

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE OF PAGES 1 2
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 11-Aug-2003	4. REQUISITION/PURCHASE REQ. NO. W26GLG-3199-2120	5. PROJECT NO.(If applicable) QU 42-6P	
6. ISSUED BY CONTRACTING OFFICE (CA/CW) US ARMY ENGR DIST NORFOLK ATTN: CENAO-SS-C 803 FRONT STREET NORFOLK VA 23510-1096	CODE DACA65	7. ADMINISTERED BY (If other than item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		X	9A. AMENDMENT OF SOLICITATION NO. DACA65-03-B-0016	
		X	9B. DATED (SEE ITEM 11) 11-Aug-2003	
			10A. MOD. OF CONTRACT/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
12. ACCOUNTING AND APPROPRIATION DATA (If required)				
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.				
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).				
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:				
D. OTHER (Specify type of modification and authority)				
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.				
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) AMENDMENT NO. 0001 to DACA65-03-B-0016, Renovate 3206, Fort Lee, VA				
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.				
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
		TEL: _____ EMAIL: _____		
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 11-Aug-2003	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

The following items are applicable to this modification:

CONTINUATION

Technical specifications and drawings are amended. Make appropriate changes in accordance.

SECTION 07840

FIRESTOPPING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E 84	(2001) Surface Burning Characteristics of Building Materials
ASTM E 119	(2000a) Fire Tests of Building Construction and Materials
ASTM E 814	(2002) Fire Tests of Through-Penetration Fire Stops
ASTM E 1399	(1997; R 2000) Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems

UNDERWRITERS LABORATORIES (UL)

UL 723	(1996; Rev thru Sep 2001) Test for Surface Burning Characteristics of Building Materials
UL 1479	(1994; Rev thru Aug 2000) Fire Tests of Through-Penetration Firestops
UL 2079	(1998) Tests for Fire Resistance of Building Joint Systems
UL Fire Resist Dir	(2001) Fire Resistance Directory (2 Vol.)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Firestopping Materials.

Detail drawings including manufacturer's descriptive data, typical details conforming to UL Fire Resist Dir or other details certified by another nationally recognized testing laboratory, installation instructions or UL listing details for a firestopping assembly in lieu of fire-test data or report. For those firestop applications for which no UL tested system is available through a manufacturer, a manufacturer's engineering judgment, derived from similar UL system designs or other tests, shall be submitted for review and approval prior to installation. Submittal shall indicate the firestopping material to be provided for each type of application. When more than 5 penetrations or construction joints are to receive firestopping, drawings shall indicate location and type of application.

SD-07 Certificates

Firestopping Materials.

Certificates attesting that firestopping material complies with the specified requirements. In lieu of certificates, drawings showing UL classified materials as part of a tested assembly may be provided. Drawings showing evidence of testing by an alternate nationally recognized independent laboratory may be substituted.

Installer Qualifications.

Documentation of training and experience.

Inspection.

Manufacturer's representative certification stating that firestopping work has been inspected and found to be applied according to the manufacturer's recommendations and the specified requirements.

1.3 GENERAL REQUIREMENTS

Firestopping shall consist of furnishing and installing tested and listed firestop systems, combination of materials, or devices to form an effective barrier against the spread of flame, smoke and gases, and maintain the integrity of fire resistance rated walls, partitions, floors, and ceiling-floor assemblies, including through-penetrations and construction joints and gaps. Through-penetrations include the annular space around pipes, tubes, conduit, wires, cables and vents. Construction joints include those used to accommodate expansion, contraction, wind, or seismic movement; firestopping material shall not interfere with the required movement of the joint. Gaps requiring firestopping include gaps between the curtain wall and the floor slab and between the top of the fire-rated walls and the roof or floor deck above.

1.4 STORAGE AND DELIVERY

Materials shall be delivered in the original unopened packages or containers showing name of the manufacturer and the brand name. Materials shall be stored off the ground and shall be protected from damage and exposure to elements. Damaged or deteriorated materials shall be removed from the site.

1.5 INSTALLER QUALIFICATIONS

The Contractor shall engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having the necessary staff, training, and a minimum of 3 years experience in the installation of manufacturer's products per specified requirements. A manufacturer's willingness to sell its firestopping products to the Contractor or to an installer engaged by the Contractor does not in itself confer qualification on the buyer. The Installer shall have been trained by a direct representative of the manufacturer (not distributor or agent) in the proper selection and installation procedures.

1.6 COORDINATION

The specified work shall be coordinated with other trades. Firestopping materials, at penetrations of pipes and ducts, shall be applied prior to insulating, unless insulation meets requirements specified for firestopping. Firestopping materials at building joints and construction gaps shall be applied prior to completion of enclosing walls or assemblies.

Cast-in-place firestop devices shall be located and installed in place before concrete placement. Pipe, conduit or cable bundles shall be installed through cast-in-place device after concrete placement but before area is concealed or made inaccessible.

PART 2 PRODUCTS

2.1 FIRESTOPPING MATERIALS

Firestopping materials shall consist of commercially manufactured, asbestos-free products complying with the following minimum requirements:

2.1.1 Fire Hazard Classification

Material shall have a flame spread of 25 or less, and a smoke developed rating of 50 or less, when tested in accordance with ASTM E 84 or UL 723. Material shall be an approved firestopping material as listed in UL Fire Resist Dir or by a nationally recognized testing laboratory.

2.1.2 Toxicity

Material shall be nontoxic to humans at all stages of application.

2.1.3 Fire Resistance Rating

Firestopping will not be required to have a greater fire resistance rating than that of the assembly in which it is being placed.

2.1.3.1 Through-Penetrations

Firestopping materials for through-penetrations, as described in paragraph GENERAL REQUIREMENTS, shall provide "F" fire resistance ratings in accordance with ASTM E 814 or UL 1479. Fire resistance ratings shall be as follows:

- a. Penetrations of Fire Resistance Rated Walls and Partitions: F Rating = Rating of wall or partition being penetrated.

2.1.3.2 Construction Joints and Gaps

Fire resistance ratings of construction joints, as described in paragraph GENERAL REQUIREMENTS, and gaps such as those between floor slabs or roof decks and curtain walls shall be the same as the construction in which they occur. Construction joints and gaps shall be provided with firestopping materials and systems that have been tested per ASTM E 119 or UL 2079 to meet the required fire resistance rating. Systems installed at construction joints shall meet the cycling requirements of ASTM E 1399 or UL 2079.

PART 3 EXECUTION

3.1 PREPARATION

Areas to receive firestopping shall be free of dirt, grease, oil, or loose materials which may affect the fitting or fire resistance of the firestopping system. For cast-in-place firestop devices, formwork or metal deck to receive device prior to concrete placement shall be sound and capable of supporting device.

3.2 INSTALLATION

Firestopping material shall completely fill void spaces regardless of geometric configuration, subject to tolerance established by the manufacturer. Firestopping systems for filling floor voids 4 inches or more in any direction shall be capable of supporting the same load as the floor is designed to support or shall be protected by a permanent barrier to prevent loading or traffic in the firestopped area. Firestopping shall be installed in accordance with manufacturer's written instructions. Tested and listed firestop systems shall be provided in the following locations, except in floor slabs on grade:

- a. Penetrations of duct, conduit, tubing, cable and pipe through floors and through fire-resistance rated walls, partitions, and ceiling-floor assemblies.
- b. Penetrations of vertical shafts such as pipe chases, elevator shafts, and utility chutes.
- c. Gaps at the intersection of floor slabs and curtain walls, including inside of hollow curtain walls at the floor slab.

- d. Gaps at perimeter of fire-resistance rated walls and partitions, such as between the top of the walls and the bottom of roof decks.
- e. Construction joints in floors and fire rated walls and partitions.
- f. Other locations where required to maintain fire resistance rating of the construction.

3.2.1 Insulated Pipes and Ducts

Thermal insulation shall be cut and removed where pipes or ducts pass through firestopping, unless insulation meets requirements specified for firestopping. Thermal insulation shall be replaced with a material having equal thermal insulating and firestopping characteristics.

3.2.2 Fire Dampers

Fire dampers shall be installed and firestopped in accordance with Section 15895 AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM.

3.3 INSPECTION

Firestopped areas shall not be covered or enclosed until inspection is complete and approved. A manufacturer's representative shall inspect the applications initially to ensure adequate preparations (clean surfaces suitable for application, etc.) and periodically during the work to assure that the completed work has been accomplished according to the manufacturer's written instructions and the specified requirements.

-- End of Section --

SECTION 10153

TOILET PARTITIONS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191 (1998) ADA Accessibility Guidelines for -
Buildings and Facilities

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-60003 (Basic) Partitions, Toilet, Complete

1.2 SYSTEM DESCRIPTION

Toilet partition system, including toilet enclosures, room entrance screens, and urinal screens, shall be a complete and usable system of panels, hardware, and support components. The Contractor shall comply with EPA requirements in accordance with Section 01670 RECYCLED / RECOVERED MATERIALS. The partition system shall be provided by a single manufacturer, and shall be a standard product as shown in the most recent catalog data. The partition system shall be as shown.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Toilet Partition System

Drawings showing plans, elevations, details of construction, hardware, reinforcing, fittings, mountings, and anchorings.

SD-03 Product Data

Toilet Partition System

Manufacturer's technical data and catalog cuts including installation and cleaning instructions.

SD-04 Samples

Toilet Partition System

Manufacturer's standard color charts and color samples.

1.4 DELIVERY, STORAGE, AND HANDLING

Components shall be delivered to the jobsite in the manufacturer's original packaging with the brand, item identification, and project reference clearly marked. Components shall be stored in a dry location that is adequately ventilated; free from dust, water, or other contaminants; and shall have easy access for inspection and handling.

1.5 WARRANTY

Manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period shall be provided.

PART 2 PRODUCTS

2.1 TOILET ENCLOSURES

Toilet enclosures shall conform to CID A-A-60003, Type I, Style A, floor supported. Width, length, and height of toilet enclosures shall be as shown. Finish surface of panels shall be solid phenolic. Panels indicated to receive toilet paper holders or grab bars as specified in Section 10800A TOILET ACCESSORIES, shall be reinforced for mounting of the items required.

Grab bars shall withstand a bending stress, shear stress, shear force, and a tensile force induced by 250 lbf. Grab bars shall not rotate within their fittings.

2.2 URINAL SCREENS

Urinal screens shall conform to CID A-A-60003, Type III, Style A, floor supported. Finish surface of screens shall be solid phenolic. Width and height of urinal screens shall be as shown. Secure wall hung urinal screens with a minimum of three wall stirrup brackets.

2.3 HARDWARE

Hardware for the toilet partition system shall conform to CID A-A-60003 for the specified type and style of partitions. Hardware finish shall be highly resistant to alkalies, urine, and other common toilet room acids. Latching devices and hinges for handicap compartments shall comply with 36 CFR 1191 and shall be stainless steel door latches that operate without either tight grasping or twisting of the wrist of the operator.

2.4 COLORS AND FINISHES

2.4.1 Colors

Color of finishes for toilet partition system components shall be manufacturer's standard.

2.4.2 Finishes No.4 and No. 5

Solid plastic fabricated of polymer resins (polyethylene) formed under high pressure rendering a single component section not less than one inch thick.

Colors shall extend throughout the panel thickness. Exposed finish surfaces shall be smooth, waterproof, non-absorbent, and resistant to staining and marking with pens, pencils, or other writing devices. Solid plastic partitions shall not show any sign of deterioration when immersed in the following chemicals and maintained at a temperature of 80 degrees F for a minimum of 30 days:

Acetic Acid (80 percent)	Hydrochloric Acid (40 percent)
Acetone	Hydrogen Peroxide (30 percent)
Ammonia (liquid)	Isopropyl Alcohol
Ammonia Phosphate	Lactic Acid (25 percent)
Bleach (12 percent)	Lime Sulfur
Borax	Nicotine
Brine	Potassium Bromide
Caustic Soda	Soaps
Chlorine Water	Sodium Bicarbonate
Citric Acid	Trisodium Phosphate
Copper Chloride	Urea; Urine
Core Oils	Vinegar

PART 3 EXECUTION

3.1 INSTALLATION

Toilet partitions shall be installed straight and plumb with uniform clearance of 1/2 inch between pilasters and panels; 1 inch between pilasters and walls; and not more than 3/16 inch between pilasters and doors, in accordance with approved manufacturer's instructions with horizontal lines level and rigidly anchored to the supporting construction.

Where indicated, anchorage to walls shall be by expansion anchors. Drilling and cutting for installation of anchors shall be at locations that will be concealed in the finished work. In the finished work, conceal evidence of drilling in floors and walls. Screws and bolts shall be stainless steel.

3.2 ADJUSTING AND CLEANING

Doors shall have a uniform vertical edge clearance of approximately 3/16 inch and shall rest open at approximately 30 degrees when unlatched. Baked enamel finish shall be touched up with the same color of paint that was used for the finish. Toilet partitions shall be cleaned in accordance with approved manufacturer's instructions and shall be protected from damage until accepted.

-- End of Section --

SECTION 13815
ENERGY MONITORING AND CONTROL SYSTEMS (EMCS)
EXTENSION TO EXISTING SYSTEM

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250 (1997) Enclosures for Electrical Equipment (1000 Volts Maximum)

UNDERWRITERS LABORATORIES (UL)

UL 864 1996 Control Units for Fire-Protection Signaling Systems

1.2 SCOPE

Furnish and install new and/or perform modifications to the existing Honeywell Excel Plus network of Direct Digital Control (DDC) processors in Building 3206 and fully integrate these new system components into the existing basewide energy management control system (EMCS) network. Honeywell shall provide all installation, labor and material for mounting and wiring of all control devices under this proposal except as noted below and in accordance with specifications. Honeywell shall provide all software and hardware engineering and field technical supervision and checkout labor and central monitoring system graphic modifications and programming for a complete fully functional EMCS/DDC system.

1.3 SYSTEM DESCRIPTION

1.3.1 General

Ft. Lee has an existing Honeywell Delta Network Graphic Operator Interface Control System. If required, an interface shall be provided to the existing Honeywell Delta Network Graphic Operator Interface Control System.

1.3.2 System

The monitoring and control system as specified herein shall be provided in its entirety by this Contractor. It shall be fully capable of interfacing with the existing Honeywell computerized system. The Contractor shall base his bid on the specific performance

characteristics of the monitoring and control system as described in the contract specifications and shown on the contract drawings.

