA SPACE RCC274T
10	DATA SPACE RCC274T
11	DATA OPH IMAGING 2821
12	DATA OPH IMAGING 2821
13	DATA OPH IMAGING 2806
14	DATA OPH IMAGING 2806
15	DATA OPH IMAGING 2806
16	DATA OPH IMAGING 2806
17	DATA OPH IMAGING 2806
18	DATA OPH IMAGING 2806
19	DATA OPH IMAGING 2806
20	DATA OPH IMAGING 2806
21	DATA OPH IMAGING 2821
22	DATA OPH IMAGING 2821
23	DATA OPH IMAGING 2821
24	DATA OPH IMAGING 2821
25	DATA OPH IMAGING 2821
26	DATA OPH IMAGING 2821
27	DATA OPH IMAGING 2822
28	DATA OPH IMAGING 2822
29	DATA OPH IMAGING 2822
30	DATA OPH IMAGING 2822
31	DATA OPH IMAGING 2822
32	DATA OPH IMAGING 2822
33	DATA OPH IMAGING 2822
34	DATA OPH IMAGING 2822
35	DATA OPH IMAGING 2805
36	DATA OPH IMAGING 2805
37	DATA OPH IMAGING 2805
38	DATA OPH IMAGING 2805
39	DATA OPH IMAGING 2805
40	DATA OPH IMAGING 2805
41	DATA OPH IMAGING 2805
42	DATA OPH IMAGING 2805
43	DATA SPACE RCC274T
44	DATA SPACE RCC274T
45	DATA CORR RCC280R
46	DATA CORR RCC280R
47	DATA OPH EXAM 2823
48	DATA OPH EXAM 2823

48-PORT COPPER PATCH PANEL SCHEDULE: D

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 1

PORT #	ROOM
1	DATA WAITING AREA 2200
2	DATA WAITING AREA 2200
3	DATA WAITING AREA 2200
4	DATA WAITING AREA 2200
5	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
6	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
7	DATA WAITING AREA 2200
8	DATA OPH EXAM 2802
9	DATA OPH EXAM 2802
10	DATA OPH EXAM 2802
11	DATA OPH EXAM 2802
12	DATA OPH EXAM 2801
13	DATA OPH EXAM 2801
14	DATA OPH EXAM 2801
15	DATA OPH EXAM 2801
16	DATA CORR RCC282R
17	DATA CORR RCC282R
18	DATA OPH EXAM 2803
19	DATA OPH EXAM 2803
20	DATA OPH EXAM 2804
21	DATA OPH EXAM 2804
22	DATA OPH EXAM 2804
23	DATA OPH EXAM 2804
24	DATA OPH EXAM 2803
25	DATA OPH EXAM 2803
26	DATA OPH EXAM 2809
27	DATA OPH EXAM 2809
28	DATA OPH EXAM 2809
29	DATA OPH EXAM 2809
30	DATA OPH EXAM 2808
31	DATA OPH EXAM 2808
32	DATA OPH EXAM 2808
33	DATA OPH EXAM 2808
34	DATA OPH WORK AREA 2812
35	DATA OPH WORK AREA 2812
36	DATA CORR RCC282R
37	DATA CORR RCC282R
38	DATA SPACE RCC274S
39	DATA SPACE RCC274S
40	DATA SPACE RCC274S
41	DATA SPACE RCC274S
42	DATA SPACE RCC274S
43	DATA SPACE RCC274S
44	DATA SPACE RCC274S
45	DATA OPH WORK AREA 2819
46	DATA OPH WORK AREA 2819
47	DATA OPH WORK AREA 2819
48	DATA OPH WORK AREA 2819