1.4 GENERAL REQUIREMENTS

- a. The Contractor shall furnish all necessary tools, equipment, materials, and labor to install on-line, real time, monitoring and control system extensions as described hereinafter and as shown on the contract plans and specifications. The system shall be fully integrated and installed as a package that is compatible with and will interface with the present system. The extensions shall include all computer software and hardware, transmission equipment, wiring, piping, DDC panels, labor and supervision up to the DDC DTC. Adjustment and calibration shall be provided as a prerequisite to the start of warranty and maintenance service specified hereafter.
- b. The Contractor shall have an office within 50 miles of the site staffed with factory-trained personnel fully certified to install and service all systems components. All system commissioning and service shall be performed under the direct supervision of technicians regularly employed by the manufacturer.
- c. The Contractor shall have a 5-year successful history in the design and installation of fully computerized control systems, 3 years of which shall be in computerized building systems similar in performance to the one specified herein and shall produce evidence of this history as a condition of acceptance and approval prior to award.
- d. If telephone communication is utilized, the Contractor shall provide the Government with a schematic drawing showing required number of telephone pairs to the building. Telephone pairs will be provided by the Government to a telephone terminal cabinet in the building.
- e. The installation shall include computer programming, installation drawings, central and remote equipment, cable and wiring for the terminal unit control transmission network, relays, field wiring, labor, supervision, calibration, checkout and training necessary for an operational system up to the DDC DTC (see plans). Computer programming shall include all necessary programming of central EMCS control as required to provide a complete operating system.
- f. System components, microprocessors and programming shall be year 2000 compliant.
- g. The contractor shall provide all necessary coordination with mechanical, plumbing, electrical, etc. contractors, and the equipment these contractors will provide, to insure the installation of a complete and operational EMCS/DDC control system.

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300

SUBMITTALS:

SD-01 Data

Equipment Data; GA

Submit drawings and lists of materials and equipment to be incorporated in the work. A complete electrical connection diagram for each electrically controlled component, furnished under this division, having more than one automatic or manual control device shall be provided. Wiring diagrams shall identify each component and one diagram shall show all interconnected or interlocked components. The lists of materials and equipment shall be supported by sufficient descriptive materials such as catalogs, cuts, diagrams, and other data published by the manufacturer to demonstrate conformance to the specification requirements; model numbers alone will not be acceptable. The data shall include the address and name of the nearest service and maintenance organization that regularly stocks repair parts.

SD-04 Drawing

Systems Drawings; GA.

The systems drawings shall include the following:

- a. A drawing index.
- b. A list of symbols
- c. A series of drawings for each HVAC control system using abbreviations, symbols, nomenclature and identifiers as shown on the contract drawings. Each control-system element on a drawing shall have a unique identifier as shown. The submittal shall include specification sheets for all hardware and software elements including engineering and performance data, and schematic layouts, and shall indicate that the speed and accuracy will match that of the present system.

SD-08 Statements

Certificates of Compliance; GA

Certificates of compliance attesting that all materials to be incorporated in the work meet the requirements specified shall be furnished in accordance with the General Provisions.

SD-19 Operation and Maintenance Manuals

Operation and Maintenance Manuals; GA

Provide six complete copies of the manuals bound in hardback, loose leaf binders, to the Government after acceptance. Provide manuals for new types of EMCS equipment not previously used as part of the existing Honeywell EMCS.

1.6 WORKMANSHIP

a. Materials and equipment shall be installed in accordance with the approved recommendations of the manufacturer to conform to the contract documents. The installations shall be accomplished by workmen skilled in this type of work.

1.7 CONTRACT COMPLETION, GUARANTEE AND SERVICE

a. All components, parts, and assemblies shall be guaranteed against defects in workmanship and materials for a period of one year after acceptance of the entire energy control system. In addition, the Contractor shall provide operation instructions and system maintenance training as described hereinafter for the primary system as well as the subsystems.

b. Expressed warranties are conditionally based upon the requirement that the item or items covered within the guaranteed are used and maintained in accordance with the manufacturer's recommendations.

PART 2 PRODUCTS

2.1 SYSTEM

Furnish and install the extension to the present multiprocessor, solid state digital centralized computer energy control system to monitor, control and evaluate all points scheduled, shown and specified.

2.2 CENTRAL HARDWARE AND REMOTE NETWORK CONTROL PANELS, LOCAL CONTROL PANELS, TERMINAL UNIT CONTROLLERS AND DDC PANELS

a. Furnish and install all energy control equipment and apparatus required to supplement the existing system hardware, including but not limited to:

LAN capacity

Central processor capacity

DDC panels

Terminal Unit Controllers

Relays and cabinets

Modems, translators, cabinet and miscellaneous equipment as required to cause the work of this contract to interface with the present system.

b. Indications on the drawings of exact quantities of any items of hardware are intended to show the quantities believed to be required for the extensions to be made to the present energy control system. It is recognized that the manufacturer and supplier of the equipment may be able to provide these items with configurations that will require greater or lesser quantities than those indicated in order to accomplish the desired results. The Contractor shall furnish and install all necessary apparatus, wiring, connections and arrangements as limited above, necessary to incorporate the required items of hardware into the system so as to accomplish the specified results.

c. Furnish NEMA 250 Type 12, panel for DDC panels with hinged door and hasp. Fort Lee DEH shall provide a padlock for each panel enclosure.

d. The real time clock shall have one hundred year calendar with automatic leap year to provide time of day, day of week and date.

e. All DDC inputs shall be of the universal type to handle industry standard current, voltage, resistance or open and closed contacts in any mix. Programmable intermediate ranges and linearization tables shall be provided for sensor types listed under the sensor section of this specification. For all RTD type sensors of 1000 ohms or less, contractor shall individually calibrate each input point via precision decade box to compensate errors.

f. DDC shall accommodate both digital and true outputs of voltage (0-12V) and current (4-20ma). All analog outputs shall have a minimum incremental resolution of .5 percent of the full operating range of the valve or damper (not .5 percent of 0-12V output). Zero and maximum output voltage or current values, however, shall be used for shutdown and closeoff modes. For troubleshooting and load analysis, the value of each analog output shall be available in the database for trending and display.

g. DDC packaging shall be such that complete installation and check out of field wiring can be done prior to the installation of electronics boards. All board terminations are to be made via plug in connections to facilitate trouble shooting repair and replacement. The complete DDC including accessory device such as relay, power supplies, etc., shall factory mounted, wired and housed in a steel enclosure.

h. DDC shall be equipped with diagnostic LED indicators for transmit, receive, power up test, power up fail, power up test OK and bus error. Each digital output point shall have a status light on the face of the DDC enclosure.

i. DDC shall operate on a stand alone basis; all EMCS and control software shall be resident in the DDC.

j. DDC shall be capable of interfacing with the existing Honeywell Graphic Operator Interface Central Computer. Examples of required interface include start/stop, status, set point adjustment, and monitoring of data points by the existing or new central computer.

k. All microprocessor based systems shall be year 2000 compliant.

l. DTC cabinets are not required if the same manufacturer performs the work required by Section 15951A DIRECT DIGITAL CONTROL FOR HVAC. All information shall be seamlessly interfaced back to Building 6220.

2.3 WIRE AND CABLE WORK

All electrical wiring shall conform to the requirements of Section 16415 ELECTRICAL WORK, INTERIOR. Electrical wiring shall include but not be limited to:

a. Transmission cables conducting signals from DDC panels to telephone terminals, cabinets, central processing units, inside buildings and underground.

b. 120 volt wiring for power supplies to data gathering panels, relays and as otherwise may be required.

c. Terminal unit controller wiring including transmission to the DDC panels, wiring of terminal unit control devices and terminal unit controller sensors.

d. Input/output wiring from DDC panels to Data Terminal Cabinets (DTC).

e. Wires and cables shall be:

1. Transmission cables inside buildings shall be twisted with between 5 and 12 twists per foot, #18 to #24 AWG, no more than 22 picofarads per foot measured in free air, and having insulation good for 300 volts minimum.

2. Multiconductor cables inside buildings for general use shall be 2 or 3-wire twisted cables with between 5 or 12 twists per foot #16 or #18 AWG, no more than 20 picofarads per foot for pairs or 35 picofarads for triplets measured in free air, and having insulation good for 600 volts minimum.

3. All work installing conduits, terminal strips and cabinets shall be done only in coordination with the personnel of the Fort Lee Signal Office and under supervision of the Contracting Officer. Arrangements shall be made in advance with the Chief of the Signal Officer prior to commencing any such work. Interference in any portion of the communication system at Fort Lee shall meet the requirements of the Signal Officer. All connections to telephone equipment shall be made only as directed by designated Signal Office personnel.

2.4 DATA TRANSMISSION MEDIA (DTM)

2.4.1 General

The Contractor shall provide DTM. The DTM will not include MODEMs. The DTM shall consist of two (2) phone lines from EMCS central in Building 6220 to telephone backboard in the building. Test all DTM 30 days after installation and no more than 90 days prior to the Contractor's need date and furnish reports to the Government noting any deficiencies. Provide overvoltage and surge protection as specified. If available, Ethernet communication is acceptable.

2.4.2 DTM Characteristics

Performance characteristics of the Contractor furnished DTM are equal to those existing DTM serving the EMCS.

2.5 APPLICATIONS PROGRAMS

Perform all functions specified in the I-O summary tables by use of the appropriate application programs.

2.6 ACCEPTANCE AND WARRANTY PROCEDURES

- a. The warranty shall cover a period of 12 months and shall formally transmitted within 15 calendar days of completion of all work and operational programming, to the Contracting Officer, designating addresses and telephone numbers for service. The Contracting Officer will designate a resident Contracting Officer and Contracting Officer's representative for administration of the warranty. The warranty shall become effective upon acceptance of the entire system. The acceptance of the entire system will be upon completion of all construction, training and operational testing covered in the contract and conclusion of the transfer inspection.
- b. Submittal data relevant to point index, functions, limits, sequences, interlocks, logs, software routines and associated parameters, and other pertinent information for the operating system and data base shall be forwarded from the Contractor to the Contracting Officer. Approved software packages shall be entered into the central computer and debugged. Prior to on-line operation, a complete demonstration and read out of the computer real-time responsibilities of surveillance and command shall be performed in the presence of the Contracting Officer. This demonstration having satisfactorily met previously approved submittals, it shall have the Contracting Officer's written acceptance, thereby allowing commissioning of the EMCS for on-line operation.
- c. Upon successful completion of system generation, the Contracting Officer shall be requested in writing to inspect and approve the satisfactory operation of the automation system, subsystem and accessories.

2.7 VARIABLE AIR VOLUME (VAV) TERMINAL UNIT CONTROLS & CONSTANT AIR VOLUME (CAV) TERMINAL UNIT CONTROLS

The terminal units shall be as specified in Section 15895 AIR SUPPLY, DISTRIBUTION, VENTILATION AND EXHAUST SYSTEM. Terminal unit controls shall consist of individual box controllers which shall be fully interfaced to the control system through dedicated DDC panels. The terminal box controllers shall be interfaced to the system through the DDC panel that controls the AHU serving that box. A wall module compatible with the terminal box controllers will control temperature setpoint, and occupied/unoccupied override mode.

2.7.1 Box Control Device

Controls for pressure independent boxes shall consist of a velocity-sensing device in the primary air entering the box, a room temperature sensing element, a damper actuator, and an adjustable microprocessor-based box controller. Each controller shall operate a damper for cooling. Actuator shall open or close the device to which it is applied within 6 minutes. Terminal unit controls shall meet the requirements of UL 916 and 47 CFR 15. Controls for pressure independent boxes with supply fans shall consist of a velocity-sensing device in the primary air entering the box, a room temperature sensing element, an adjustable microprocessor-based VAV box controller, a damper with actuator, and a duct pressure switch to operate the supply fan. Each controller shall operate a damper for cooling and a hot water duct coil for heating. Terminal unit controls shall meet the requirements of UL 916 and 47 CFR 15. Each VAV box controller shall have a provision for occupancy overrides. Based upon the contact status of a manual switch in the wall mounted space temperature sensor, the VAV box controller shall override set back control points as allowed by EMCS.

PART 3 EXECUTION

3.1 EXECUTION

3.1.1 Installation

Install all system components and appurtenances in accordance with the manufacturer's recommendations and as shown. Provide all necessary interconnections, services and adjustments required for a complete operable system. All electrical work shall be in accordance with NEPA 70 and as specified. Provide instrumentation and communications grounding as necessary to preclude ground loops and noise from adversely affecting system operation.

3.1.2 Programming

Install necessary firmware and software, enter all turning constants, parameters. Checkout and debug all programs. Document all software and archive as directed by Ft.

Lee EMCS personnel. Provide all necessary firmware and software necessary to provide complete EMCS control at base central control.

3.1.3 Graphics

Provide a separate graphic for each control system. Provide floor plan graphics with associated space points. Provide graphic links using terminal unit location on floor plan graphic to penetrate to individual room graphic.

3.1.4 DDC Panels

The Contractor will provide DDC panels with NEMA 12 enclosures and lightning protectors. Contractor shall receive and store the DDC panels and protect them from damage until installation. Contractor shall install the DDC panel as directed by the manufacturer's recommended installation procedures and shall protect the installed panels from construction damage.

3.1.5 Summary Tables

Use I-O summary tables in conjunction with the drawings to identify the hardware and software required for each building and system. It is not the intent of the specification to identify individual point requirements for a particular system. The I-O summary table shall always take precedence over the specification in defining point requirements.

-- End of Section --



FROEHLING & ROBERTSON, INC.
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS
ENGINEERS • LABORATORIES
"OVER ONE HUNDRED YEARS OF SERVICE"

LIMITED ASBESTOS SURVEY REPORT

Prepared for:
Ms. Dawn Kritzer
Project Manager
Hankins and Anderson
1604 Santa Rosa Road
Richmond, Virginia 23229

Regarding:
Limited Asbestos Survey
Building 3206
Fort Lee, Virginia
F&R Project # E54-039E
H&A Project # 379651

Prepared by:
FROEHLING & ROBERTSON, INC.
3015 Dumbarton Road
Richmond, Virginia 23261
(804) 264-2701

May 28, 2003

Prepared by:

Chadwick Bowman
Industrial Hygienist
Environmental Services

Reviewed by:

Christopher Chapman, CIH
Senior Industrial Hygienist
Environmental Services

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1.0 INTRODUCTION

As authorized by Hankins and Anderson, Inc., Froehling & Robertson, Inc. (F&R) personnel performed a limited sampling of suspect asbestos-containing materials at the Building 3206, Fort Lee, Virginia, on May 22, 2003. The additional testing was performed on the roof only and was in conjunction with planned renovation work occurring in the building.

2.0 GENERAL BACKGROUND INFORMATION

2.1 Asbestos

The term "asbestos" refers to a group of naturally occurring, fibrous minerals that are commercially mined throughout the world, primarily in Canada, Russia, and South Africa. Asbestos has been used in hundreds of products. Collectively, these products are referred to as asbestos-containing materials (ACM's). Asbestos gained wide use because it is plentiful, readily available, low in cost, and because of its unique properties - it does not burn, is strong, conducts heat and electricity poorly, and is resistant to chemical corrosion.

2.2 Project Scope

F&R personnel conducted a limited asbestos survey at the Building 3206, in general accordance with U.S. EPA regulations.

Building 3206 is a three-story, brick/CMU structure with a built-up roof. It is F&R's understanding of the project that the renovations are to be conducted in Building 3206. The work to be performed involves repair and/or upgrade of various mechanical and electrical systems, and miscellaneous architectural improvements including the replacement of all interior floor, wall, and ceiling finishes.

3.0 PROCEDURES

3.1 Asbestos

For this project, a visual survey for asbestos was conducted on the roof of the building. F&R collected a total of 6 samples of materials that may be impacted by the planned renovations. These samples included roof and roof flushing materials.

This additional testing was performed as a supplement to F&R's reports dated 12/10/98 and 4/5/99.

All samples were collected by a Virginia Licensed Asbestos Inspector and submitted to Environmental Hazards Services' NVLAP Accredited and Virginia Licensed Asbestos



Laboratory, located in Richmond, Virginia. Samples were analyzed using Polarized Light Microscopy (PLM) following EPA Method 600/R-93/116.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Asbestos Containing Materials – Findings and Recommendations

Asbestos was detected in two samples collected of black roof flashing and one sample collected of black exhaust fan flashing located on the roof. These materials are non-friable and in good condition. F&R recommends that all black roof flashing and all black exhaust fan flashing be assumed to contain asbestos. Prior to the renovation, it is recommended that these materials be removed by a Virginia Licensed Asbestos Abatement Contractor. All persons entering the building and outside contractors should be warned not to disturb this material in any way.

Asbestos Sample Data:

Sample Number	Sample Type	Sample Location	Analytical Results
1	Built-up roofing	Roof	NAD
2	Built-up roofing	Roof	NAD
3	Roof sealing	Roof	NAD
4	Roof flashing	Roof	12% Chrysotile
5	Exhaust fan flashing	Roof	15% Chrysotile
6	Roof flashing	Roof	17% Chrysotile

NAD – No Asbestos detected

This survey was limited to areas and materials specifically identified by Hankins & Anderson in the Basis of Design Submittal. It is possible that other asbestos-containing materials are present in areas that were not surveyed, or behind solid walls or ceilings. Any suspect materials that were not sampled as part of this survey should be assumed to contain asbestos.

5.0 APPLICABLE REGULATIONS

5.1 OSHA Regulations

Positive and negative results are based on the US Department of Housing and Urban Development Guidelines. It is important to note that if a component is negative based on the HUD standard, it may still contain concentrations of lead in the paint, which when disturbed, may generate lead dust greater than the maximum exposure concentration of 30 micrograms per cubic millimeter established by the OSHA "Lead Exposure in



Construction Rule (29 CFR 1926.62).” The OSHA standard gives no guidance on acceptable levels of lead in paint at which no exposure to airborne lead (above the action level) would be expected. Rather, OSHA defines airborne concentrations, and references specific types of work practices and operations from which a lead hazard may be generated (reference 29 CFR 1926.62, section d). Environmental and personnel monitoring should be conducted during any removal or demolition process (as appropriate) to determine actual personal exposure. This monitoring information can be used to determine the levels of personnel protection and environmental controls required for work involving specific removal/demolition processes on specific structures. Under OSHA requirements, the Contractor performing the work will be required to conduct this monitoring. It is important to note that environmental controls will vary dependent upon the content of lead in paint, the process used to remove it, duration of the work, and the amount of paint to be removed.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of Hankins & Anderson. This report has been prepared in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided by others.

Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards. During F&R’s inspection, accessible areas were visually surveyed for the presence of suspect asbestos containing materials. Inaccessible areas, such as behind solid ceilings or behind solid walls were not surveyed, therefore some asbestos containing materials may not have been identified. Areas inspected for suspect asbestos containing materials were limited to those designated by the scope of services and Hankins & Anderson. As with any similar survey of this nature, actual conditions exist only at the precise locations from which LBP samples were measured. Certain inferences are based on the results of this sampling and related testing to form a professional opinion of conditions in areas beyond those from which the samples were collected. No other warranty, expressed or implied, is made. Individuals who have completed the EPA approved asbestos inspector courses collected all samples. Asbestos samples were collected and submitted for analysis via polarized light microscopy at an NVLAP-accredited laboratory.

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



requirements and should be performed by appropriately qualified and licensed-personnel, as warranted.

F&R, by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that may present a potential danger to public health, safety, or the environment. It is the client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment.



APPENDIX I

**CERTIFICATES OF ANALYSIS
CHAIN OF CUSTODY FORMS**

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.7469 WHITE PINE ROAD - RICHMOND, VA 23237
804-275-4788 FAX 804-275-4907**BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

CLIENT: Froehling & Robertson, Inc.
Attn: Chris Chapman
P. O. Box 27524
Richmond, VA 23261

DATE OF RECEIPT: 23 MAY 2003
DATE OF ANALYSIS: 24 MAY 2003
DATE OF REPORT: 27 MAY 2003

CLIENT NUMBER: 48-2016 S
EHS PROJECT #: 05-03-3214
PROJECT: 2-54-039E

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
01	1/ Black Brittle	NAD	4% Cellulose 96% Non-Fibrous
02	2/ Black Brittle; Off-White Aggregate	NAD	2% Cellulose 98% Non-Fibrous
03	3/ Black Brittle	NAD	40% Cellulose 60% Non-Fibrous
04	4/ Black Brittle	12% Chrysotile 12% Total Asbestos	10% Cellulose 18% Fibrous Glass 60% Non-Fibrous
05	5/ Black Brittle	15% Chrysotile 15% Total Asbestos	10% Cellulose 75% Non-Fibrous
06	6/ Black Brittle	17% Chrysotile 17% Total Asbestos	5% Cellulose 78% Non-Fibrous

QC SAMPLE: M2-1999-2

QC BLANK: SRM 1866 Fiberglass

REPORTING LIMIT: 1% Asbestos.

METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 *

ANALYST: Mark Case

Reviewed By Authorized Signatory:

Michael A. Mueller
Howard Varner, Laboratory Director
Irma Faszewski, Quality Assurance Coordinator
David Xu, MS, Senior Chemist
Feng Jiang, MS, Senior Geologist
Michael A. Mueller, Quality Assurance Manager

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 48-2016 S
EHS PROJECT #: 05-08-8214
PROJECT: 2-54-039E

Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND NAD = no asbestos detected
 SCF = suspected ceramic fibers

p1m1.dot/07JAN2002/pd

-- PAGE 02 of 02 -- END OF REPORT --



FROEHLING & ROBERTSON, INC.
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS
ENGINEERS • LABORATORIES
"OVER ONE HUNDRED YEARS OF SERVICE"

LIMITED VISUAL MOLD SURVEY REPORT

Prepared for:
Ms. Dawn Kritzer
Project Manager
Hankins and Anderson
1604 Santa Rosa Road
Richmond, Virginia 23229

Regarding:
Limited Visual Mold Survey
Building 3206
Fort Lee, Virginia
F&R Project # E54-039E
H&A Project # 379651

Prepared by:
FROEHLING & ROBERTSON, INC.
3015 Dumbarton Road
Richmond, Virginia 23261
(804) 264-2701

May 28, 2003

Prepared by:

A handwritten signature in black ink, appearing to read 'Chadwick Bowman', written over a white background.

Chadwick Bowman
Industrial Hygienist
Environmental Services

Reviewed by:

A handwritten signature in black ink, appearing to read 'Christopher Chapman', written over a white background.

Christopher Chapman, CIH
Senior Industrial Hygienist
Environmental Services

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CROZET, VA • FAYETTEVILLE, NC • FREDERICKSBURG, VA • GREENSVILLE, SC
HICKORY, NC • RALEIGH, NC • ROANOKE, VA • STERLING, VA



1.0 INTRODUCTION

As authorized by Hankins and Anderson, Inc., Froehling & Robertson, Inc. (F&R) personnel performed a limited visual mold survey at Building 3206 in Fort Lee, Virginia, on May 22, 2003.

The Building 3206 is a three-story brick building with a basement and a built-up roof. Currently, it is used as a dormitory with a kitchen and a dining hall.

During the site visit, F&R observed several areas of suspect microbial growth as noted in the findings section. However, F&R recommends confirmatory sampling to identify the presence or absence of microbial contamination.

2.0 FINDINGS

Mold growth was observed at the following locations:

- Pipe insulation surfaces.
- 2nd floor West end central hallway ceiling.
- 1st floor East end Recreation area Southeast corner ceiling (tectum ceiling).
- 1st floor West end hallway CMU wall surface.
- 1st floor West end dormitory ceiling.
- Central kitchen dishwashing area CMU column near the drop ceiling.

Standing water was observed at the following surface floor locations:

- 1st floor East end Northeast corner mechanical room (inside the recreation area).
- Basement mechanical room.

3.0 RECOMMENDATIONS

- a) All moisture infiltration issues should be corrected prior to any remediation activities. This should be performed concurrent with drying procedures within the building.
- b) F&R recommends that all areas of visible mold growth be thoroughly cleaned. Exploratory demolition and removal of impacted material may be required, dependent upon the substrate that was impacted.
- c) F&R recommends that the areas with standing water accumulations be thoroughly cleaned and drained to prevent potential mold growth. This work may be performed by the building maintenance staff or by a professional cleaning company. Concurrent with the cleaning, drying of the affected areas



should also be performed.

- d) F&R noted the presence of one or more sump pumps in the basement. If full of water, they may serve as reservoirs for bacteria or mold growth. F&R recommends inspection and/or maintenance of the sump pumps to insure proper functioning.
- e) F&R recommends using a qualified and experienced mold remediation contractor to perform the work.
- f) Any microbial impacted insulation should be removed and replaced.
- g) For mold remediation of the building, containments will be necessary. F&R recommends the use of plastic barriers and negative pressure containment(s) to isolate and minimize the spread of microbial contamination. Pressure differential should be -0.02 inches of water gauge between the outside and inside of containment. Provide HEPA-filtered local exhaust ventilation (negative air machine) directly adjacent to the areas being cleaned. Dry out these areas, if necessary. Maintain containment and continuous operation of the negative air machines as instructed by an industrial hygienist.
- h) Following removal of all contaminated materials, HEPA vacuum should be used to dry out surfaces to remove residual mold spores. If microbial growth is heavy, HEPA sanding may be necessary. Clean and treat all remaining building materials (i.e. framing, sub-floor, and floor joists) with an anti-microbial solution and allow drying out thoroughly. The contractor should use a moisture meter to verify that all surfaces have been dried out. If any wooden components are significantly water damaged (i.e. rotted), they should be replaced.
- i) Some microbial contamination may be present throughout the rest of the building. F&R recommends that the entire building undergo a generalized cleaning following the guidelines described in EPA's March 2001 document "Mold Remediation in Schools and Commercial Buildings". Since the contamination is likely to be on surfaces, F&R recommends that the cleaning is to be in accordance with Table 2 - Small Areas (<10 feet). This will include the following:
 - a) Cleaning of carpets and furnishings and all major horizontal surfaces.
 - b) Wet wiping/HEPA vacuuming of non-porous surfaces.
 - c) Thorough duct cleaning.
- j) All workers performing this work should wear proper personal protective



equipment (PPE), including HEPA filtered respirators and disposable clothing (reference also appropriate OSHA standards for PPE).

- k) Post-clearance sampling should be performed to verify reduction in microbial levels before removal of the containment. Prior to final clearance air testing, the industrial hygienist will require that the negative air machines be turned off for a period of 24 hours.
- l) Following clearance of the microbial affected areas; all surfaces to be painted should have an antimicrobial primer such as Fosters or Porter brand applied prior to finish painting.
- m) Complete remediation of all microbial organisms within a building cannot be guaranteed. It is important to note that the reported microbial levels are only reflective of conditions at the time of this test and that microbial populations can vary over time, depending upon a number of conditions, including environmental factors (i.e., temperature and relative humidity). Because of the nature of this environment, a complete remediation of this space is difficult. If significant mold growth reappears, or if the residents experience prolonged allergic-type health complaints, the building owner should seek further investigation of the problem.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Hankins & Anderson and/or their agents. This report has been prepared in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our observations are based upon conditions readily visible at the site at the time of our site visit.

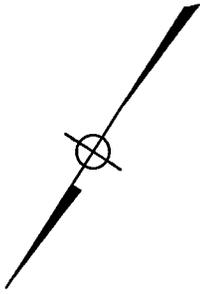
The scope of services performed was limited to those requested by the Client and does not constitute a full microbial assessment of the site. Because of the nature of this type of work (microbial contamination reduction) and the difficulties involved in conducting remediation work, F&R cannot guarantee that the methods or recommendations described in this report will eliminate all microbial contamination within the building, or prevent return of microbial contamination or re-growth under favorable conditions. Since monitoring the performance of the remediation work is beyond F&R's scope of services, F&R also cannot be held responsible for the performance or execution of the remediation work.

It is important to note that microbial levels may fluctuate dependant upon a variety of factors including the weather and time of the year. The data provided in this study is



only indicative of conditions sampled at the immediate time of the study. Professional services and scientific analyses have been performed, and recommendations prepared in accordance with customary principles in the fields of engineering and analytical science. This warranty is in lieu of all other warranties expressed or implied. The work performed in conjunction with this assessment and the data developed is intended as a description of available information at the dates and locations given. This report does not warrant against future operations or conditions, nor does it warrant against extant, or future, conditions of a type or at a location not investigated.