48-PORT COPPER PATCH PANEL SCHEDULE: C

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 1

PORT #	ROOM
1	DATA OPH EXAM 2823
2	DATA OPH EXAM 2823
3	DATA OPH EXAM 2823
4	DATA OPH EXAM 2823
5	DATA OPH EXAM 2823
6	DATA OPH EXAM 2823
7	DATA OPH EXAM 2824
8	DATA OPH EXAM 2824
9	DATA OPH EXAM 2824
10	DATA OPH EXAM 2824
11	DATA OPH EXAM 2824
12	DATA OPH EXAM 2824
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19	DATA OPH EXAM 2825
20	DATA OPH EXAM 2825
21	DATA OPH EXAM 2825
22	DATA OPH EXAM 2825
23	DATA CORR RCC276R
24	DATA CORR RCC276R
25	DATA OPH DILATION 2827
26	DATA OPT OFFICE 2203
27	DATA OPT OFFICE 2203
28	DATA OPT OFFICE 2203
29	DATA OPT OFFICE 2203
30	DATA OPT BARIATRIC EXAM 2202
31	DATA OPT BARIATRIC EXAM 2202
32	DATA OPT BARIATRIC EXAM 2202
33	DATA OPT BARIATRIC EXAM 2202
34	DATA CORR RCC277R
35	DATA CORR RCC277R
36	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
37	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
38	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
39	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
40	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
41	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
42	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
43	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
44	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
45	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
46	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
47	DATA RECEPTION/ CHECK IN/ CHECK OUT 2201
48	DATA WAITING AREA 2200

48-PORT COPPER PATCH PANEL SCHEDULE: B

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 1

PORT #	ROOM
1	DATA OPT TECH 2224
2	DATA OPT TECH 2224
3	DATA OPT TECH 2224
4	DATA OPTIC SHOP 2225
5	DATA OPTIC SHOP 2225
6	DATA OPTIC SHOP 2225
7	DATA OPTIC SHOP 2225
8	DATA OPTIC SHOP 2225
9	DATA OPTIC SHOP 2225
10	DATA OPTIC SHOP 2225
11	DATA OPTIC SHOP 2225
12	DATA OPTIC SHOP 2225
13	DATA OPTIC SHOP 2225
14	DATA CORR RCC270R
15	DATA CORR RCC270R
16	DATA CORR RCC272R
17	DATA CORR RCC272R
18	DATA CORR RCC272R
19	DATA CORR RCC272R
20	DATA OPT OFFICE 2212
21	DATA OPT OFFICE 2212
22	DATA OPT OFFICE 2212
23	DATA OPT OFFICE 2212
24	DATA OPT OFFICE 2212
25	DATA OPT OFFICE 2212
26	DATA OPT EXAM STUDENT 2211
27	DATA OPT EXAM STUDENT 2211
28	DATA OPT EXAM STUDENT 2211
29	DATA OPT EXAM STUDENT 2211
30	DATA OPT EXAM STUDENT 2210
31	DATA OPT EXAM STUDENT 2210
32	DATA OPT EXAM STUDENT 2210
33	DATA OPT EXAM STUDENT 2210
34	DATA OPT EXAM 2209
35	DATA OPT EXAM 2209
36	DATA OPT EXAM 2209
37	DATA OPT EXAM 2209
38	DATA CORR RCC273R
39	DATA CORR RCC273R
40	DATA BREAK/ LOCKERS 2229
41	DATA BREAK/ LOCKERS 2229
42	DATA MECHANICAL ROOM 2228
43	DATA MECHANICAL ROOM 2228
44	DATA MECHANICAL ROOM 2228
45	DATA MECHANICAL ROOM 2228
46	DATA CORR RCC275R
47	DATA CORR RCC275R
48	DATA CORR RCC275R

48-PORT COPPER PATCH PANEL SCHEDULE: A

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 1

PORT #	ROOM
1	DATA OPT OFFICE CHIEF 2214
2	DATA OPT OFFICE CHIEF 2214
3	DATA OPT EXAM 2215
4	DATA OPT EXAM 2215
5	DATA OPT EXAM 2215
6	DATA OPT EXAM 2215
7	DATA OPT EXAM 2216
8	DATA OPT EXAM 2216
9	DATA OPT EXAM 2216
10	DATA OPT EXAM 2216
11	DATA OPT EXAM 2217
12	DATA OPT EXAM 2217
13	DATA OPT EXAM 2217
14	DATA OPT EXAM 2217
15	DATA OPT DILATION/ WAITING 2218
16	DATA OPT DILATION/ WAITING 2218
17	DATA OPT EXAM 2216
18	DATA OPT EXAM 2216
19	DATA OPT DILATION/ WAITING 2218
20	DATA OPT DILATION/ WAITING 2218
21	DATA OPT DILATION/ WAITING 2218
22	DATA OPT EXAM 2219
23	DATA OPT EXAM 2219
24	DATA OPT EXAM 2219
25	DATA OPT EXAM 2219
26	DATA OPT IMAGING 2220
27	DATA OPT IMAGING 2220
28	DATA OPT IMAGING 2220
29	DATA OPT IMAGING 2220
30	DATA OPT IMAGING 2220
31	DATA OPT IMAGING 2220
32	DATA OPT IMAGING 2221
33	DATA OPT IMAGING 2221
34	DATA OPT IMAGING 2221
35	DATA OPT IMAGING 2221
36	DATA OPT IMAGING 2221
37	DATA OPT IMAGING 2221
38	DATA OPT IMAGING 2221
39	DATA OPT IMAGING 2221
40	DATA OPT TECH 2222
41	DATA OPT TECH 2222
42	DATA OPT TECH 2222
43	DATA OPT TECH 2222
44	DATA OPT TECH 2223
45	DATA OPT TECH 2223
46	DATA OPT TECH 2223
47	DATA OPT TECH 2223
48	DATA OPT TECH 2224

48-PORT COPPER PATCH PANEL SCHEDULE: A

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 2

PORT #	ROOM
1	DATA OPH OFFICE 2813
2	DATA OPH OFFICE 2813
3	DATA OPH OFFICE 2813
4	DATA OPH OFFICE 2813
5	DATA OPH OFFICE 2814
6	DATA OPH OFFICE 2814
7	DATA OPH OFFICE 2814
8	DATA OPH OFFICE 2814
9	DATA OPH OFFICE-1 2815-1
10	DATA OPH OFFICE-1 2815-1
11	DATA OPH OFFICE-1 2815-1
12	DATA OPH OFFICE-1 2815-1
13	DATA OPH OFFICE 2816
14	DATA OPH OFFICE 2816
15	DATA OPH OFFICE 2816
16	DATA OPH OFFICE 2816
17	DATA OPT OFFICE CHIEF 2214
18	DATA OPT OFFICE CHIEF 2214
19	DATA TR2 2718
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
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32	
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43	
44	
45	
46	
47	
48	

48-PORT COPPER PATCH PANEL SCHEDULE: B

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 2

PORT #	ROOM
1	
2	
3	
4	
5	
6	
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9	
10	
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12	
13	
14	
15	
16	
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44	
45	
46	
47	
48	

48-PORT COPPER PATCH PANEL SCHEDULE: C

BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 2

PORT #	ROOM
1	
2	
3	
4	
5	
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7	
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9	
10	
11	
12	
13	
14	
15	
16	
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23	
24	
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26	
27	
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29	
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32	
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48-PORT COPPER PATCH PANEL SCHEDULE: D

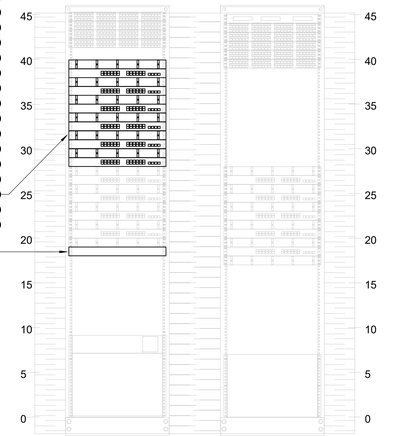
BUILDING: BRIDGE
LOCATION: TR2 2718
RACK #: 2

PORT #	ROOM
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
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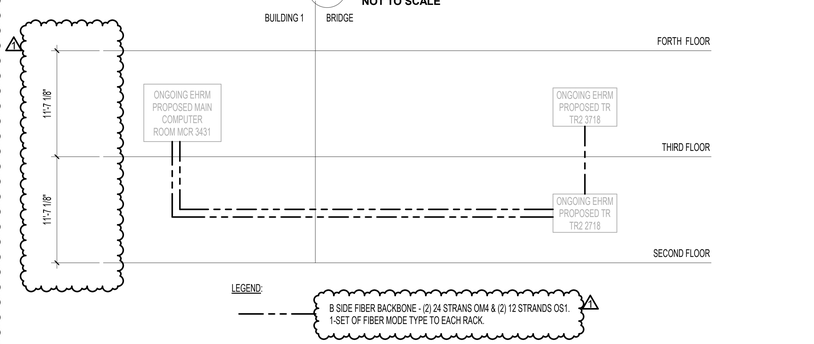
TR EQUIPMENT CAPACITY CALCULATION