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



STANDING WATER

FUEL STORAGE

BALCONY

BOILER ROOM

TRANSFORMER ROOM

VISIBLE MICROBIAL CONTAMINATION ON PIPE INSULATION (100 LN. FT)

LOCKER ROOM

STAIR WELL

ISSUE ROOM

COMPANY STORAGE

PIPE TRENCH

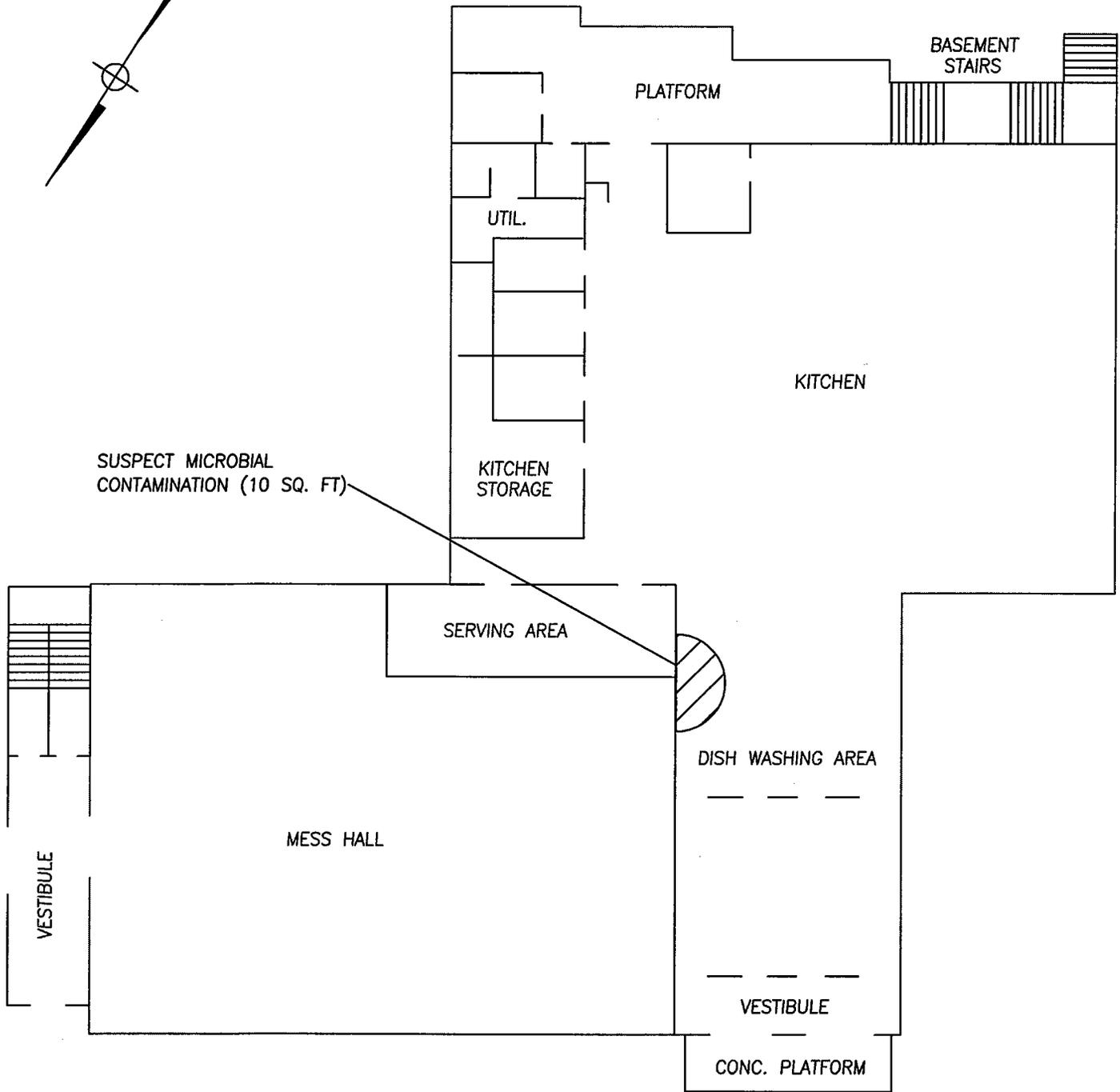
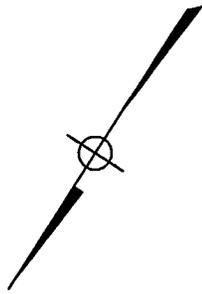


FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

BUILDING NO. 3206
BASEMENT
FORT LEE, VIRGINIA

LIMITED VISUAL MOLD SURVEY

DRAWN: ZCP	SCALE: NTS	PROJ. NO.: E54-039E
CHKD: CRB	DATE: 5/03	DWG NO.: 1/5

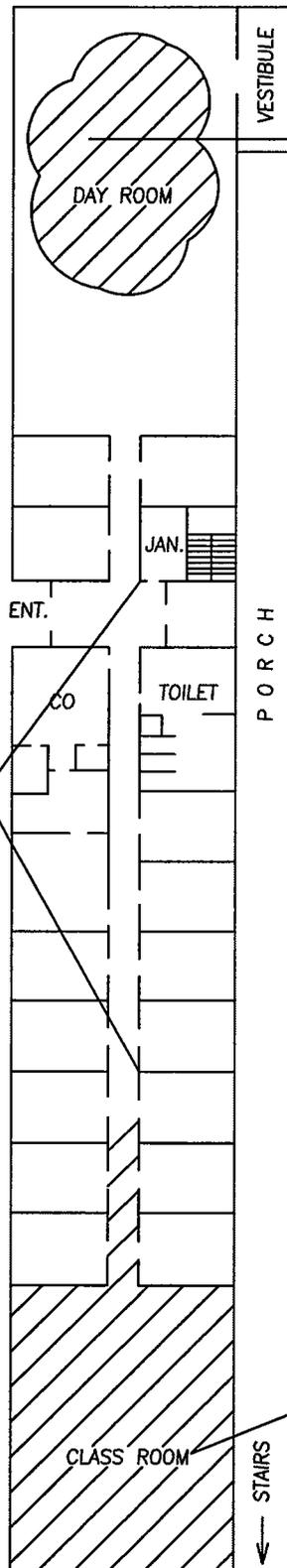
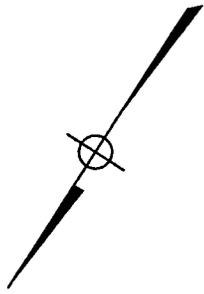


FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

BUILDING NO. 3206
FIRST FLOOR
FORT LEE, VIRGINIA

LIMITED VISUAL MOLD SURVEY

DRAWN: ZCP	SCALE: NTS	PROJ. NO.: E54-039E
CHKD: CRB	DATE: 5/03	DWG NO.: 2/5



SUSPECT MICROBIAL
CONTAMINATION ON TECTUM
CEILING PANEL

VISIBLE MICROBIAL CONTAMINATION ON PIPE
INSULATION (200 LN. FT)

SUSPECT MICROBIAL
CONTAMINATION (800 SQ. FT)

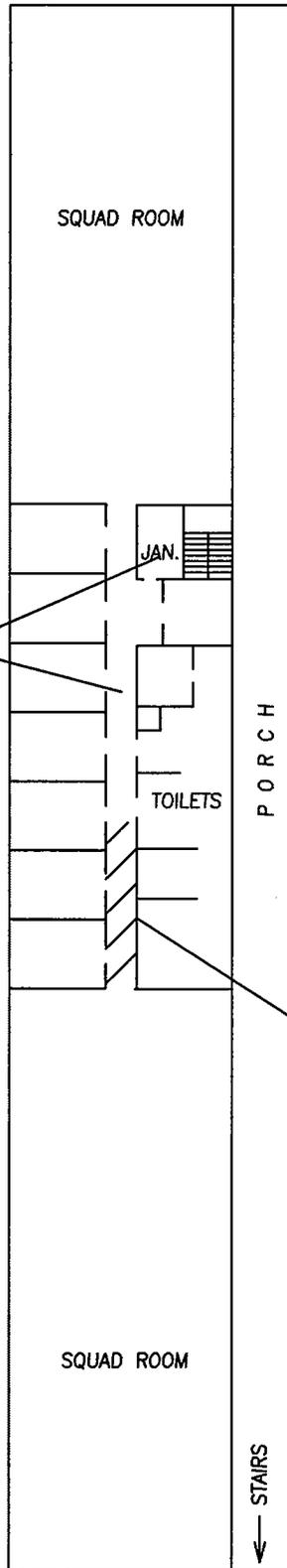
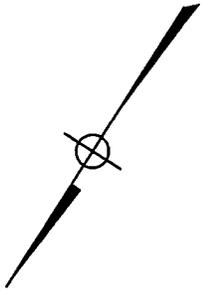


FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

BUILDING NO. 3206
FIRST FLOOR
FORT LEE, VIRGINIA

LIMITED VISUAL MOLD SURVEY

DRAWN: ZCP	SCALE: NTS	PROJ. NO.: E54-039E
CHKD: CRB	DATE: 5/03	DWG NO.: 3/5



VISIBLE MICROBIAL CONTAMINATION ON PIPE INSULATION (200 LN. FT)

SUSPECT MICROBIAL CONTAMINATION (300 SQ. FT)

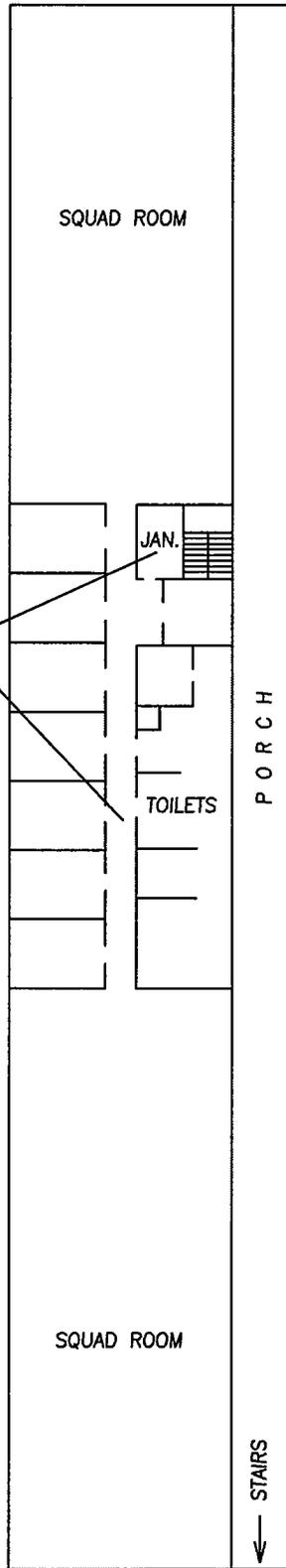
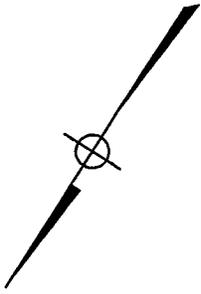


FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

BUILDING NO. 3206
SECOND FLOOR
FORT LEE, VIRGINIA

LIMITED VISUAL MOLD SURVEY

DRAWN: ZCP	SCALE: NTS	PROJ. NO.: E54-039E
CHKD: CRB	DATE: 5/03	DWG NO.: 4/5



VISIBLE MICROBIAL CONTAMINATION ON PIPE INSULATION (200 LN. FT)



FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

BUILDING NO. 3206
THIRD FLOOR
FORT LEE, VIRGINIA

LIMITED VISUAL MOLD SURVEY

DRAWN: ZCP

SCALE: NTS

PROJ. NO.: E54-039E

CHKD: CRB

DATE: 5/03

DWG NO.: 5/5



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**ASBESTOS & LEAD SURVEY REPORT
ADDENDUM #1**

Prepared for:
Mr. Dennis Standbridge
Hankins & Anderson
1604 Santa Rosa Road
Richmond, Virginia 23229

Regarding:
Asbestos & Lead Survey
Building 3206 Renovations
Fort Lee, Virginia
Hankins & Anderson No. R3577-18
Fort Lee Project # QU 42-6P

F&R Project No.: Z54-290E.ADD

Prepared by:
FROEHLING & ROBERTSON, INC.
3015 Dumbarton Road
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April 5, 1999

Prepared by:

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Reviewed by:

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Project Manager
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CHESAPEAKE, VA • CROZET, VA • FAYETTEVILLE, NC • FREDERICKSBURG, VA
GREENVILLE, SC • RALEIGH, NC • ROANOKE, VA • STERLING, VA • WINSTON-SALEM, NC



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Appendix I

Asbestos Survey Findings Table
Analytical Results
Chain of Custody Forms



1.0 INTRODUCTION

As authorized by Hankins and Anderson, Inc., Mr. Chris Chapman of F&R performed additional sampling of suspect asbestos-containing materials and suspect lead-containing painted surfaces in Building 3206 at Fort Lee, Virginia on February 15, 1999. The additional testing was conducted in conjunction with planned, selected renovation work occurring in the barracks.

2.0 PROJECT DESCRIPTION

It is F&R's understanding of the project that renovations are to be conducted in the barracks portion of Building 3206 (all inhabited areas, exclusive of the bathrooms and attached Mess Hall). The work to be performed involves the repair and/or upgrade of various mechanical and electrical systems and limited miscellaneous architectural improvements.

3.0 PROCEDURES

3.1 Asbestos

For this additional testing, F&R collected a total of 17 samples of materials that may be impacted by the planned renovations. These samples included pipe mastic, pipe mud, tank insulation, roof flashing, tectum ceiling, duct mastic, and sheetrock. Refer to the Asbestos Survey Findings Table in Appendix I for additional information.

This additional testing was performed as a supplement to F&R's original survey report dated 12/10/98 for this building.

All samples were collected by Mr. Christopher Chapman of F&R, a Virginia Licensed Asbestos Inspector (#0515), and submitted to F&R's NVLAP Accredited and Virginia Licensed Asbestos Laboratory located in Richmond, Virginia. Samples were analyzed using Polarized Light Microscopy (PLM) following EPA Method 600/R-93/116.

3.2 Lead-Based Paint

For this additional survey work, samples were collected of select typical painted surfaces that were observed to have been damaged. Samples were collected by Mr. Christopher Chapman of F&R, a Virginia Licensed Lead Inspector / Risk Assessor.



4.0 FINDINGS AND RECOMMENDATIONS

4.1 *Asbestos Containing Materials*

Asbestos was detected in one of the seventeen samples submitted for analysis. One sample collected of the roof flashing found on the vents located on the main roof was found to contain 8% Chrysotile asbestos.

This material is non-friable and was observed to be in good condition.

If this material is to be impacted by renovations, it should be removed beforehand by the asbestos abatement contractor.

4.1.2 Assumed Asbestos-Containing Materials

No samples were collected from the building's main roof for this survey. All roofing materials should be assumed to contain asbestos. No samples were collected of the boiler brick or gaskets. These materials should also be assumed to contain asbestos. Finally, no samples were collected of exterior materials (i.e., soffits, glazings, caulking). These materials should be assumed to contain asbestos. If any of these materials are to be impacted by planned renovation activities, they should be sampled by a Virginia Licensed Asbestos Inspector prior to being disturbed.

4.1.3 Non Asbestos-Containing Materials

No asbestos was detected in the other suspect materials that were sampled during this survey and which may be impacted by planned renovations. These materials included: sheetrock, tectum ceiling, various pipe mastics, TSI mudded fittings, tank mastic and insulation.

4.2 Lead-Based Paint

During this additional work, F&R also collected two samples of paint from the ceiling and wall in the basement (storage room). Detectable levels of lead were found in both samples, although levels were below the U.S. Department of Housing and Urban Development's (HUD) Action Level for lead in paint (0.5 %). It is important to note that OSHA, under its Lead in Construction standard (29 CFR 1926.62, Paragraph d), does not define acceptable levels of lead in paint at which no exposure to airborne lead (above the action level) would be expected. Rather, OSHA defines airborne concentrations and references specific types of work practices and operations from which a lead hazard may be generated. Environmental and personnel monitoring should be conducted during any renovation / demolition process (as appropriate) to determine actual personal exposure. This monitoring information can be used to



determine the levels of personnel protection and environmental controls required for work involving specific renovation / demolition processes on specific structures. Under OSHA requirements, the Contractor performing the work will be required to conduct this monitoring. It is important to note that environmental controls will vary depending upon the content of lead in paint, the process used to remove it, the duration of the work, and the amount of paint to be removed.

During any lead paint removal work, environmental controls should also be implemented to capture any generated lead dust and prevent pollution to the environment. In addition, all potential lead-contaminated debris should be tested prior to removal from the site (reference EPA hazardous waste disposal requirements found in 40 CFR 260-264).

F&R recommends that any large-scale lead paint abatement project (if applicable) be conducted by a qualified and Virginia Licensed Lead Paint Abatement Contractor who is properly equipped and experienced for this type of work. Note: As of February 1, 1996, Virginia has adopted licensing requirements for lead abatement contractors. Projects which are defined specifically as "Lead-Based Paint Abatement Projects" are required to be performed by Virginia Licensed Lead Contractors.

Examples of suspect lead-containing surfaces which may be impacted by planned renovations include, but are not limited to: walls, ceilings, doors and door trim, baseboards, window sills and other window trim, and stairway components.



5.0 LIMITATIONS

This report has been prepared for the exclusive use of Hankins & Anderson. This report has been prepared in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided by others.

Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit and upon current industry standards. During F&R's inspection, accessible areas were visually surveyed for the presence of suspect asbestos-containing materials. Inaccessible areas, such as behind solid ceilings / solid walls or within sealed pipe chases, were not surveyed. Areas inspected for suspect asbestos-containing materials were limited to those designated by the scope of services. All samples were collected by individuals who have completed the EPA approved asbestos inspector courses. Asbestos samples were collected and submitted for analysis via polarized light microscopy at F&R's NVLAP accredited laboratory.

F&R, by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that may present a potential danger to public health, safety, or the environment. It is the client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment.

Under this scope of services, F&R assumes no responsibility regarding response actions (e.g. O&M Plan, encapsulation, abatement, removal, etc.) initiated as a result of these findings. Response actions are the sole responsibility of the client and should be conducted in accordance with local, state and/or federal requirements and should be performed by appropriate licensed-asbestos/lead personnel, as warranted.



APPENDIX I

Asbestos Survey Findings Table
Analytical Results
Chain of Custody Forms



ASBESTOS SURVEY FINDINGS TABLE

F&R Project: Z54-290E; Ft. Lee, Bldg. 3206
Inspector: Chris Chapman
Client: Hankins & Anderson
Inspection Date: 2-12-99
Location: Ft. Lee, VA

KEY
ND: None Detected
NA: Not Applicable
CH: Chrysotile
AM: Amosite

SAMPLE NO.	MATERIAL TYPE	SAMPLE LOCATION	CONDITION	FRIABLE	% ASBESTOS
3206-18	TSI - mud elbow	Boiler room - DMHS			ND
3206-19	TSI - mud elbow	Boiler room valve under water tank			ND
3206-20	TSI - mud elbow	Boiler room elbow on DMHS over water tank			ND
3206-21	Pipe mastic	Boiler room - Valve on CWR pump			ND
3206-22	Tank TSI - expansion tank	Boiler room - expansion tank - jacket			ND
3206-23	Pipe mastic	Boiler room - HWS line			ND
3206-24	Pipe/valve mastic	Boiler room, HWS pump			ND
3206-25	Pipe mastic - elbow	Boiler room - elbow- HWS line			ND
3206-26	Pipe Elbow Mud	Boiler room - DHWS above water tank			ND
3206-27	Tank TSI - expansion tank	Boiler room			ND
3206-28	Sheetrock	Basement - supply room office			ND
3206-29	Mastic (black) on sheetrock wall/floor	Basement - supply room office			ND
3206-30	Tectum ceiling	1 st Fl., Rec. room			ND
3206-31	Tectum ceiling	1 st Fl., Rec. room			ND
3206-32	Duct mastic/sealant	2 nd floor Mechanical room			ND
3206-33	Duct mastic/sealant	2 nd floor mechanical room			ND
3206-34	Roof flashing	Main roof - typical flashing on vents	Good	No	8 % Ch



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February 26, 1999

Page 1 of 2

Lab #: 9902144
 Client: F&R Environmental
 Attn: Chris Chapman

Project: Bldg 3206 Fort Lee
 Project #:
 Analyst: AJN

Date Sampled: 2/12/99
 Date Received: 2/15/99
 Date Analyzed: 2/23/99

Lab ID	CLIENT ID	LABORATORY SAMPLE DESCRIPTION	HOMO-GENOUS	% ASBESTOS FIBERS	OTHER FIBERS	NON-FIBROUS
9902144-01	3206-18	Insulation,gray, Granular, fibrous	Yes	ND	35%MG	4%NF 2%Q 59% CA
9902144-02	3206-19	Insulation,gray,friable Granular, fibrous	Yes	ND	35%MG	4% NF 1% Q 60 % CA
9902144-03	3206-20	Insulation,gray,friable Granular,fibrous	Yes	ND	35%MG	4% NF 1% Q 60 % CA
9902144-04	3206-21	Insulation jacket,beige, OB, fibrous	Yes	ND	15%FG 12%MG 20%CF	41%CA 12%NF
9902144-05	3206-22	Insulation,gray,friable Granular,fibrous	Yes	ND	35%MG 1% SF	60%CA 4% NF
9902144-06	3206-23	Mastic,white Hard,OB	Yes	ND	12% MG 15% WL	4% CA 69% NF
9902144-07	3206-24	Mastic, beige Hard,OB	Yes	ND	8% MG 12% CF 15% WL	5% CA 60% NF
9902144-08	3206-25	Mastic, beige, Hard,OB,Fibrous	No	ND	7 % MG 4% WL	5% CA 72% NF
9902144-09	3206-26	Insulation,gray Friable,granular,fibrous	Yes	ND	35% MG	61% CA 4% NF
9902144-10	3206-27	Insulation,gray,friable, Granular,fibrous	Yes	ND	35% MG	1% Q 60 % CA 4% NF

AC - Actinolite
 AM- Amosite
 AN - Anthophyllite
 CH - Chrysotile
 CR - Crocidolite
 FT - Fibrous Tremolite
 ND- None Detected

CF - Cellulose Fiber
 FG - Fibrous Glass
 MG- Mineral Wool
 OF - Other Fiber
 SF - Synthetic Fiber
 T - Talc
 WL- Wollastonite
 AH - Animal Hair

CA- Carbonate
 MF- Metal Foil
 NF - Other Non-Fibrous
 PP - Perlite/Pumice
 Q - Quartz
 MI - Mica

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA 23261-7524
 TELEPHONE (804) 264-2701 • FAX (804) 264-1202

CERTIFICATIONS: AIHA ELLAP - 8942
 NIST NVLAP - 102060-0
 VIRGINIA DRINKING WATER - 00150
 NORTH CAROLINA DEHNR- 432
 SOUTH CAROLINA DHEC - 93010001 & - 93010002
 CHARTER MEMBER- ACIL

BRANCHES: ASHEVILLE, NC • ATLANTA, GA • BALTIMORE, MD • CHARLOTTE, NC
 CHESAPEAKE, VA • CROZET, VA • FAYETTEVILLE, NC • FREDERICKSBURG, VA
 GREENVILLE, SC • RALEIGH, NC • ROANOKE, VA • STERLING, VA • WINSTON-SALEM, NC



9902144-11	3206-28	Drywall, white/brown Compacted, granular, fibrous	No	ND	18% CF	79% CA 3% NF
9902144-12	3206-29	Mastic, black, OB, Brittle	Yes	ND	5% CF	1%Q 94% NF
9902144-13	3206-30	Texture, white/brown Hard, OB	No	ND	37% CF	63% NF
9902144-14	3206-31	Texture, beige/brown Hard, OB	No	ND	37% CF	63% NF
9902144-15	3206-32	Sealant, red, Rubbery, OB	Yes	ND		20% CA 80% NF
9902144-16	3206-33	Sealant, red, rubbery, OB	Yes	ND		20% CA 80% NF
9902144-17	3206-34	Roofing, black, hard, Bituminous	Yes	8% CH		15% CA 77 % NF

AC - Actinolite
AM- Amosite
AN - Anthophyllite
CH - Chrysotile
CR - Crocidolite
FT - Fibrous Tremolite
ND- None Detected

CF - Cellulose Fiber
FG - Fibrous Glass
MG- Mineral Wool
OF - Other Fiber
SF - Synthetic Fiber
T - Talc
WL- Wollastonite
AH - Animal Hair

CA- Carbonate
MF- Metal Foil
NF - Other Non-Fibrous
PP - Perlite/Pumice
Q - Quartz
MI - Mica

Samples were analyzed by EPA 600/R-93/116. This report shall not be reproduced except in full, without the written approval of this laboratory. This report may not be used to claim product endorsement by NVLAP or any US Government agency. Report does not imply results for anything other than samples tested. PLM is not consistently reliable in detecting the presence of asbestos in nonfriable, organically bound material. AEM is recommended for confirmation of PLM data.

Audrey N. Brubeck
Laboratory Manager

ANB/psg



CHAIN OF CUSTODY RECORD

Please Print CLIENT ADDRESS ATTN PHONE/FAX

FROEHLING & ROBERTSON, INC.
P.O. BOX 27524
RICHMOND, VIRGINIA 23261
TEL: (804) 264-2701
FAX: (804) 264-1202

Terms and Conditions: This Agreement shall be subject to all of the terms and conditions set forth on the reverse side hereof, which terms and conditions are expressly made a part of this Agreement and any reports issued by F&R pursuant to this Agreement.

LAB PROJECT #	PROJECT NAME/NUMBER	LAB I.D.	DATE SAMPLED	TIME SAMPLED	BY	COM	SAMPLE IDENTIFICATION	PLEASE PRINT	CONTAINERS # OF	SAMPLE MATRIX	REQUESTED TEST PARAMETERS	PLEASE PRINT
090214A	1416 3206 Fud Co VA	10	2-17-11				3206 27		1	100%	Over flow	Over flow
		11					28			100%	Supply fan	Supply fan
		12					29			100%	100%	100%
		13					30			100%	100%	100%
		14					31			100%	100%	100%
		15					32			100%	100%	100%
		16					33			100%	100%	100%
		17					34			100%	100%	100%

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	COMMENTS
<i>[Signature]</i>			<i>[Signature]</i>	1/17/11	1520	

SHIPPED VIA _____ DATE _____ pH _____

Sample Temp. _____ Cooler Temp. _____



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CERTIFICATE OF ANALYSIS

February 24, 1999

Page 1 of 1

LAB #: 9902143
 CLIENT: F & R Environmental
 Attn: Chris Chapman

PROJECT: Bldg. 3206, Fort Lee
 SAMPLE BY: C. Chapman
 LAB RECEIPT: 02/15/99, 1520

<u>PARAMETER</u>	<u>ANALYSIS DATE/TIME</u>	<u>METHOD</u>	<u>ANALYST</u>
Metals - Digestion	02/22/99, 1200	ASTM D3335-85a	MDW
Lead	02/23/99, 1300	ASTM D3335-85a	RHS

RESULTS:

F&R #:	9902143-01	9902143-02
SAMPLE ID:	3206-1	3206-2
DATE:	02/12/99	02/12/99
MATRIX:	Paint	Paint
Lead, %	0.31	0.16

Audrey N. Brubeck
 Laboratory Manager

ANB/rg

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA 23261-7524
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 GREENVILLE, SC • RALEIGH, NC • ROANOKE, VA • STERLING, VA • WINSTON-SALEM, NC

CERTIFICATIONS:

AIHA ELLAP - 8942
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 VIRGINIA DRINKING WATER - 00150
 NORTH CAROLINA DEHNR- 432
 SOUTH CAROLINA DHEC - 93010001 & - 93010002
 CHARTER MEMBER- ACIL



ASBESTOS & LEAD SURVEY REPORT

Prepared for:
Mr. Dennis Standbridge
Hankins & Anderson
1604 Santa Rosa Road
Richmond, Virginia 23229

Regarding:
Asbestos & Lead Survey
Building 3206 Renovations
Fort Lee, Virginia
Hankins & Anderson No. R3577-18
Fort Lee Project # QU 42-6P

F&R Project No.: Z54-290E

Prepared by:
FROEHLING & ROBERTSON, INC.
3015 Dumbarton Road
Richmond, Virginia 23261
(804) 264-2701

December 10, 1998

Prepared by:

A handwritten signature in cursive script that reads 'David W. Walker'.

David W. Walker
VA Licensed Asbestos Inspector #2060
VA Licensed Lead Inspector / Risk Assessor #109
Environmental Services

Reviewed by:

A handwritten signature in cursive script that reads 'Chris Chapman'.

Christopher Chapman, CIH
Senior Industrial Hygienist
Environmental Services



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Chain of Custody Forms	
Ft. Lee Postwide Inspection Tables	



1.0 INTRODUCTION

As authorized by Hankins and Anderson, Inc., Mr. David Walker of F&R performed a limited sampling of suspect asbestos-containing materials and suspect lead-containing painted surfaces in Building 3206 at Fort Lee, Virginia on December 3, 1998. The limited survey was conducted in conjunction with planned renovations throughout the barracks.

2.0 PROJECT DESCRIPTION

It is F&R's understanding of the project that renovations are to be conducted in the barracks portion of Building 3206 (all inhabited areas, exclusive of the bathrooms and attached Mess Hall). The work to be performed involves the repair and/or upgrade of various mechanical and electrical systems, and miscellaneous architectural improvements (including the replacement of all interior floor, wall, and ceiling finishes).

3.0 PROCEDURES

3.1 Asbestos

For this project, F&R collected a total of 18 samples of materials that may be impacted by the planned renovations. These samples included wall plasters, ceiling / floor tiles, pipe insulation, and window caulking. Refer to the Asbestos Survey Findings Table and Renovation / Demolition Survey Drawings in Appendix I for additional information.

As a supplement to this survey, F&R also reviewed data from the Ft. Lee Postwide Inspection (1991), consisting of 22 samples collected from Building 3206. Refer to the Ft. Lee Postwide Inspection Tables and Renovation / Demolition Survey Drawings in Appendix I for additional information.