EXISTING CONDITIONS PER ONGOING EHRM UPGRADE, TR2 2718 RACK SERVING 2K, 2B SCOPE OF WORK HAS A CAPACITY OF 432 PATCH PANEL PORTS IN TOTAL.
PER EHRM UPGRADE DESIGN, THE SCOPE OF WORK IS UTILIZING 413 OUT OF 432 PORTS. A REMAINING OF SPARE CAPACITY OF 19 PATCH PANEL PORTS.
THE EXISTING RACK CONTAIN 9 (24) PORT SWITCHES. TOTALING TO 216 SWITCHED PORTS.

THE RENOVATED 2K, 2B DESIGN WILL UTILIZE APPROXIMATELY 259 PORTS. TO PROVIDE (2) ADDITIONAL MANAGED SWITCHES TO SUPPORT THE 2K, 2B RENOVATION. UTILIZING THE AVAILABLE RACKS RU SPACE.



2 EXISTING RACK ELEVATION - 2ND FLOOR - TR2 2718
NOT TO SCALE



NOTES:
1. HALFTONE LINEWORK IS EXISTING TO REMAIN. DARK-TONE LINEWORK IS NEW WORK.
2. THIS IS AN ESTIMATED CABLE ROUTING DIAGRAM. TO BE CONFIRMED PER ONGOING EHRM UPGRADE PLANS.
3. FIBER TYPE OM4 AND OS1 TO MATCH PREVIOUSLY REMOLISHED CABLE. TO BE VERIFIED BY VA OIT.
4. CABLING SHALL BE INSTALLED IN CONDUIT TO THE AREA ABOVE THE ACCESSIBLE CEILING. CONFIRM IN FIELD WITH ADJACENT EXISITNG METHODS.
5. CABLING SHALL BE ROUTED IN NEW J-HOOKS ABOVE ACCESSIBLE CEILINGS. CONFIRM IN FIELD WITH ADJACENT EXISITNG METHODS.
6. ALL CABLING RUN EXPOSED ABOVE ACCESSIBLE CEILINGS SHALL BE PLENUM-RATED.

1 BACKBONE CABLING DIAGRAM
NOT TO SCALE

ADDENDUM #1	11/06/2026
ISSUE FOR BID	05/15/2026
100% CONSTRUCTION DOCUMENTS	3/16/2026
95% CONSTRUCTION DOCUMENTS	01/30/2026
65% DESIGN DEVELOPMENT RESUBMITTAL	12/01/2025
65% DESIGN DEVELOPMENT SUBMISSION	09/08/2025
Revisions:	Date:

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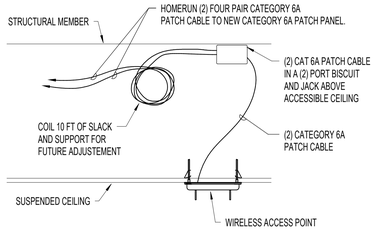
ARCHITECT/ENGINEER OF RECORD
BANCROFT ARCHITECTS + ENGINEERS
VA CONTRACT NO.36C24724C0036
1471 E Business Center Dr,
Mount Prospect, IL 60056
T: 847-952-9362
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Bancroft Project No. 23-135

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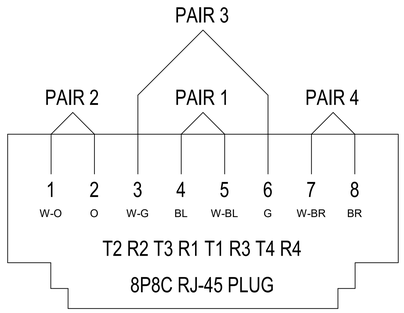
Drawing Title: ICT - TELECOMMUNICATIONS RISER DIAGRAM
Approved: Project Director
Phase: ISSUED FOR BID
FULLY SPRINKLERED
Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY
Location: BIRMINGHAM VAMC
Issue Date: 11/06/2026
Checked: WG
Drawn: JC
Project Number: 521-24-102
Building Number: #1
Drawing Number: T411