All samples were collected by Mr. David Walker of F&R, a Virginia Licensed Asbestos Inspector (#2060), and submitted to F&R's NVLAP Accredited and Virginia Licensed Asbestos Laboratory, located in Richmond, Virginia. Samples were analyzed using Polarized Light Microscopy (PLM) following EPA Method 600/R-93/116.

3.2 Lead-Based Paint

A visual survey of typical painted surfaces was performed in conjunction with the asbestos sampling by Mr. David Walker of F&R, a Virginia Licensed Lead Inspector / Risk Assessor (#109). Suspect lead-containing painted and varnished building components were identified that may be impacted by planned renovations.



4.0 FINDINGS AND RECOMMENDATIONS

4.1 Asbestos Containing Materials - Findings

Asbestos was detected in 5 of the 18 samples submitted for analysis. Following is a breakdown of findings by material type. Please reference the Asbestos Survey Findings Table in Appendix I for additional information.

4.1.1 Pipe Insulation - Domestic Water Lines

Three samples of Thermal System Insulation (TSI) were collected from domestic water lines located in the 1st and 2nd Floor Janitorial Closets near the central stairwell. Asbestos was detected in all of the samples.

These materials are friable and were observed to be in generally fair condition. A few small areas of exposed insulation at the ends of pipe jackets were observed. The location of these materials near areas of moderate activity means that the potential for damage or disturbance may be high.

All insulation associated with domestic water piping throughout the building should be considered positive for asbestos. All identified or suspect asbestos-containing pipe insulation should be removed by a Virginia Licensed Asbestos Abatement Contractor prior to being disturbed by any planned renovation activities.

It is possible that asbestos-insulated domestic water piping may be concealed behind solid walls or ceilings in the building. If any suspect asbestos-containing materials are to be impacted by renovations that were not previously identified, they should be sampled by a Virginia Licensed Asbestos Inspector prior to being disturbed.

4.1.2 Floor Tile Mastic

Three samples were collected of the 12-inch, brown floor tile and associated mastic that is found throughout the 1st, 2nd, and 3rd Floors.

Asbestos was detected in the mastic from two of the three samples submitted. This material was observed to be nonfriable and in generally good condition and poses no apparent health risk unless damaged or disturbed. Based on these results, all floor tile mastic in the building should be assumed to contain asbestos.



No asbestos was detected in the three samples of brown floor tile; however, the floor tile should be assumed to be contaminated with asbestos from the underlying mastic.

Note: Low levels (<10%) of extremely fine asbestos fibers may be difficult to detect in vinyl floor tiles due to the inherent limitations of Polarized Light Microscopy (PLM). F&R's Laboratory recommends confirmation of negative results (where appropriate) by Analytical Electron Microscopy.

If these materials are to be impacted by renovations, they should be removed beforehand by the asbestos abatement contractor.

4.1.3 Previously Identified Asbestos-Containing Materials (ACMs)

At the time of this inspection, the Basement was not accessible and the presence of ACMs could not be verified. Based upon the results of previous asbestos sampling conducted at the building in 1991, all piping in the Basement, crawlspace, and pipe trenches should be assumed to contain asbestos.

The presence and condition of these materials will be confirmed as needed by additional sampling at a later date during the design phase of this project.

According to information supplied by Hankins and Anderson, a renovation of the building's heating and air conditioning systems was completed in 1995. The existing boiler and associated hot water storage and piping was maintained in service. A new air cooled chiller was installed, and six existing air handling units in the squad rooms were retrofitted for cooling with new chilled water coils.

Asbestos-containing insulation was identified in the Boiler Room during the previous survey, associated with a small water storage tank. Based on these results, all TSI associated with the boiler system should be assumed to contain asbestos. If any of these materials are to be impacted by renovation activities, they should be sampled for asbestos by a Virginia Licensed Asbestos Inspector prior to being disturbed.

4.1.4 Assumed Asbestos-Containing Materials

No samples were collected from the building's roof for this survey. All roofing materials should be assumed to contain asbestos. If the roof is to be impacted by planned renovation activities, it should be sampled by a Virginia Licensed Asbestos Inspector prior to being disturbed.

4.1.5 Non Asbestos-Containing Materials



No asbestos was detected in the other suspect materials that were sampled during this survey, and which may be impacted by planned renovations. These materials included: wall plasters, 2'x2' suspended-ceiling tiles, and window glazing.

4.2 Lead-Based Paint - Recommendations

Based on the reported construction date of the building (c. 1952); Lead-Based Paint (LBP) is assumed to be present in the building. For the purpose of this project and F&R's understanding of the scope of renovation work, the Contractor shall assume that all painted and varnished surfaces contain varying levels of lead. It is important to note that OSHA, under its Lead in Construction standard (29 CFR 1926.62, Paragraph d) does not define acceptable levels of lead in paint at which no exposure to airborne lead (above the action level) would be expected. Rather, OSHA defines airborne concentrations, and references specific types of work practices and operations from which a lead hazard may be generated. Environmental and personnel monitoring should be conducted during any renovation / demolition process (as appropriate) to determine actual personal exposure. This monitoring information can be used to determine the levels of personnel protection and environmental controls required for work involving specific renovation / demolition processes on specific structures. Under OSHA requirements, the Contractor performing the work will be required to conduct this monitoring. It is important to note that environmental controls will vary depending upon the content of lead in paint, the process used to remove it, the duration of the work, and the amount of paint to be removed.

During any lead paint removal work, environmental controls should also be implemented to capture any generated lead dust and prevent pollution to the environment. In addition, all potential lead-contaminated debris should be tested prior to removal from the site (reference EPA hazardous waste disposal requirements found in 40 CFR 260-264).

F&R recommends that any large-scale lead paint abatement project (if applicable) be conducted by a qualified and Virginia Licensed Lead Paint Abatement Contractor who is properly equipped and experienced for this type of work. Note: As of February 1, 1996, Virginia has adopted licensing requirements for lead abatement contractors. Projects which are defined specifically as "Lead-Based Paint Abatement Projects" are required to be performed by Virginia Licensed Lead Contractors.

Examples of suspect lead-containing surfaces which may be impacted by planned renovations include, but are not limited to: walls, ceilings, doors and door trim, baseboards, window sills and other window trim, and stairway components.

5.0 LIMITATIONS



This report has been prepared for the exclusive use of Hankins & Anderson. This report has been prepared in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided by others.

Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards. During F&R's inspection, accessible areas were visually surveyed for the presence of suspect asbestos-containing materials. Inaccessible areas, such as behind solid ceilings / solid walls or within sealed pipe chases were not surveyed. Areas inspected for suspect asbestos-containing materials were limited to those designated by the scope of services. All samples were collected by individuals who have completed the EPA approved asbestos inspector courses. Asbestos samples were collected and submitted for analysis via polarized light microscopy at F&R's NVLAP accredited laboratory.

F&R, by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that may present a potential danger to public health, safety, or the environment. It is the client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment.

Under this scope of services, F&R assumes no responsibility regarding response actions (e.g. O&M Plan, encapsulation, abatement, removal, etc.) initiated as a result of these findings. Response actions are the sole responsibility of the client and should be conducted in accordance with local, state and/or federal requirements, and should be performed by appropriate licensed-asbestos/lead personnel, as warranted.



APPENDIX I

Asbestos Survey Findings Table
Renovation / Demolition Survey Drawings
Analytical Results
Chain of Custody Forms
Ft. Lee Postwide Inspection Tables



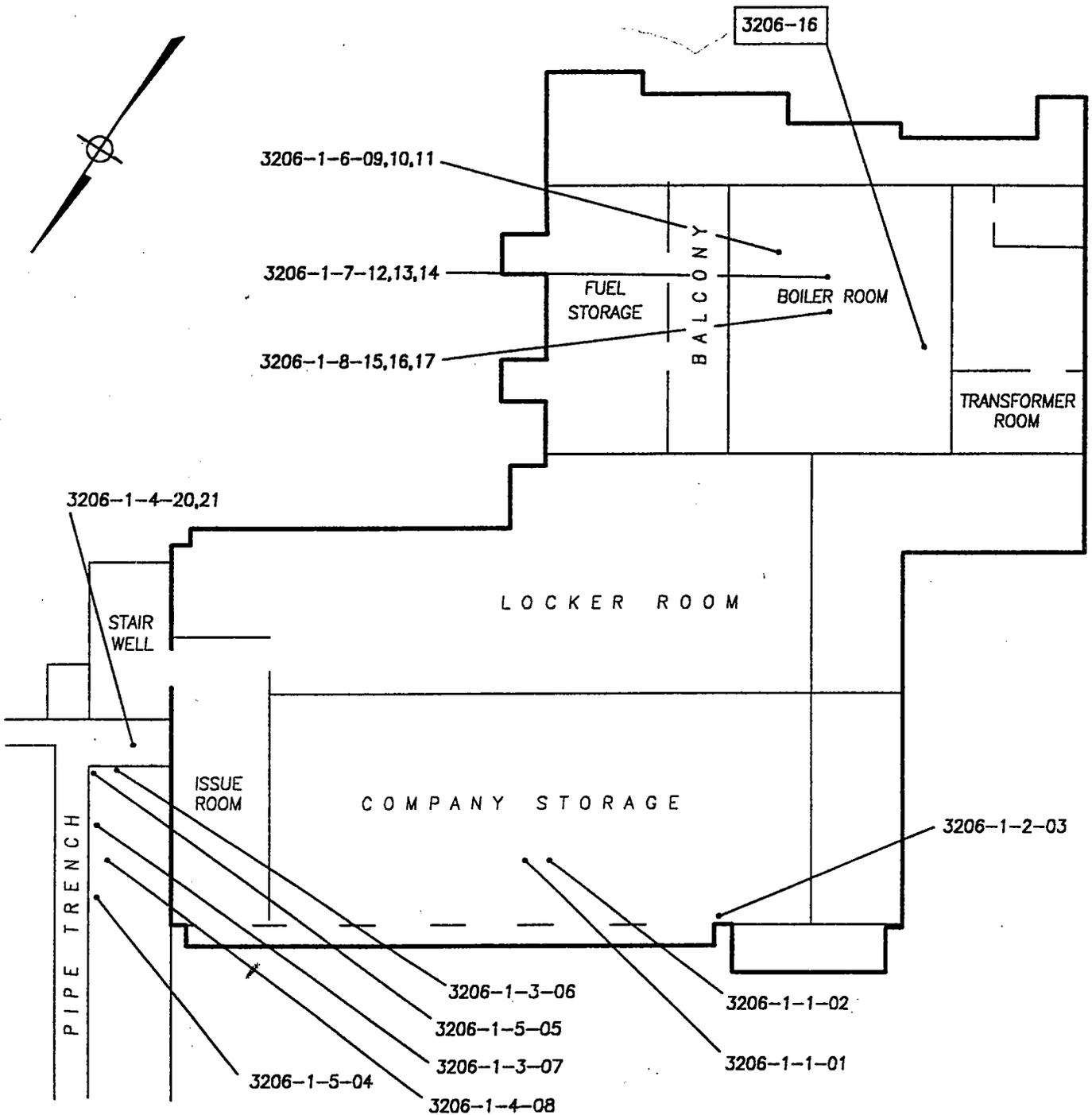
ASBESTOS SURVEY FINDINGS TABLE

F&R Project: Z54-290E; Ft. Lee, Bldg. 3206,
Inspector: David W. Walker
Client: Hankins & Anderson
Inspection Date: 12-3-98
Location: Ft. Lee, VA

KEY
ND: None Detected
NA: Not Applicable
CH: Chrysotile
AM: Amosite

SAMPLE NO.	MATERIAL TYPE	SAMPLE LOCATION	CONDITION	FRIABLE	% ASBESTOS
3206-1	Wall Plaster - Base Coat	1 st Fl. Janitor Closet			ND
3206-2	Wall Plaster - Base Coat	2 nd Fl. Main Corridor			ND
3206-3a	Wall Plaster - Base Coat	2 nd Fl. Main Corridor			ND
3206-3b	Wall Plaster - Finish Coat	2 nd Fl. Main Corridor			ND
3206-4	12" Brown Floor Tile / white sp.	2 nd Fl. Janitor Closet			ND
3206-5	Black Mastic from 12" Brown VFT	2 nd Fl. Janitor Closet	Good	No	6% CH
3206-6	12" Brown Floor Tile / white sp.	1 st Fl., Vestibule at Mess Hall entrance			ND
3206-7	Black Mastic from 12" Brown VFT	1 st Fl., Vestibule at Mess Hall entrance	Good	No	5% CH
3206-8	Pipe Elbow Mudded Insulation	1 st Fl., Janitor Closet, Domestic H ₂ O line	Fair	Yes	50% CH
3206-9	Pipe Jacket Insulation	2 nd Fl., Janitor Closet, Domestic H ₂ O line	Fair	Yes	15% CH
3206-10	Pipe Jacket Insulation	1 st Fl., Janitor Closet, Domestic H ₂ O line	Fair	Yes	5% CH
3206-11	Window Glazing	2 nd Fl., Laundry Room, N. Side			ND
3206-12	Window Glazing	1 st Fl., Study Hall, S. Side			ND
3206-13	Window Glazing	1 st Fl., Laundry Room, S. Side			ND
3206-14	2'x2' Ceiling Tile, Dot / Pit Pattern	Kitchen Vestibule			ND
3206-15	2'x2' Ceiling Tile, Dot / Pit Pattern	Kitchen Vestibule			ND
3206-16	TSI Loose Debris	Boiler Room Floor			ND
3206-17	12" Brown Floor Tile / white sp.	1 st Fl., Laundry Room, N. Side			ND

* NOTE - BOXED SAMPLE NUMBERS COLLECTED 12/98

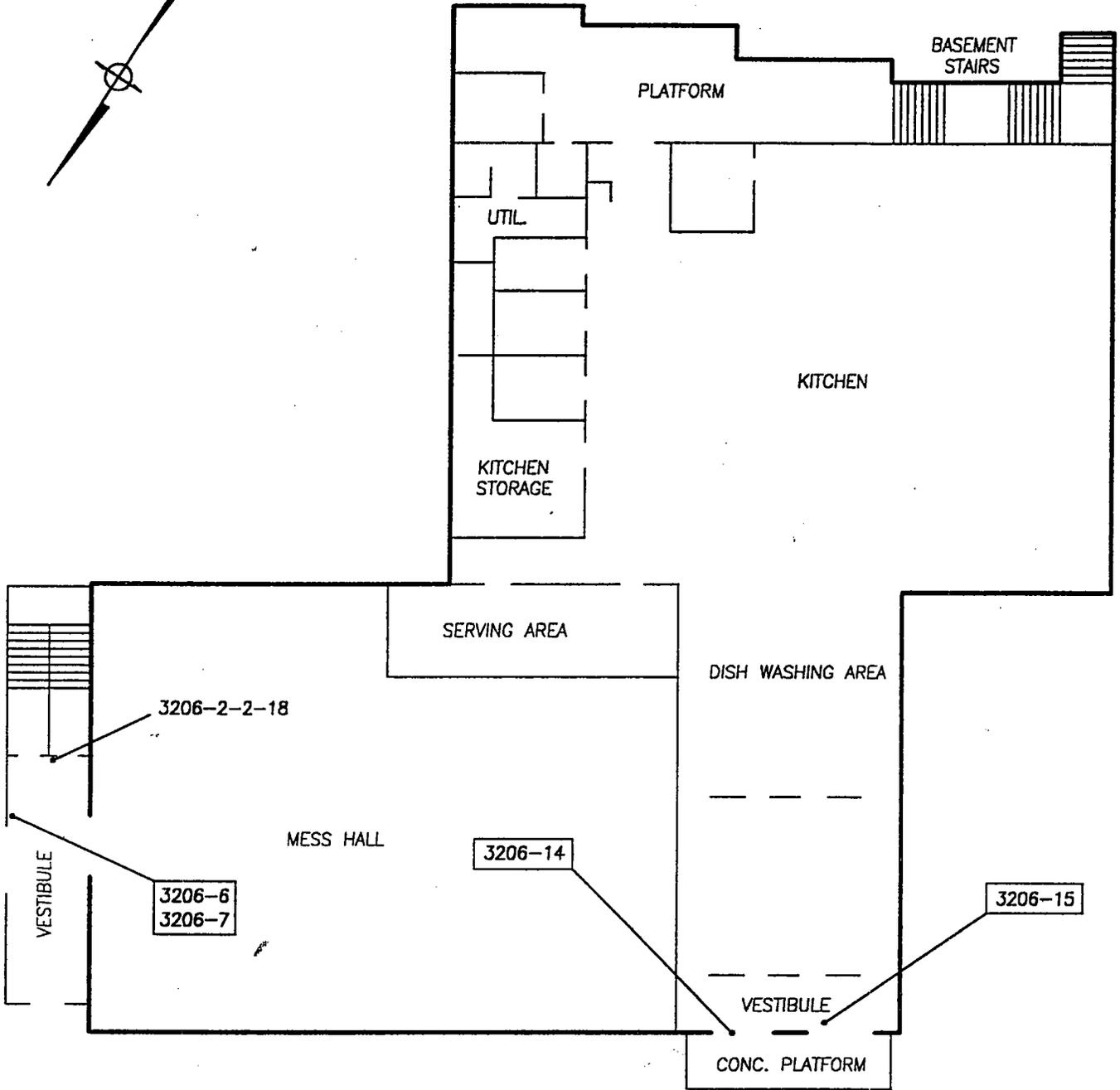
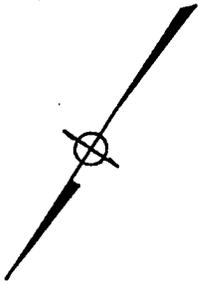


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**BUILDING NO. 3206
 BASEMENT
 FORT LEE, VIRGINIA**

RENOVATION DEMOLITION SURVEY

DRAWN: SLH	SCALE: NTS	PROJ. NO.: Z54-299
CHKD: DWW	DATE: 11/98	DWG NO.: 6



* NOTE - BOXED SAMPLE NUMBERS COLLECTED 12/98

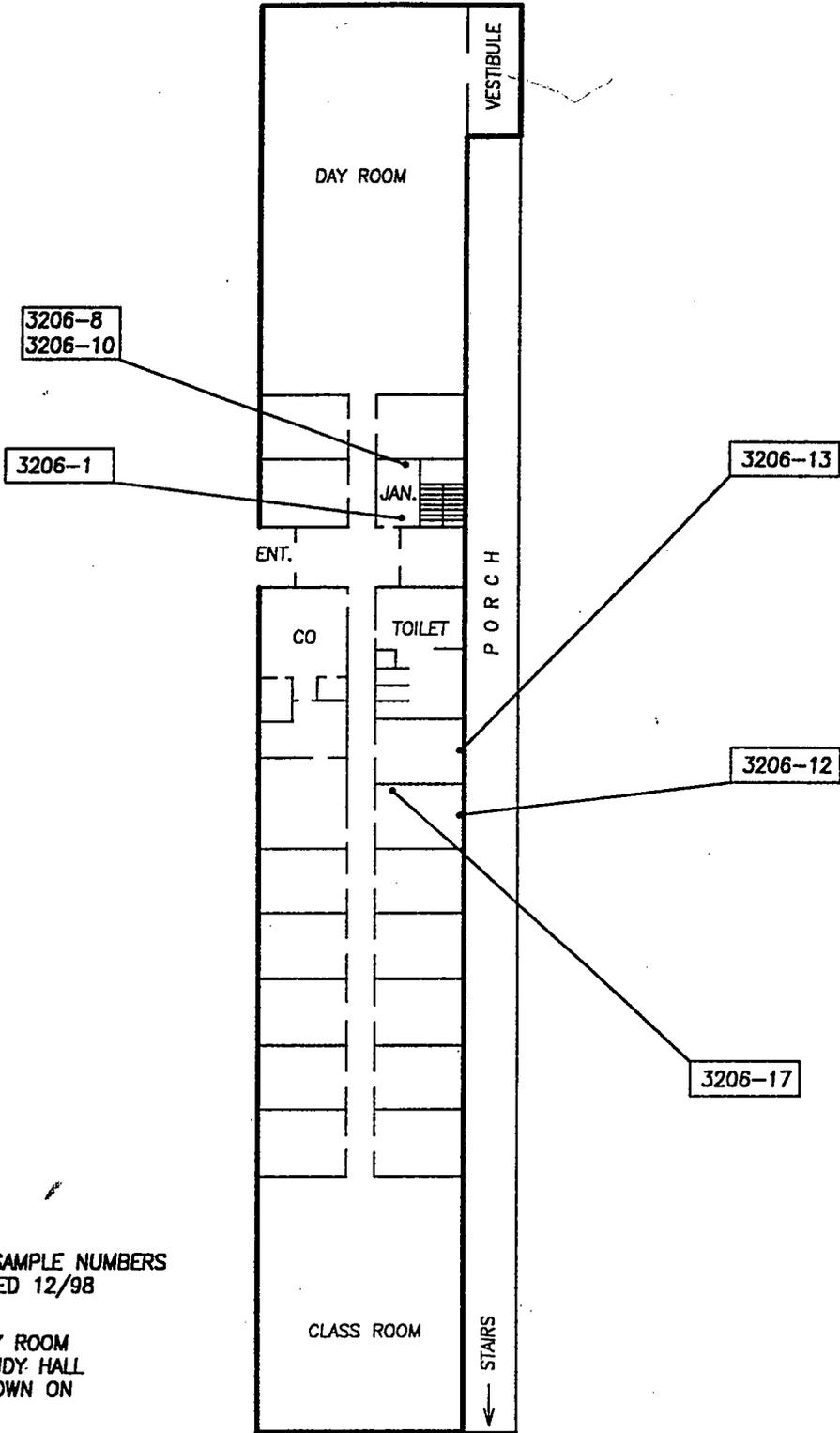
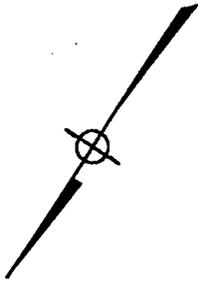


FROEHLING AND ROBERTSON, INC.
 "OVER ONE HUNDRED YEARS OF SERVICE"

**BUILDING NO. 3206
 FIRST FLOOR
 FORT LEE, VIRGINIA**

RENOVATION DEMOLITON SURVEY

DRAWN: SLH	SCALE: NTS	PROJ. NO.: Z54-299
CHKD: DWW	DATE: 11/98	DWG NO.: 7



* NOTE - BOXED SAMPLE NUMBERS
COLLECTED 12/98

LAUNDRY ROOM
AND STUDY HALL
NOT SHOWN ON
PLANS

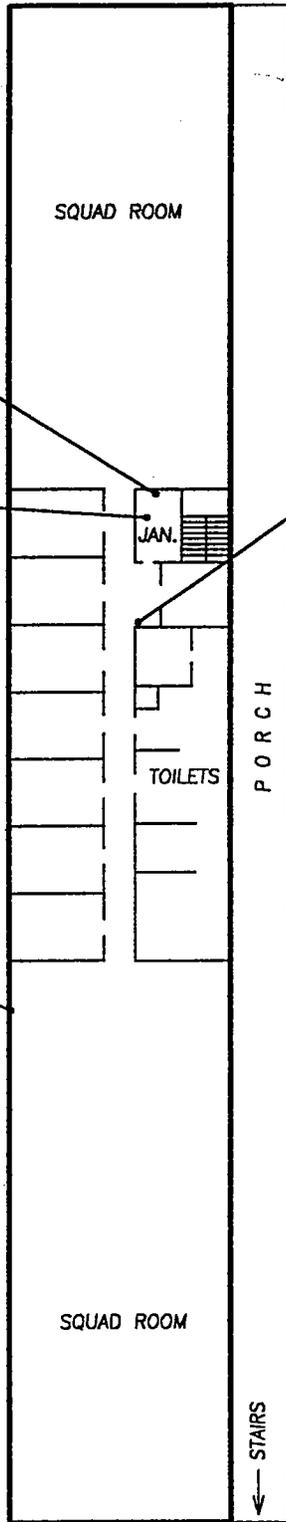
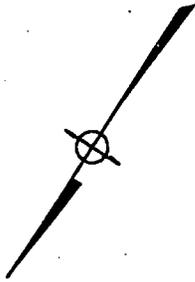


FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

**BUILDING NO. 3206
FIRST FLOOR
FORT LEE, VIRGINIA**

RENOVATION DEMOLITION SURVEY

DRAWN: SLH	SCALE: NTS	PROJ. NO.: Z54-299
CHKD: DWW	DATE: 11/98	DWG NO.: 7A



3206-9

3206-4
3206-5

3206-2
3206-3A
3206-3B

3206-11

* FROM LAUNDRY
ROOM NOT SHOWN
ON PLANS

* NOTE - BOXED SAMPLE NUMBERS
COLLECTED 12/98

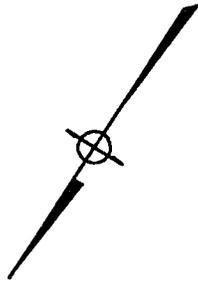


FROEHLING AND ROBERTSON, INC.
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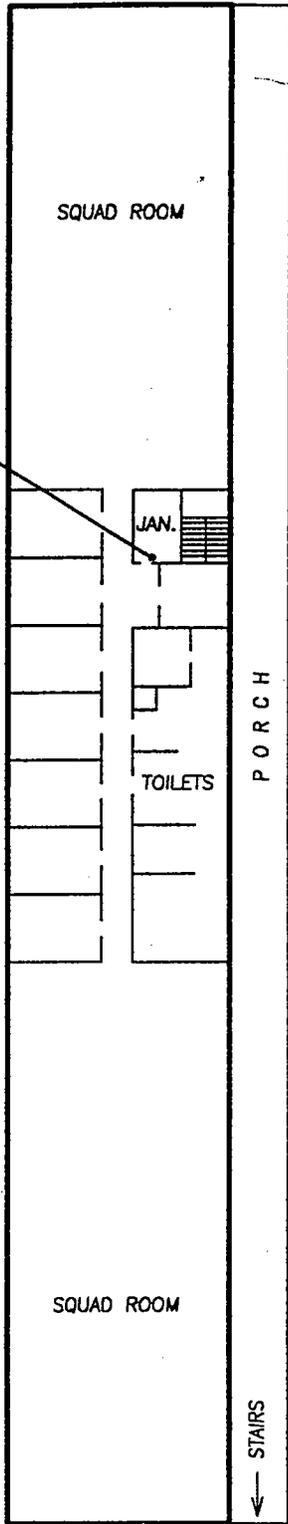
**BUILDING NO. 3206
SECOND FLOOR
FORT LEE, VIRGINIA**

RENOVATION DEMOLITION SURVEY

DRAWN: SLH	SCALE: NTS	PROJ. NO.: Z54-299
CHKD: DWW	DATE: 11/98	DWG NO.: 7B



3206-3-2-19



FROEHLING AND ROBERTSON, INC.
"OVER ONE HUNDRED YEARS OF SERVICE"

**BUILDING NO. 3206
THIRD FLOOR
FORT LEE, VIRGINIA**

RENOVATION DEMOLITION SURVEY

DRAWN: SLH	SCALE: NTS	PROJ. NO.: Z54-299
CHKD: DWV	DATE: 11/98	DWG NO.: 7C



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March 8, 1999

Page 1 of 1

Lab #: 9903050
 Client: F&R Environmental
 Attn: Dave Walker

Project: Building 3206, Ft. Lee
 Project #: Z54-290 E
 Analyst: AJN

Date Sampled: 3/5/99
 Date Received: 3/5/99
 Date Analyzed: 3/5/99

Lab ID	CLIENT ID	LABORATORY SAMPLE DESCRIPTION	HOMO-GENOUS	% ASBESTOS FIBERS	OTHER FIBERS	NON-FIBROUS
9903050-01	3206-399-1	Insulation/Friable/Fibrous Granular/Gray	Yes	ND	40% MG	55% CA 5% NF
9903050-02	3206-399-2	Insulation/Friable/Fibrous Granular/Gray	Yes	ND	40% MG	7% NF 52% CA 1% Q
9903050-03	3206-399-3	Insulation/Fibrous/Woven Jacket/OB/Beige	No	ND	30% FG	55% NF 15% CA
9903050-04	3206-399-4	Insulation/Friable/Fibrous Granular/Gray	Yes	ND	40% MG	7% NF 53% CA
9903050-05	3206-399-5	Insulation/Friable/Fibrous Granular/Gray	Yes	ND	40% MG	7% NF 53% CA

AC - Actinolite
 AM- Amosite
 AN - Anthophyllite
 CH - Chrysotile
 CR - Crocidolite
 FT - Fibrous Tremolite
 ND- None Detected

CF - Cellulose Fiber
 FG - Fibrous Glass
 MG- Mineral Wool
 OF - Other Fiber
 SF - Synthetic Fiber
 T - Talc
 WL- Wollastonite
 AH - Animal Hair

CA- Carbonate
 MF- Metal Foil
 NF - Other Non-Fibrous
 PP - Perlite/Pumice
 Q - Quartz
 MI - Mica

Samples were analyzed by EPA 600/R-93/116. This report shall not be reproduced except in full, without the written approval of this laboratory. This report may not be used to claim product endorsement by NVLAP or any US Government agency. Report does not imply results for anything other than samples tested. PLM is not consistently reliable in detecting the presence of asbestos in nonfriable, organically bound material. AEM is recommended for confirmation of PLM data.