VA FORM 08-6231



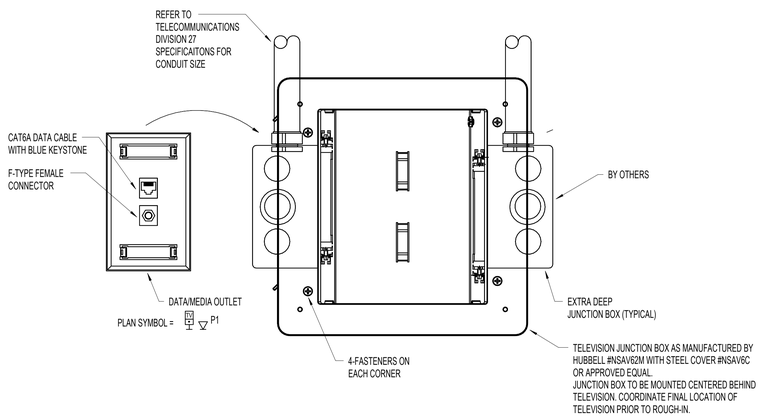
1 WIRELESS ACCESS POINT (WAP) DETAIL

NOT TO SCALE



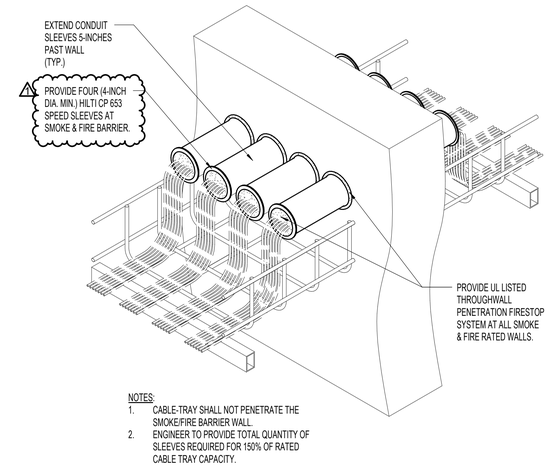
7 TELECOMMUNICATIONS T568B JACK WIRING DIAGRAM

NOT TO SCALE



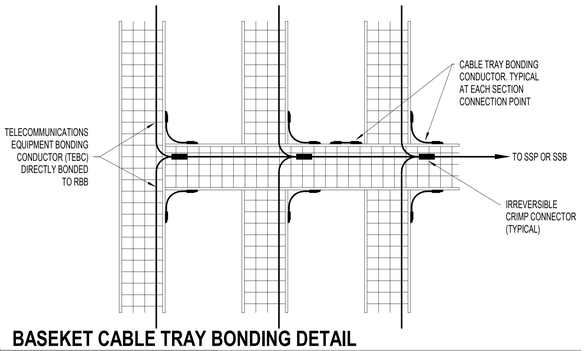
2 TELEVISION OUTLET ENCLOSURE DETAIL

NOT TO SCALE



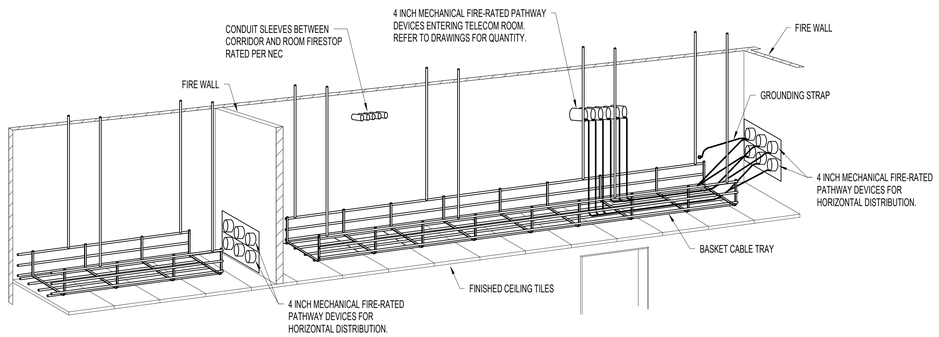
4 CABLE TRAY TRANSITION AT SMOKE & FIRE-RATED WALLS

NOT TO SCALE



3 BASEKET CABLE TRAY BONDING DETAIL

NOT TO SCALE



6 CABLE TRAY WITH FIRE WALL PENETRATIONS

NOT TO SCALE

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Revisions:	Date:

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VA CONTRACT NO.36C24724C0036
Bancroft Project No. 23-135

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Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ICT - DETAILS

Approved: Project Director

Phase: ISSUED FOR BID

FULLY SPRINKLERED

Project Title: RENOVATE WARDS 2K/2B FOR OPTOMETRY/OPHTHALMOLOGY

Location: BIRMINGHAM VAMC

Issue Date: 11/06/2026

Checked: WG

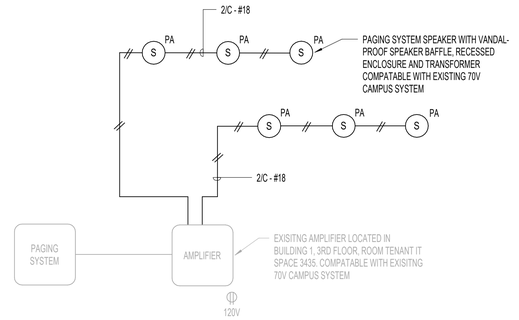
Drawn: JC

Project Number: 521-24-102

Building Number: #1

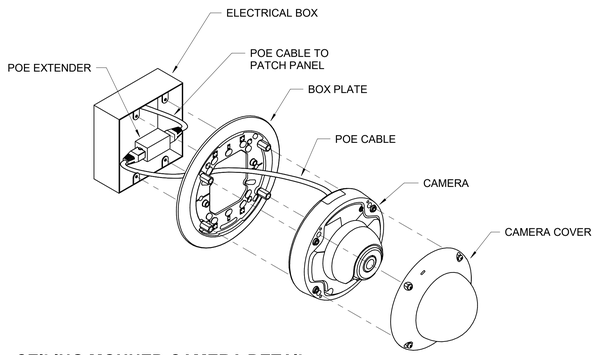
Drawing Number: T511

VA FORM 08-6231



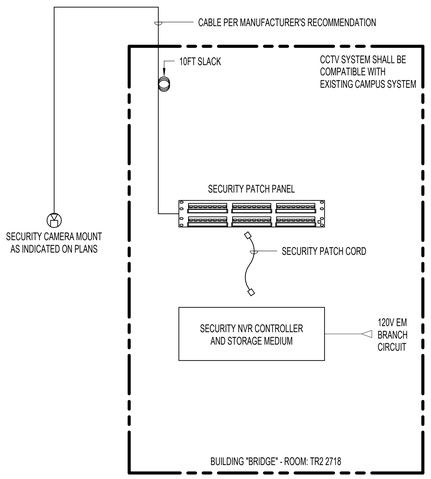
3 TYPICAL PAGING SYSTEM RISER

NOT TO SCALE



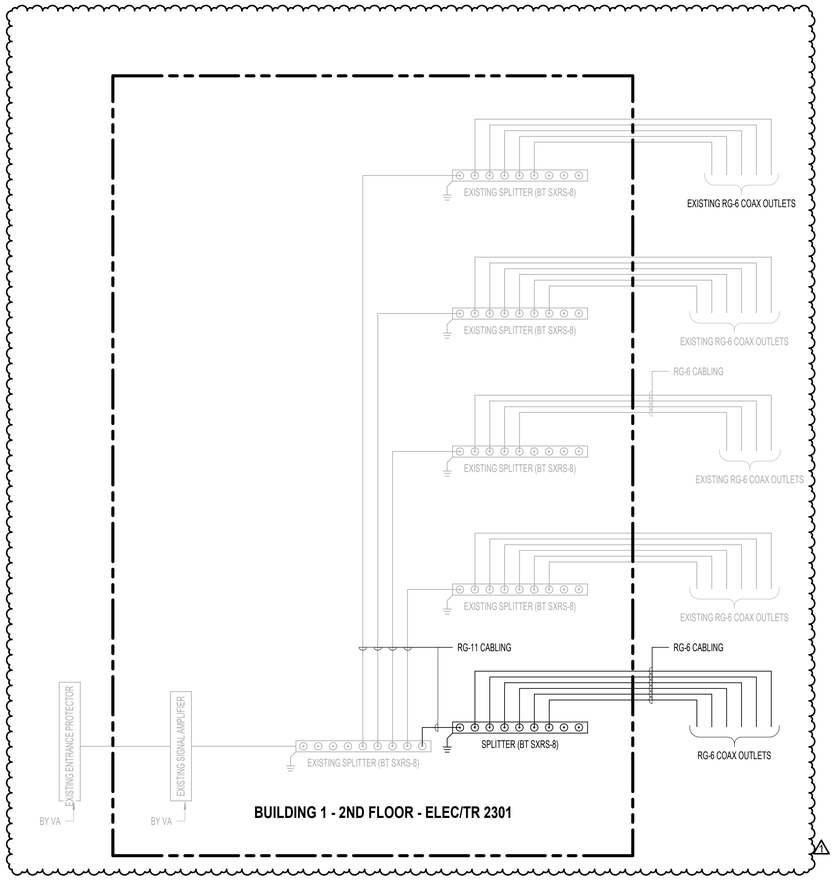
4 CEILING MOUNED CAMERA DETAIL

NOT TO SCALE



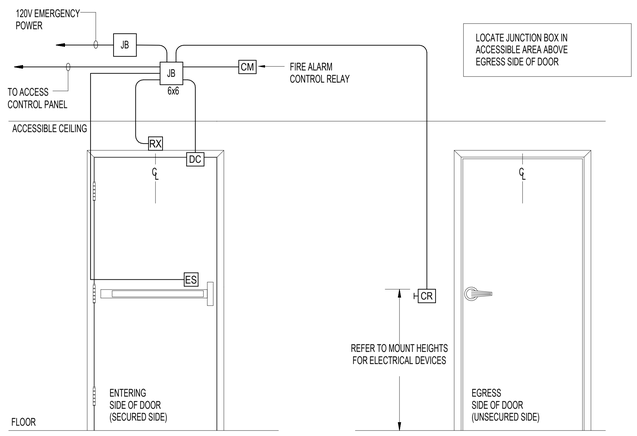
5 TYPICAL VIDEO SURVEILLANCE SYSTEM RISER DIAGRAM

NOT TO SCALE



2 TYPICAL CATV RISER DETAIL

NOT TO SCALE



NOTES:

A. WHERE INSTALLATION DOES NOT OCCUR WHERE THERE IS AN ACCESSIBLE CEILING ABOVE. CONDUITS SHALL HOME RUN TO THE NEAREST ACCESSIBLE CEILING OR TO A SECURITY PANEL.

B. DETAILS ARE REPRESENTATIVE OF TYPICAL INSTALLATION. VERIFY EXACT REQUIREMENTS WITH VA SECURITY VENDOR FOR ROUGH-IN AND POWER.

C. 3/4" CONDUIT MINIMUM.

D. REFER TO ARCHITECTURAL DRAWINGS FOR HARDWARE DOOR SCHEDULE.

ELECTRIC STRIKE KEY NOTES

1. RECESSED MAGNETIC DOOR CONTACT.
2. PROVIDE REQUEST TO EXIT MOTION.
3. ELECTRIC DOOR STRIKE. WIRE THROUGH DOOR TO STRIKE.
4. REQUEST TO EXIT PNEUMATIC PUSH BUTTON.
5. CARD READER. PROVIDE 4" SQUARE BOX WITH SINGLE GANG PLASTER-RING MOUNTED FLUSH WITH WALL.

1 SINGLE DOOR WITH ELECTRIC STRIKE DETAIL

NOT TO SCALE

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Drawn JC

Project Number 521-24-102

Building Number #1

Drawing Number T512

VA FORM 08-6231