Audrey N. Brubeck
 Laboratory Manager

ANB/anb

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA 23261-7524
 TELEPHONE (804) 284-2701 • FAX (804) 284-1202

CERTIFICATIONS: AIHA ELLAP - 8942
 NIST NVLAP - 102060-0
 VIRGINIA DRINKING WATER - 00150
 NORTH CAROLINA DEHNR- 432
 SOUTH CAROLINA DHEC - 93010001 & - 93010002
 CHARTER MEMBER- ACIL

BRANCHES: ASHEVILLE, NC • ATLANTA, GA • BALTIMORE, MD • CHARLOTTE, NC
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1881
 December 11, 1998

Page 1 of 2

Lab #: 9812032
 Client: F&R Environmental
 Attn: David Walker

Project: Ft. Lee, Bldg. 3206 Asbestos Sampling
 Project #: Z54-291 E

Date Sampled: 12/03/98
 Date Received: 12/04/98

Analyst: AJN

Date Analyzed: 12/07/987

Lab ID	CLIENT ID	LABORATORY SAMPLE DESCRIPTION	HOMO-GENOUS	% ASBESTOS FIBERS	% OTHER FIBERS	% NON-FIBROUS
9812032-01*	3206-1 Wall Plaster, 1 st Fl. Jan. Closet	Cementitious Gray	Yes	ND	---	32%-Q 55%-Q 23%-NF
9812032-02	3206-2 Wall Plaster, Base, 2 nd Fl. Corridor	Cementitious Tan	Yes	ND	Trace-CF	30%-Q 60%-CA 10%-NF
9812032-03	3206-3 Wall Plaster, Finish, 2 nd Fl. Corridor	Hard/Granular White	Yes	ND	---	90%-CA 10%-NF
9812032-03A*	3206-3 Skim Coat	Friable/Granular White	Yes	ND	---	80%-CA 20%-NF
9812032-04**	3206-4 12" VFT, 2 nd Fl. Jan. Closet	N.O.B. Brown	Yes	ND	---	40%-CA 60%-NF
9812032-05	3206-5 Mastic from 12" VFT	Soft/Organically Bound Black	Yes	6%-CH	---	1%-CA 93%-NF
9812032-06**	3206-6 12" VFT, 1 st Fl. Mess Hall Vestibule	N.O.B. Brown	Yes	ND	---	40%-CA 60%-NF
9812032-07	3206-7 Mastic from 12" VFT	Soft/Organically Bound Black	Yes	5%-CH	---	2%-Q 1%-CA 92%-NF
9812032-08	3206-8 Pipe Elbow Mud, Dom. Water 1 st Fl. Jan. Closet	Compacted/Fibrous White	Yes	50%-CH	---	10%-CA 40%-NF
9812032-09	3206-9 Pipe Jacket Insul., Dom. Water 2 nd Fl. Jan. Closet	Papery/Fibrous Tan	Yes	15%-CH	80%-CF	5%-NF

AC - Actinolite
 AM - Amosite
 AN - Anthophyllite
 CH - Chrysotile
 CR - Crocidolite
 FT - Fibrous Tremolite
 ND - None Detected

CF - Cellulose Fiber
 FG - Fibrous Glass
 MG - Mineral Wool
 OF - Other Fiber
 SF - Synthetic Fiber
 T - Talc
 WL - Wollastonite
 AH - Animal Hair

CA - Carbonate
 MF - Metal Foil
 NF - Other Non-Fibrous
 PP - Perlite/Pumice
 Q - Quartz
 MI - Mica

*Paint layers not analyzed.
 **Recommend AEM confirmation.

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 CHARTER MEMBER- ACIL

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 GREENVILLE, SC • RALEIGH, NC • ROANOKE, VA • STERLING, VA • WINSTON-SALEM, NC



Lab ID	CLIENT ID	LABORATORY SAMPLE DESCRIPTION	HOMOGENOUS	% ASBESTOS FIBERS	% OTHER FIBERS	% NON-FIBROUS
9812032-10	3206-10 Pipe jacket Insul., dom. Water, 1 st Fl. Jan. Closet	Papery/Fibrous Tan/White	No	5%-CH	85%-CF	10%-NF
9812032-11	3206-11 Window caulk, 2 nd Fl. Laundry Rm. S. Side	Rubbery/Organically Bound Dark gray	Yes	ND	---	100%-NF
9812032-12	3206-12 Window caulk, 1 st Fl. Study Hall, N. Side	Rubbery/Organically Bound Dark gray	Yes	ND	---	100%-NF
9812032-13	3206-13 Window caulk, 1 st Fl. Laundry Rm., N. Side	Rubbery/Organically Bound Dark gray	Yes	ND	---	100%-NF
9812032-14	3206-14 2x2 Ceil. Tile, Kitchen Vestibule	Fibrous Gray	Yes	ND	35%-MG 45%-CF	15%-PP 5%-NF
9812032-15	3206-15 2x2 Ceil. Tile, Kitchen Vestibule	Fibrous Gray	Yes	ND	35%-MG 45%-CF	15%-PP 5%-NF
9812032-16	3206-16 TSI Debris, Boiler Rm. Floor	Friable/Granular/Fibrous Gray	Yes	ND	28%-MG 4%-CF	30%-CA 38%-NF
9812032-17	3206-17 12" VFT, 1 st Fl. Laundry Rm.	N.O.B. Tan	Yes	ND	---	40%-CA 60%-NF

AC - Actinolite
 AM - Amosite
 AN - Anthophyllite
 CH - Chrysotile
 CR - Crocidolite
 FT - Fibrous Tremolite
 ND - None Detected

CF - Cellulose Fiber
 FG - Fibrous Glass
 MG - Mineral Wool
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Audrey N. Brubeck
 Laboratory Manager

ANB/psg



CHAIN OF CUSTODY RECORD

Please Print CLIENT ADDRESS
ATTN: Dave Walker
PHONE/FAX

Dep't 57

FROEHLING & ROBERTSON, INC.
P.O. BOX 27524
RICHMOND, VIRGINIA 23261
TEL: (804) 264-2701
FAX: (804) 264-1202

Terms and Conditions: This Agreement shall be subject to all of the terms and conditions set forth on the reverse side hereof, which terms and conditions are expressly made a part of this Agreement and any reports issued by F&R pursuant to this Agreement.

LAB PROJECT #	PROJECT NAME/NUMBER	PLEASE PRINT	DATE SAMPLED	TIME SAMPLED	BY	PLEASE PRINT	LAB I.D.	DATE SAMPLED	TIME SAMPLED	BY	PLEASE PRINT	CONTAINER #	SAMPLE MATRIX	PLM ASBESTOS ID	REQUESTED TEST PARAMETERS	PLEASE PRINT
9812002	254-291E Ft. Lee, Bldg 3206	Asbestos Sampling	12-3-98		X	3206-1	01					1	Bulk	X	Wall Marker, 1 st Fl. Jan. Closet	
					X	-2	02					1		X	Wall Plaster Base, 2 nd Fl. Corridor	
					X	-3	03					1		X	Wall Plaster Finish, 2 nd Fl. Corridor	
					X	-4	04					1		X	12" Brown VFT white specks, 2 nd Fl. Jan. Closet	
					X	-5	05					1		X	Mastic from 12" Brown VFT	
					X	-6	06					1		X	12" Brown VFT/white specks, 1 st Fl. Mess Hall/Vestibule	
					X	-7	07					1		X	Mastic from 12" Brown VFT	
					X	-8	08					1		X	Pipe Elbow Mud, Dam. Water 1 st Fl. Jan. Closet	
					X	-9	09					1		X	Pipe Jacket Insul., Dam. Water, 2 nd Fl. Jan. Closet	

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	COMMENTS: Please Print
<u>Dave Walker</u>	12/3/98	8:10	<u>Paul Millick</u>	12/14/98	08:10	STD TAT

Page 1 of 2

SHIPPED VIA _____ DATE _____ pH _____
Cooler Temp. _____
Sample Temp. _____



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CERTIFICATE OF ANALYSIS

December 16, 1998

Page 1 of 1

LAB #: 9812031
 CLIENT: F&R Environmental
 Attn: David Walker
 PROJECT: Ft. Lee Bldg. 3206, Lead Paint Sampling
 PROJECT #: Z54-281 E
 SAMPLES COLLECTED BY: D. Walker
 LAB RECEIPT: 12/04/98, 0810

<u>PARAMETER</u>	<u>ANALYSIS DATE/TIME</u>	<u>METHOD</u>	<u>ANALYST</u>
Lead - paint	12/14/98, 1500	ASTM D3335-85a	MDW
Digestion - paint	12/10/98, 1500	ASTM D3335-85a	MDW

Results:

F&R #: 9812031-01 9812031-02
 SAMPLE ID: 3206-LP-1 3206-LP-2
 Date/Time: 12/3/98 12/3/98
 Matrix: paint chips/grab paint chips/ grab

Lead, % 0.23 <0.01

Audrey N. Brubeck
 Laboratory Manager

ANB/psg

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA 23261-7524
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 VIRGINIA DRINKING WATER - 00150
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 CHARTER MEMBER- ACIL

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 GREENVILLE, SC • RALEIGH, NC • ROANOKE, VA • STERLING, VA • WINSTON-SALEM, NC

TRC Building #:
 Project Number: 9455-J41-500
 Project Name: Fort Lee Postwide Inspection
 Inspector: S.S./E.M.
 Date Inspected: 10/29/91

Building Number: 3206
 Building Name:
 Original Inspection By: No previous inspection
 Date Of Original Inspection: N/A
 Building Usage Code: 1
 Year Constructed: 1952

Area Number: 3		Area Description: Boiler Room														
Location Of The Material	Sample Number	Percent Abesor	Material Description	Code	Quantity: Unit	MF	A	MC	AL	# OCC.	DURATION	Priority Index	Removal Cost	Cost To Replace	Total Cost	
Near the Substrate	3206-1-6-09	ND <1%	Generator tank insulation	Z	264 SF	3	3	1	2	1	0.01	0	\$0	\$0	\$0	
Near the Substrate	3206-1-6-10	ND <1%														
Near the Substrate	3206-1-6-11	ND <1%														
	3260-1-7-12	65%	Small tank insulation	D	30 SF	3	3	1	2	1	0.01	7.5	\$365	\$1,110	\$1,475	
	3260-1-7-13	ND <1%														
	3260-1-7-14	ND <1%														
Chimney	3206-1-8-15	ND <1%	Flue insulation	Z	900 SF	3	2	1	2	1	0.01	0	\$0	\$0	\$0	
	3206-1-8-16	ND <1%														
	3206-1-8-17	ND <1%														
Other Unique Characteristics:												Total #	3	\$365	\$1,110	\$1,475

Area Number: 4		Area Description: First Floor														
Location Of The Material	Sample Number	Percent Abesor	Material Description	Code	Quantity: Unit	MF	A	MC	AL	# OCC.	DURATION	Priority Index	Removal Cost	Cost To Replace	Total Cost	
Walls	3206-2-2-18	ND <1%	Plaster	Z	1200 SF	1	3	1	3	13	40	0	\$0	\$0	\$0	
Other Unique Characteristics:												Total #	4			

TRC Building #: 3206
 Project Number: 9455-341-500
 Project Name: Fort Lee Postwide Inspection
 Inspector: S.S./F.M.
 Date Inspected: 10/29/91

Building Number: 3206
 Building Name:
 Original Inspection By: No previous inspection
 Date Of Original Inspection: N/A
 Building Usage Code: 1
 Year Constructed: 1952

Area Number: 5		Area Description: Second Floor										Total #			
Location Of The Material	Sample Number	Percent Absorption	Material Description	Code	Quantity: Unit	MF	A	MC	AL	# OCC	DURATION	Priority Index	Removal Cost	Cost To Replace	Total Cost
Walls	3206-3-2-18	ND <1% Plaster		Z	12000 SF	1	3	1	3	13	40	0	\$0	\$0	\$0
Other Unique Characteristics:															Total #
															5

Area Number: 6		Area Description: Third Floor										Total #			
Location Of The Material	Sample Number	Percent Absorption	Material Description	Code	Quantity: Unit	MF	A	MC	AL	# OCC	DURATION	Priority Index	Removal Cost	Cost To Replace	Total Cost
Walls	3206-3-2-19	ND <1% Plaster		Z	12000 SF	1	3	1	3	13	40	0	\$0	\$0	\$0
Other Unique Characteristics:															Total #
															6

TRC Building #:
 Project Number: 9455-141-500
 Project Name: Fort Lee Postwide Inspection

Building Number: 3206
 Building Name:
 Original Inspection By: No previous inspection
 Date Of Original Inspection: N/A
 Building Usage Code: 1
 Year Constructed: 1952

Inspector: S.S./F.M.
 Date Inspected: 10/29/91

Area Description: Basement														
Location Of The Material	Sample Number	Percent Asbestos	Material Description	Code	Quantity: Unit	MATERIAL CONDITIONS CODES				Priority Index	Removal Costs	Cost To Replace	Total Costs	
						MF	A	MC	AL					#
On Fiberglass Insulation	3206-1-1-01	ND <1%	Mudded fitting	Z	60 SF	3	2	1	1	13	40	0	\$0	\$0
	3206-1-1-02	ND <1%												
	BD686	0%												
Walls	3206-1-2-03	ND <1%	Plaster	Z	1600 SF	1	3	1	1	13	40	0	\$0	\$0
Total #											1			

Other Unique Characteristics:

Area Description: Crawspace/Pipe Tunnel															
Location Of The Material	Sample Number	Percent Asbestos	Material Description	Code	Quantity: Unit	MATERIAL CONDITIONS CODES				Priority Index	Removal Costs	Cost To Replace	Total Costs		
						MF	A	MC	AL					#	OCC
On Pipes	3206-1-3-06	65%	Mg insulation	A	2400 FT	3	1	2	1	1	0.01	0.00405	\$25,200	\$24,000	\$49,200
On Pipes	3206-1-3-07	25%													
On Pipes	3206-1-4-20	25%	Air cell insulation	A	600 FT	2	1	2	1	1	0.01	0.00025	\$6,300	\$6,000	\$12,300
On Asbestos Pipe Insulation	3206-1-4-08	ND <1%													
	3206-1-5-04	65%	Mudded fittings	A	500 SF	3	1	2	1	1	0.01	0.00405	\$5,250	\$5,000	\$10,250
	3206-1-5-05	90%													
Total #											2				
Total #												\$36,750	\$35,000	\$71,750	

Other Unique Characteristics: