United States Air Force Base
Environmental Restoration Program

Final

Work Plan

Industrial Area Buildings
Sub-Slab Soil Vapor Survey

Former Plattsburgh Air Force Base
Plattsburgh, New York

November 2006

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FINAL
INDUSTRIAL AREA BUILDINGS
SUB-SLAB SOIL VAPOR SURVEY
WORK PLAN

FORMER PLATTSBURGH AIR FORCE BASE

PLATTSBURGH, NEW YORK

Prepared for:

THE AIR FORCE CENTER FOR ENVIRONMETNAL EXCELLENCE

PREPARED by:

URS CORPORATION

NOVEMBER 2006

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1.0 INTRODUCTION

This Work Plan presents details of a sub-slab soil vapor survey that will be conducted in the industrial area east of the Flightline ramp at the former Plattsburgh Air Force Base (AFB). The study will assess the concentrations of volatile organic compounds (VOCs) beneath 14 selected occupied and unoccupied commercial/industrial buildings in this area. VOCs may be present in the soil vapor under the building slabs as a result of volatilization from chemicals present in groundwater beneath the buildings. Contaminants spilled into groundwater before 1990, at the former Fire Training Area (site FT-002) located about 1-mile to the west-northwest, have migrated into the groundwater beneath the industrial area via advective transport (movement with the flow of groundwater) within the sand aquifer (Figure 1). VOC concentrations in groundwater in the industrial area ranged from non-detection to 100 µg/L in the latest sampling event (Fall 2005).

The Air Force has evaluated health risks posed by groundwater contamination in this area as part of the remedial investigation (RI) for the FT-002/Industrial Area Groundwater Operable Unit (URS 2001). Using observed groundwater contaminant concentrations, the Air Force modeled potential health risks posed by contaminants volatilizing from groundwater and migrating into the air inside buildings; significant risks were not indicated by the analysis. Air samples were not collected as part of the evaluation. To control groundwater contaminant migration and to improve groundwater quality over time, the Air Force has installed and is operating three large groundwater collection trenches at the base (Figure 1) including one along the eastern edge of the Flightline ramp and one along Idaho Avenue. Groundwater quality has been observed to be improving across the former base.

The Air Force, in cooperation with the New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), and United States Environmental Protection Agency (USEPA), is conducting this study to confirm the results of the modeling conducted during the RI and to evaluate whether additional sampling activity, such as indoor air sampling, is needed to assure the protection of human health.

1.1 Background

Plattsburgh AFB, located in Clinton County in northeastern New York State, is bordered on the north by the City of Plattsburgh, the south by the Salmon River, on the west by Interstate

87, and on the east by Lake Champlain. The base is approximately 26 miles south of the Canadian border and 167 miles north of Albany. Plattsburgh AFB was closed on September 30, 1995 as part of the (third round of) base closures mandated under the Defense Base Closure and Realignment Act of 1993. As part of the Air Force's Installation Restoration Program (IRP) and Base Realignment and Closure (BRAC) Program, Plattsburgh AFB has initiated activities to identify, evaluate, and remediate identified hazardous material disposal sites. The IRP at Plattsburgh AFB is being implemented according to a Federal Facilities Agreement (FFA), Docket No.: II-CERCLA-FFA-10201, signed between the Air Force, USEPA, and NYSDEC on July 10, 1991.

The industrial area situated east of the flightline ramp consists primarily of aviation support buildings that supported flight operations when the base was active prior to 1995. The property is currently owned by the Air Force, however the Plattsburgh Airbase Redevelopment Corporation (PARC) and the County of Clinton (west of Arizona Avenue) are administering reuse. PARC is responsible for maintaining property, marketing and controlling reuse, leasing and managing property, and developing facilities, as necessary, to promote advantageous reuse. The County of Clinton is administering airfield operations. Of the 14 building that will be sampled during this event, 8 have been improved/renovated and are under lease, 1 is a new building that has been leased, 2 are unimproved buildings currently leased for cold storage, and 3 are unimproved buildings that are presently unoccupied. The sizes of the buildings range from approximately 1,700 to approximately 166,000 square feet.

On October 19, 2006, representatives of the Air Force, URS (the Air Force's consultant), NYSDEC, NYSDOH, and USEPA inspected each facility to evaluate potential sampling locations and to identify specific potential issues that each building might pose to the sub-slab sampling effort. The group was able to inspect the inside of most of the buildings, however some of the buildings were inspected only from the outside. The sampling program outlined in this Work Plan reflects the recommendations for sampling means and methods and sampling locations discussed among the parties present at the site visit.

Groundwater in the industrial area is encountered in an unconfined sand aquifer that is found between 4 to 10 feet below ground surface. Silty clay underlies the sand at depths of 12 to 30 feet below ground surface. The depth to groundwater and depth to clay generally decrease in an easterly direction in the industrial area.

1.2 Objective

The objective of this Work Plan is to describe field activities targeted to assess the occurrence and concentration of volatile contaminants in the soil vapor beneath 14 specific buildings in the industrial area at the former Plattsburgh AFB. The data will be used by the BRAC Cleanup Team (BCT) to evaluate whether additional sampling activity, such as indoor air sampling, is needed to assure the protection of public health.

2.0 SCOPE OF WORK

Based on the historical analytical results and analyses from various Plattsburgh AFB subsurface environmental investigations, the BCT has agreed to investigate the potential extent of sub-slab vapor impacted by VOCs in groundwater in the industrial area east of the Flightline ramp. A total of 14 buildings in the industrial area have been selected for sub-slab vapor sampling (Figure 2). The rationale for inclusion in the sampling effort and the number of sub-slab samples proposed for each building is presented in Table 1. The proposed approximate sub-slab sample locations within each building are shown on Figures 3 through 16.

Specific sub-slab sample collection locations will be selected by observing the condition of the building floor slab for apparent penetrations such as concrete floor cracks, floor drains or sump holes. The locations will ideally be central to the building away from the foundation walls, cracks, and apparent penetrations. If possible, sample locations will be situated slightly off-center in the direction where groundwater contamination has been detected or has been detected at a higher concentration. The Air Force, NYSDEC, NYSDOH, and USEPA reviewed together the potential sampling locations in each building. The proposed locations shown on Figures 3 through 16 also bias sampling toward areas of frequent human activity or office areas. Sampling personnel will review the proposed locations with the tenant. The Air Force will also provide the tenant with a Fact Sheet that gives an overview of the sampling effort. The Fact Sheet is presented in Appendix B. After receiving permission for sampling the specific location from the tenant, the locations selected will be marked, documented and photographed. If practicable, features such as floor drains or sumps will be sealed during the collection of the sub-slab sample using polyethylene sheeting and sand bags.

Samples will be collected using Summa canisters fitted with 24-hour flow regulators. The samples will be collected at no greater than 0.2 liter per minute (L/min). The Summa canisters will be analyzed using USEPA Method TO-15 with a minimum-reporting limit of 1.0 micrograms per cubic meter (µg/m3). Sample parameters, volume requirements, and holding times are provided in Table 2. A list of the required QA/QC samples is provided in Table 3. Complete sampling procedures for collection of the sub-slab samples are presented in Section 3. Once the raw sample results are available, a data usability review will then be conducted. The results will be available approximately eight weeks following sample collection.

3.0 FIELD SAMPLING PLAN

This Field Sampling Plan (FSP) is designed to provide detailed, step-by-step procedures for the field activities outlined in Section 2. It will serve as the field procedures manual to be strictly followed by all field personnel. Adherence to these procedures will ensure the quality and defensibility of the data collected in the field.

3.1 Sub-Slab Vapor Sampling

Summary: The following procedures will be used to collect representative sub-slab vapor samples. The samples will be labeled following procedures described in Section 3.4. Sample parameters, volume requirements and holding times are provided in Table 2. A list of the required QA/QC samples is provided in Table 3.

3.1.1 Sub-Slab Soil Vapor Sampling Procedures

The sub-slab vapor sampling procedures are summarized below:

1. Drill a one-inch (1") diameter hole about one-inch (1") into the concrete using an electric hammer drill. Extend the hole through the remaining thickness of the slab using a ½ -inch drill bit. Lengthen the hole about three inches (3") beyond the sub-slab using either a drill bit or a steel probe rod.

   Note: Additional measures must be implemented to maximize dust suppression when drilling within the NB-C Building (Wyeth Pharmaceuticals). See Section 3.3 for details.

2. Insert one end of a $^{3}/_{8}$-inch outside diameter by ¼-inch inside diameter Teflon-lined sample tubing into the ½-inch hole.

3. Seal the annular space with melted bees wax.

4. Connect the sample tubing to the inlet port of an air-sampling pump with polyethylene discharge tubing. The discharge port of the air-sampling pump will be attached to a 1 L Tedlar bag. Purge approximately one liter (1L) of gas from the subsurface probe into the Tedlar bag, using the air-sampling pump. The purge rate will not exceed 0.2 L/min. Empty the Tedlar bag containing the sub-slab purged air **outside the building.**

5. Record the canister's serial number on the Summa Canister Sampling Field Data Sheet (Appendix A).

6. Assign sample identification to the canister identification tag and record on the chain-of-custody (COC) (Appendix A), and the Summa Canister Sampling Field Data Sheet.

7. Remove brass plug from canister fitting.

Using Flow Controllers Without a Built in Pressure Gauge

1. Attach the pressure gauge provided by the laboratory to the Summa canister, open valve completely, record reading on the Summa Canister Sampling Field Data Sheet, close valve completely, and remove the pressure gauge. If the canister does not show a vacuum, do not use.

2. Attach a pre-calibrated/certified 24-hour flow controller, and particulate filter to the Summa canister. Note: Some laboratories provide a built-in filter within the regulator apparatus. **Do not reuse flow controllers** between locations.

3. After purging the hole, remove the sampling pump from the Teflon-lined tubing and attach the tubing to the Summa canister, via the flow controller/particulate filter assembly.

4. Open canister valve to initiate sample collection and record start time and date on the canister identification tag and on the Summa Canister Sampling Field Data Sheet.

5. Take a photograph of canister setup and surrounding area.

6. Clean up any dust/debris with a brush and dustpan. Note: Additional measures must be implemented to maximize dust suppression within the NB-C Building (Wyeth Pharmaceuticals). See Section 3.3 for details.

7. After 24 hours, record sampling end time ands pressure on the Summa Canister Sampling Field Data Sheet, and close valve. There should still be a slight vacuum in the Summa canister. If no vacuum remains in the canister, do not send the canister for analysis. Retake the sample using the same procedure with a fresh canister.

8. If the canister does not show a significant net loss in vacuum after sampling, evaluate and document the problem. To determine whether to use another summa canister to

recollect the sample, **contact the project manager immediately (Don Hunt @ 716-923-1210).**

9. Disconnect tubing and remove flow controller/particulate filter assembly from canister.
10. Seal the hole in the building slab with hydraulic cement patch.
11. Ship canister standard overnight, or transport directly, with COC to STL Laboratories of Burlington, Vermont for analyses using USEPA Method TO-15 with a minimum reporting limit of 1.0 $\mu g/m^3$.

Using Flow Controllers With a Built in Pressure Gauge

1. Attach the flow controller provided by the laboratory to the Summa canister inlet (you must have one for each summa canister). Read the pressure gauge. **Do not reuse flow controllers between locations.**
2. After purging the hole, remove the sampling pump from the Teflon-lined tubing and attach tubing to the Summa canister, via the flow controller/particulate filter assembly.
3. Open canister valve to initiate sample collection and record start time and date on the canister identification tag and on the Summa Canister Sampling Field Data Sheet.
4. After 24 hours, close the Summa canister valve completely and record the time on the Summa Canister Sampling Field Data Sheet.
5. Disconnect the tubing from the Summa canister.
6. Record the reading on the pressure gauge on the Summa Canister Sampling Field Data Sheet. There should still be a slight vacuum in the Summa canister. If no vacuum remains in the canister, do not send the canister for analysis. Retake the sample using the same procedure with a fresh canister.
7. If the canister does not show a significant net loss in vacuum after sampling, evaluate and document the problem. To determine whether to use another summa canister to recollect the sample, **contact the project manager immediately (Don Hunt @ 716-923-1210).**

8. Remove the flow controller.

9. Seal the hole in the building slab with hydraulic cement patch.

10. Ship canister standard overnight, or transport directly, with COC to STL Laboratories of Burlington, Vermont for analyses using USEPA Method TO-15 with a minimum reporting limit of 1.0 $\mu g/m^3$.

3.1.2 Observation Checklist

Prior to sampling, a building inventory of chemicals will be obtained from the tenant. It is desirable to evaluate potential background sources for the contaminants that will be tested since it is possible that indoor air may unintentionally be sampled as a result of unsealed floor drains significant slab cracks. Observation checklist forms (Appendix A) will be used to identify factors that may be relevant to the sampling, or may aid in the interpretation of the results. The general procedures to be followed while completing the observation checklist are summarized below:

- Identify areas in the vicinity of the sampling point that may be used for storage of chemical containers.
- If available, an inventory of chemicals used in the building will be obtained from the tenant.
- Other potential sources that may influence air quality testing that should be noted including: new construction/remodeling/ painting; new carpeting; freshly dry-cleaned clothing; and the presence of tobacco smokers.
- Any significant cracks, sumps, floor drains, or other openings to the subsurface that may provide preferential pathways for vapors to enter the building also will be noted.

3.2 Dust Suppression Measures for NB-C Building

Wyeth Pharmaceuticals currently utilizes the building identified as new building "C" (NB-C) for the storage and shipping of pharmaceuticals. Because of their various requirements for a dust-free environment (e.g., technical clean rooms), the following dust suppression measures shall be implemented during all four of the sub-slab vapor port installations in building NB-C:

1. Drilling speeds shall be kept to an absolute minimum, and water shall be applied to the boring while drilling to minimize and collect dust particles.

2. A vacuum system fitted with HEPA filtration shall be utilized while drilling to capture dust particles. This system must not re-vent or suspend dust particles to the air.

3. Poly sheeting with a minimum thickness of 3-mil shall be utilized to seal any doors, windows, vents, etc., to encapsulate the drilling area to the greatest extent possible, and shall be fixed in place with duct tap or any tape of equivalent reliance.

4. An enclosure (e.g., constructed of hard wood laths and poly sheeting) for the drill motor shall be utilized during sub-slab vapor port installations. The enclosure will be open on one side only for drill motor operation. The air outside of the enclosure shall be monitored for suspended particles using a real time dust monitor (e.g., MIE PDR 1200 or Casella Microdust Pro). Drilling operations will be suspended if dust particles are detected until a remedy is implemented. If necessary, additional measures shall be implemented to satisfy Wyeth Pharmaceuticals' air quality requirements.

3.3 Field Quality Control

Quality control of sub-slab vapor sampling will include the collection of field duplicate samples. Field duplicate samples will be collected at a rate of one per ten samples (Table 3).

Field duplicates for sub-slab samples will be collected by attaching the T-fitting supplied by the laboratory to two Summa canisters with attached regulators. The inlet for the T-fitting will then be attached to the sub-slab sample tubing. For sampling, both Summa canister valves are opened and closed simultaneously.

3.4 Sample Labeling

Summary: In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the following procedures will be used:

Procedure: Each sub-slab sample will have the following information placed on the laboratory supplied sample label:

- Site name
- Sample identification
- Project number
- Date/time
- Sampler's initials
- Analysis required

The serial number of the canister and regulator used during sampling will also be noted on the label and on the COC.

The following terminology shall be used for the soil vapor sample identification:

Sub-Slab Vapor Sample

The designation BLDG-AS-xx will be used for sub-slab locations, where BLDG designates a building location and xx is the ascending numerical number assigned to the sample location (for example – 2612-AS-01).

3.5 Sample Shipping

Summary: Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in this off-site vapor intrusion study follow the chain-of-custody guidelines outlined in NEIC Policies and Procedures, prepared by the National Enforcement Investigations Center (NEIC) of the USEPA Office of Enforcement.

Procedure:

1. The chain-of-custody (COC) record (Appendix A) should be completely filled out, with all relevant information.
2. The original COC goes with the samples. It should be placed in a Ziplock bag and placed inside the box containing a Summa canister. The sampler should retain a copy of the COC.
3. Summa canisters are shipped in the same boxes the laboratory used for shipping.
4. Place the lab address on top of sample box/cooler. Affix numbered custody seals across box lid flaps and cooler lid. Cover seals with wide, clear tape.
5. Ship samples via overnight carrier the same day that they are collected. Alternately, the samples may be transported directly to the laboratory. Shipping soil gas samples one day after collection is permitted if required.

3.6 Field Documentation

Field notebooks will be used during all on-site work. The field personnel overseeing the site activities will maintain a dedicated field notebook. In addition to the notebook, sampling forms, and purge forms used during field activities will be submitted as part of the final report. Sub-slab vapor sampling procedures, including the installation of the sub-slab vapor implant points, purging, sampling, backfilling, etc., should be photo-documented.

The field sampling team will maintain a sample log sheet summarizing the following data:

1. Sample Identification
2. Date and time of sample collection
3. Sampling depth
4. Identity of samplers
5. Sampling methods and devices
6. Purge volumes (soil vapor)
7. Volume of soil vapor extracted

8. The Summa canister vacuum before and after samples collected

9. Chain of custody and shipping information

The field personnel will log the time and material expenditures for later verification of invoices. Following completion of the program, the field personnel will transfer field notes onto standard forms for the investigation report.

The proper completion of the following forms/logs will be considered correct procedure for documentation during the sub-slab vapor investigation:

1. Field Log Book - weatherproof hand-bound field book

2. Summa Canister Sampling Field Data Sheet (Appendix A)

3. Chain of Custody (Appendix A)

4. Indoor Air Quality Observation Checklist (Appendix A)

3.7 Field Sampling Instrumentation

URS-owned and rented field sampling equipment will require no maintenance beyond decontamination between sampling locations. The use of disposable filters for the PID is recommended. Calibration procedures for electronic instruments can be found in the equipment operating manuals. Calibration and maintenance procedures for the common instrumentation that will be used during field investigations are discussed in the equipment operating manuals. A copy of the manufacturer's operating manual for each instrument will be kept with the instrument or the operator. All field sampling equipment will be calibrated as recommended by the manufacturer. The calibration procedures and results will be recorded in the field notebook.

3.7.1 Preventative Maintenance

In case of an emergency, the equipment rental vendor, other URS offices, and/or the instrument manufacturer will be contacted. Instrumentation rental vendors, which provide overnight UPS/Federal Express service, are listed below.

Vendor:

Pine Environmental Services, Inc.: Mattydale, NY: 1-877-903-7463

3.8 Sample Equipment Cleaning Procedures

Summary: To assure that no outside contamination will be introduced into the samples/data, thereby invalidating the samples/data, the following cleaning protocols will apply for all equipment used to collect samples/data during the field investigations.

Procedures:

1. Thoroughly clean equipment with laboratory-grade soap and water, until all visible contamination is gone.
2. Rinse with water, until all visible evidence of soap is removed.
3. Rinse several times with deionized water.
4. Air dry before using.
5. If equipment will not be used immediately, wrap in aluminum foil.

4.0 HEALTH AND SAFETY

The Basewide Health & Safety Plan and Site-Specific Health & Safety Addenda for Operation, Monitoring, and Maintenance Activities at the Former Plattsburgh Air Force Base (URS 2005) will be used during the sub-slab vapor sampling field activities. The HASP must be onsite during all field activities.

5.0 REPORTING

Upon receipt of the analytical data from the laboratory, the data will be reviewed and validated, and a brief draft report will be prepared summarizing the analytical data. The draft report will be modified based on comments and the document will be finalized.

This document will contain, at minimum, the following information:

- Description of field activities
- Map of sample locations
- Tables of analytical results, reported in $\mu g/m^3$
- Discussion of data usability

REFERENCES

NYSDEC. 2005. New York State Department of Environmental Conservation. *Analytical Services Protocol.* Revised July, 2005.

NYSDOH. 2006. New York State Department of Health. *Guidance for Evaluating Soil Vapor Intrusion in the State of New York.* Final, October, 2006.

URS. 2001. *Final Fire Training Area (FT-002)/Industrial Area Groundwater Operable Unit Remedial Investigation/Feasibility Study, Plattsburgh Air Force Base, Clinton County, NY.* Buffalo, NY. June.

URS. 2005. *Basewide Health & Safety Plan and Site-Specific Health & Safety Addenda for Operation, Monitoring, and Maintenance Activities at the Former Plattsburgh Air Force Base.* Buffalo, NY. February.

TABLES

TABLE 1
Industrial Area Buildings
Sub-Slab Soil Vapor Survey
Sub-Slab Sample Location Rationale

Building	Figure Number	Occupant	Number of Samples	Rationale
1807	3	Bombardier	2	Impacted groundwater plume extends under west half of building.
1810	4	Bombardier	2	Impacted groundwater plume extends under west edge of building.
1812	5	Triangle Electric	2	Impacted groundwater plume extends under southwest corner of building.
2612	6	Northeast Printing - Cold Storage	2	Impacted groundwater plume extends under building.
2616	7	Northeast Printing	4	Impacted groundwater plume extends under building.
2622	8	Stone Air	4	Impacted groundwater plume extends under building.
	8	Bombardier	2	Impacted groundwater plume extends under building.
2786	9	Unoccupied	2	Impacted groundwater plume extends under southwest corner of building.
2793	10	Precision Jet Management	3	Impacted groundwater plume extends under southwest corner of building.
2796	11	Unoccupied	2	Impacted groundwater plume extends under building.
2797	12	Unoccupied	2	Impacted groundwater plume extends under building.
2753	13	Pratt and Whitney	4	Impacted groundwater plume possibly extends under building.
2763	14	Pratt and Whitney	5	Impacted groundwater plume extends under building.
2766	15	Pratt and Whitney - Cold Storage	3	Impacted groundwater plume extends under building.
NB-C	16	Wyeth Pharmaceuticals	4	Impacted groundwater plume extends under southwest corner of building.

TABLE 2

Industrial Area Buildings

Sub-Slab Soil Vapor Survey

Analytical Methods and Sample Container, Preservation, and Holding Time Requirements

Parameter[3]	Method Number/ Reference[1]	Container/Sample Volume	Preservation	Holding Time[2]
Task 1 - Indoor Air Samples				
Volatile Organic Compounds	TO-15	6-L Summa canister collected via flow controller for 24 hours	None	7 Days polar compounds/ 14 days non-polar compounds

NOTES:

1 - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, January 1999.

2 - All holding times are from validated time of sample receipt (VTSR) at the laboratory unless otherwise noted. Holding time for non-polar compounds is from VTSR at the laboratory, based on USEPA Region II validation guidelines.

3 - Target Compound List Parameters only.

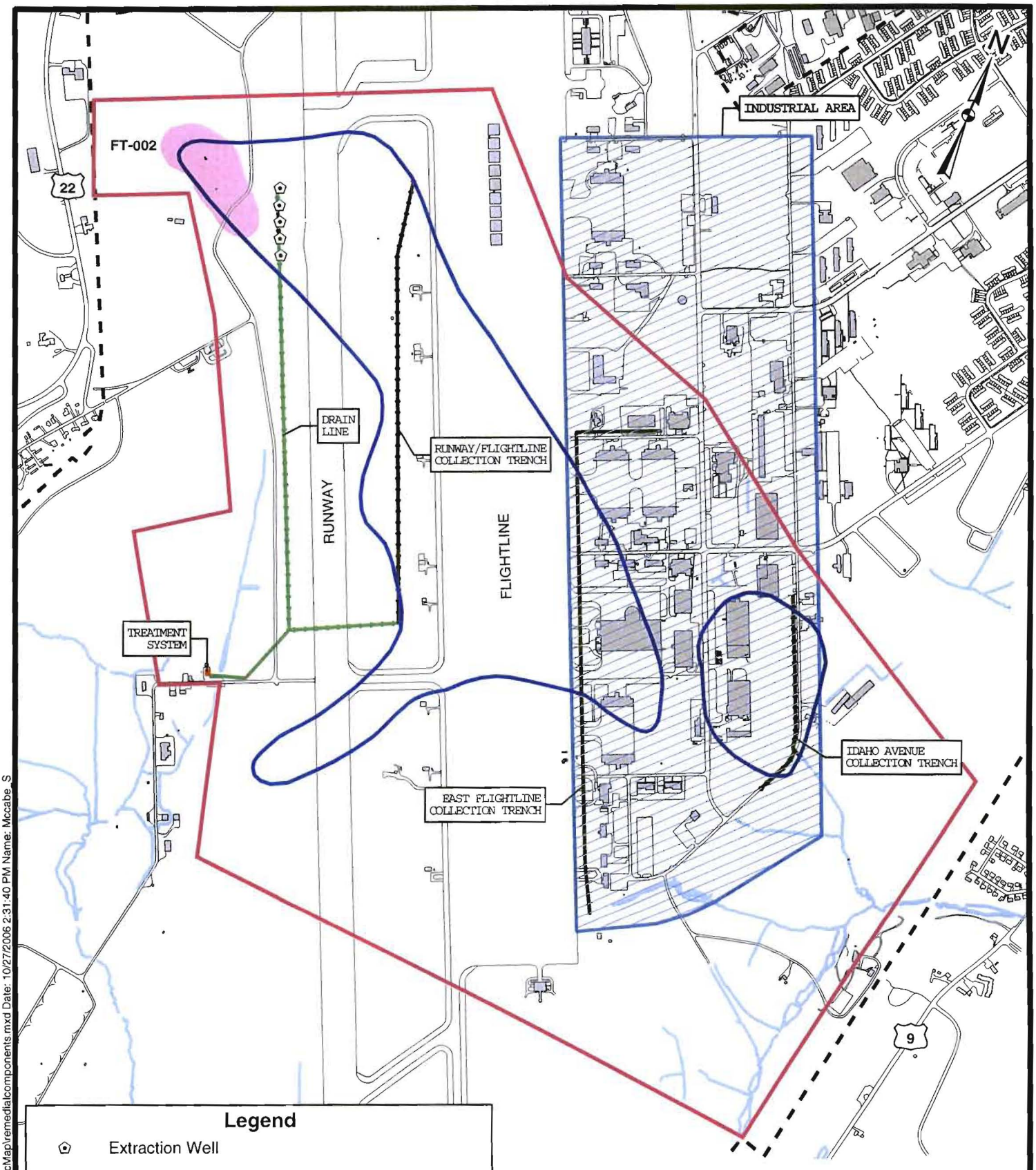
TABLE 3
Industrial Area Buildings
Sub-Slab Soil Vapor Survey
Summary of Samples, QA/QC Samples, and Analytical Methods

Parameter	Method Number / Reference[1]	Estimated Number of Samples	Field QA/QC Sample Duplicates	Total No. of Samples
Task 1 - Indoor Air Samples				
I. Sub-Slab Air	TO-15	43	5	48

NOTES:

1. Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, January 1999.

FIGURES



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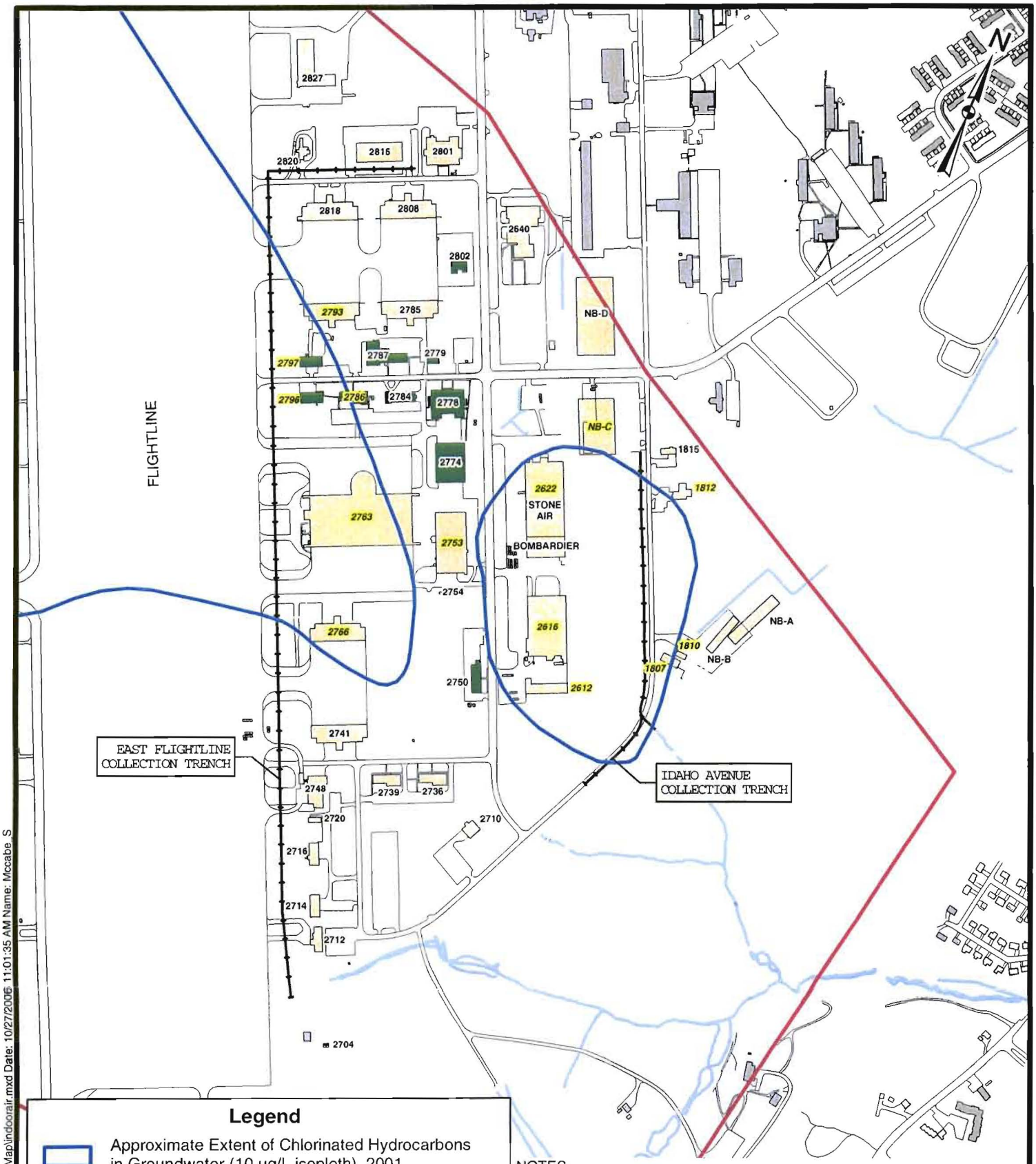
URS

LOCATION OF INDUSTRIAL AREA AND FT-002 REMEDIAL COMPONENTS

FIGURE 1



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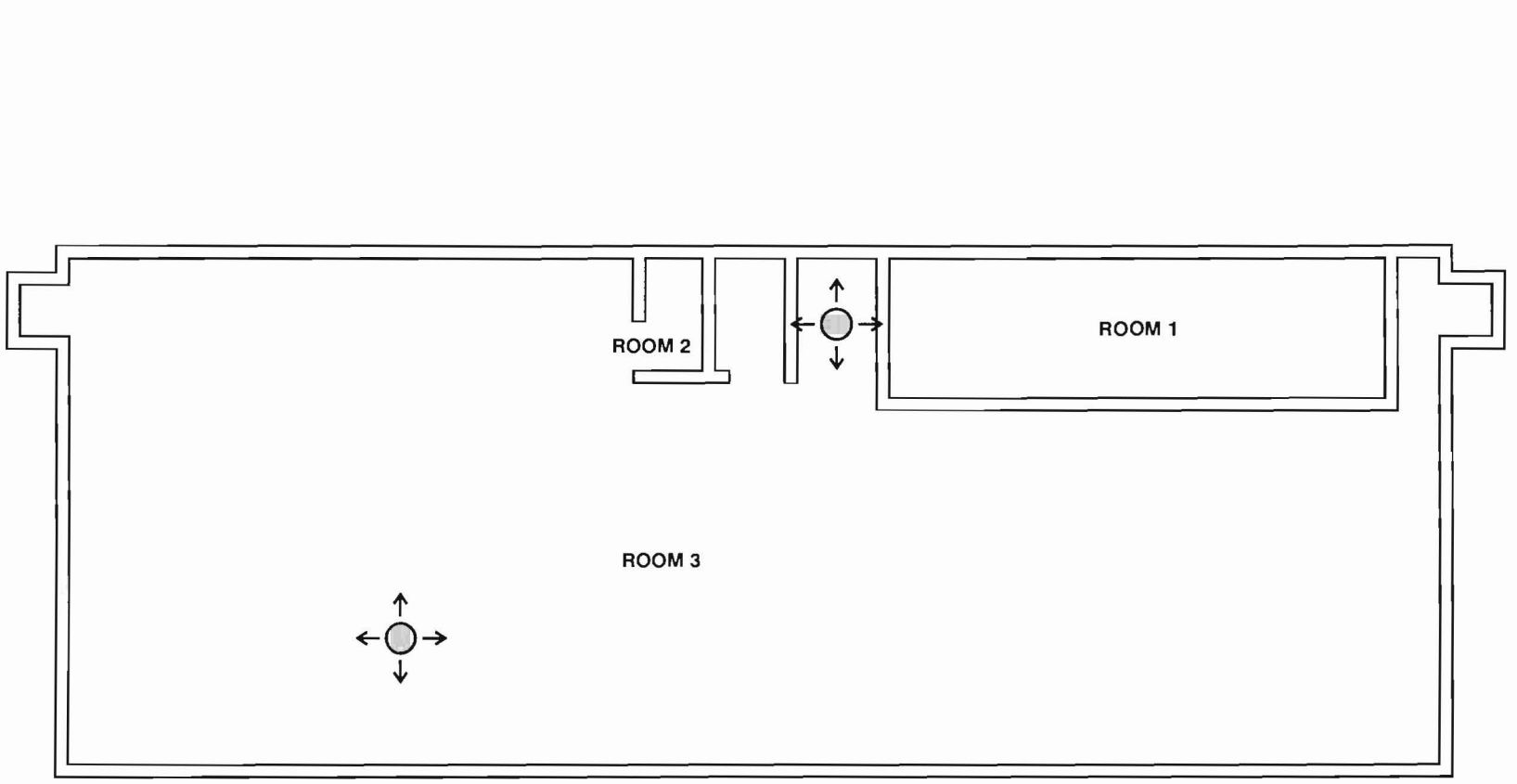
FORMER PLATTSBURGH AIR FORCE BASE
INDUSTRIAL AREA SUB-SLAB SOIL VAPOR STUDY
BUILDING LOCATIONS

FIGURE 2

AG19552-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

BUILDING HAS BEEN MODIFIED;
DRAWING MAY NOT EXACTLY REFLECT
PRESENT CONFIGURATION

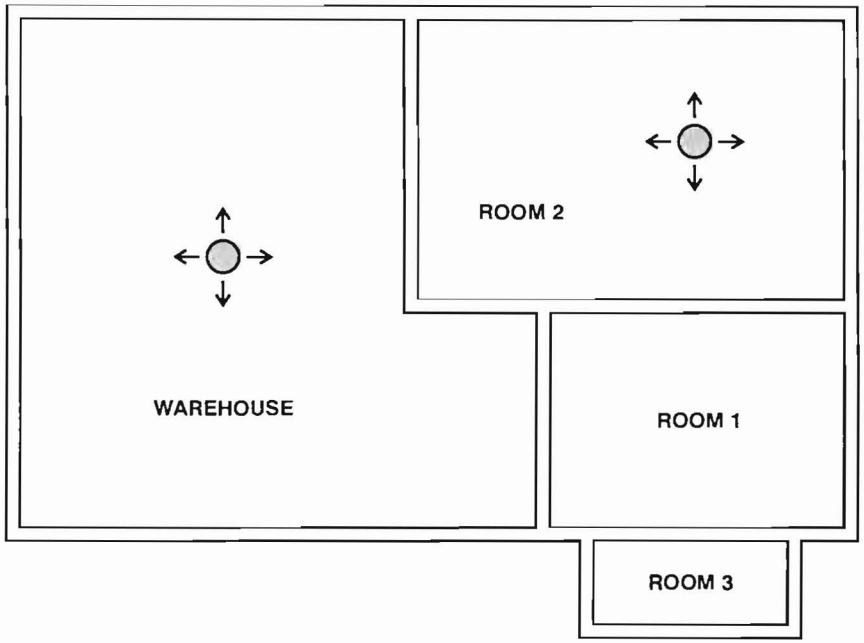
URS

BUILDING 1807
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 3

AG19553-11174519-102506-GCM

N



- PROPOSED SAMPLE LOCATIONS

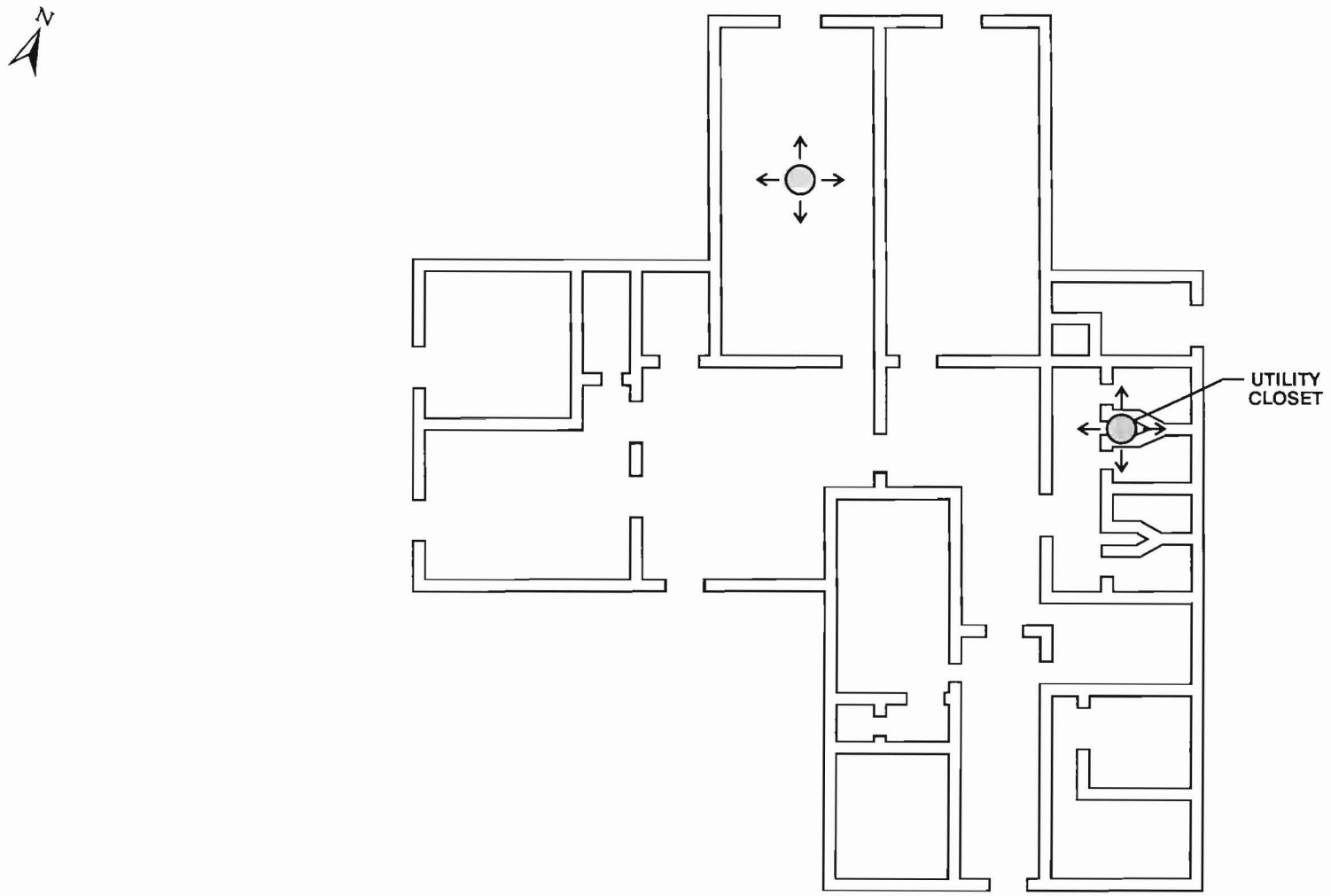
BUILDING HAS BEEN MODIFIED;
DRAWING MAY NOT EXACTLY REFLECT
PRESENT CONFIGURATION

URS

BUILDING 1810
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 4

AG19554-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

BUILDING HAS BEEN MODIFIED;
DRAWING MAY NOT EXACTLY REFLECT
PRESENT CONFIGURATION

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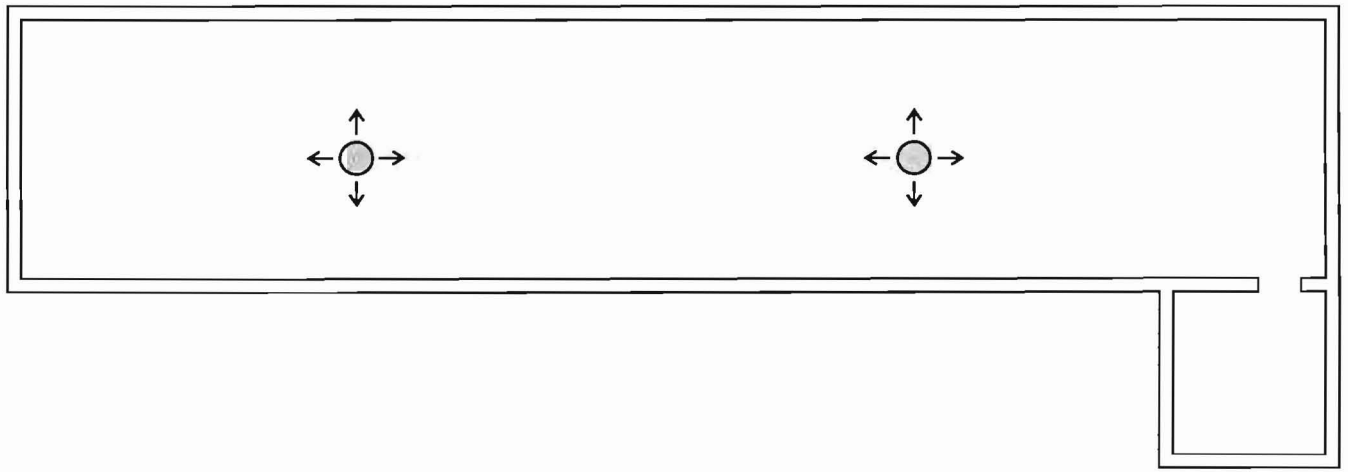
BUILDING 1812
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 5

AG19555-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

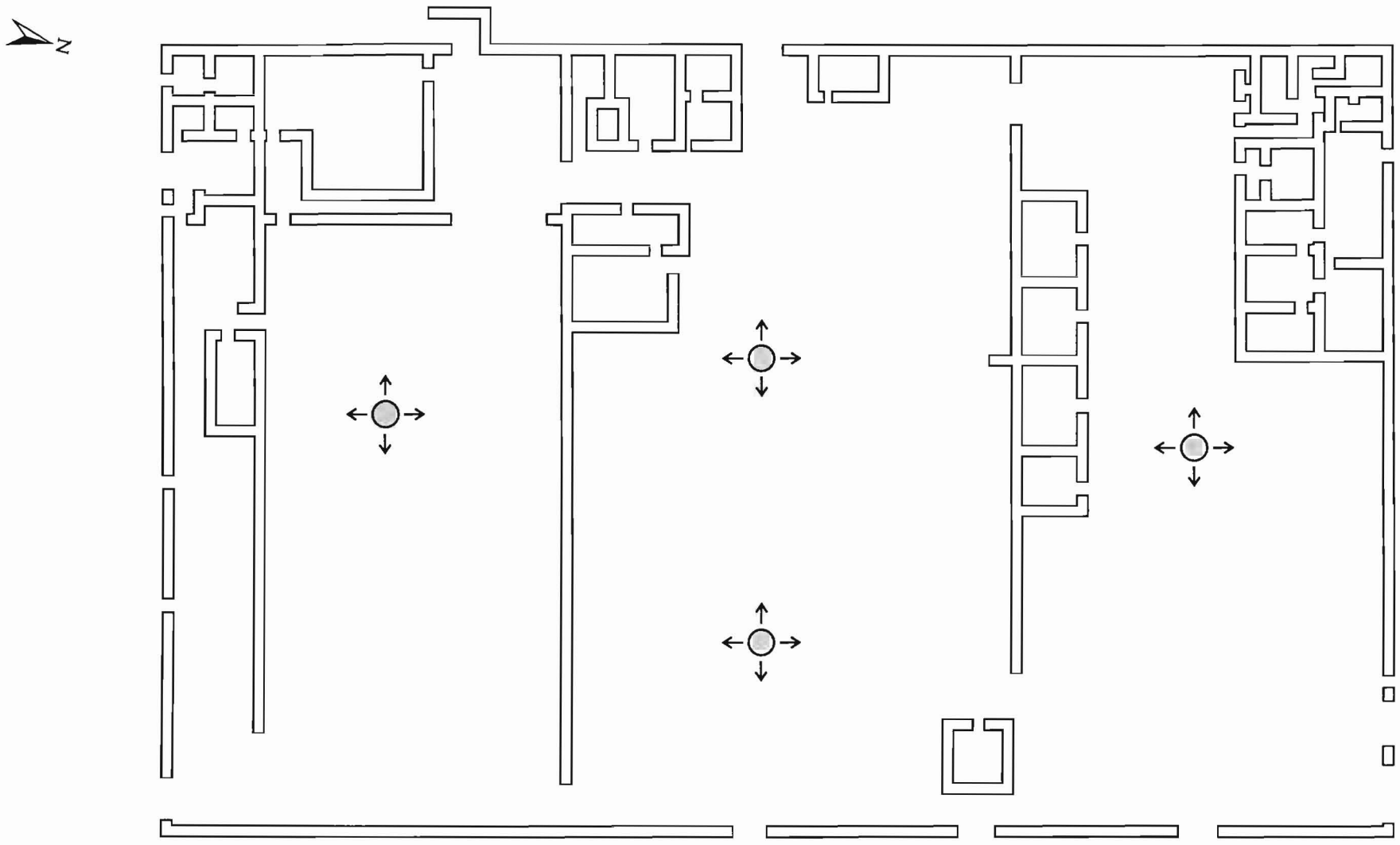
BUILDING FLOOR HAS SIGNIFICANT DETERIORATION AND CRACKS. SAMPLES WILL BE LOCATED IN AREAS WHERE THE CONCRETE IS INTACT.

URS

BUILDING 2612
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 6

AG19556-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

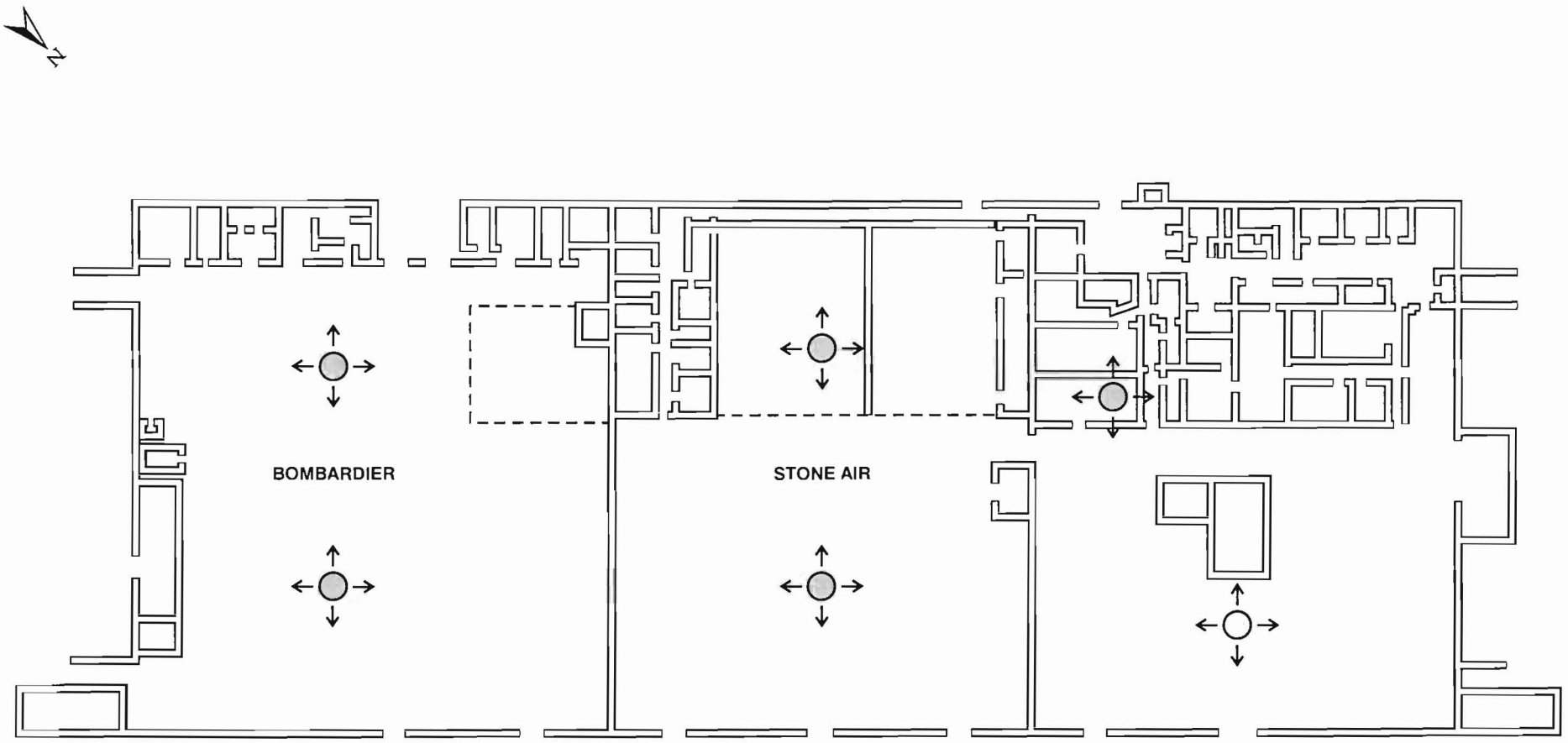
BUILDING HAS BEEN MODIFIED;
DRAWING MAY NOT EXACTLY REFLECT
PRESENT CONFIGURATION

URS

BUILDING 2616
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 7

AG19557-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

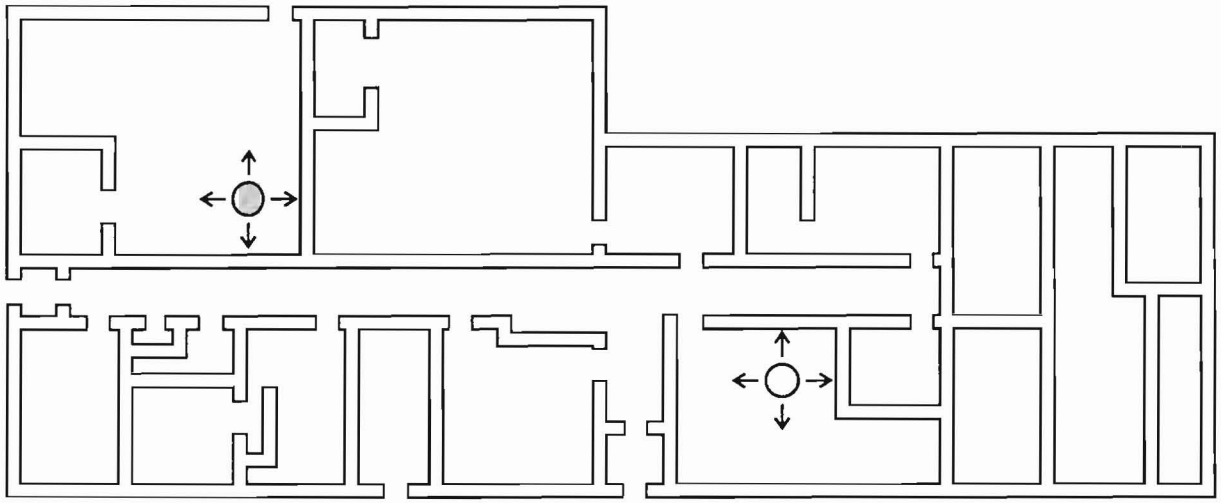
BUILDING HAS BEEN MODIFIED;
DRAWING MAY NOT EXACTLY REFLECT
PRESENT CONFIGURATION

URS

BUILDING 2622
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 8

AG19558-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

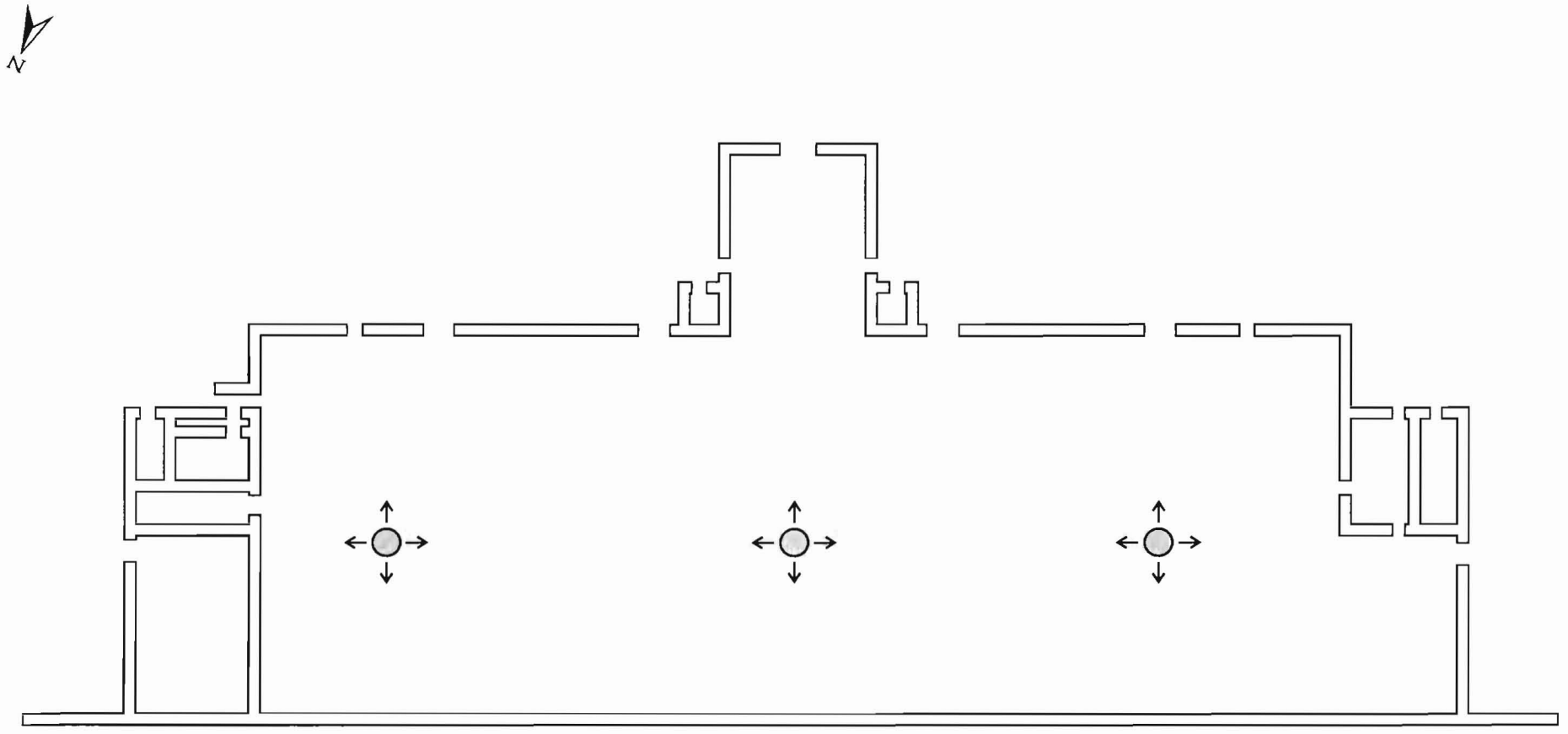
BUILDING NOT ENTERED DURING SITE WALKOVER; DRAWING MAY NOT REFLECT PRESENT CONFIGURATION

URS

BUILDING 2786
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 9

AG19559-11174519-102506-GCM



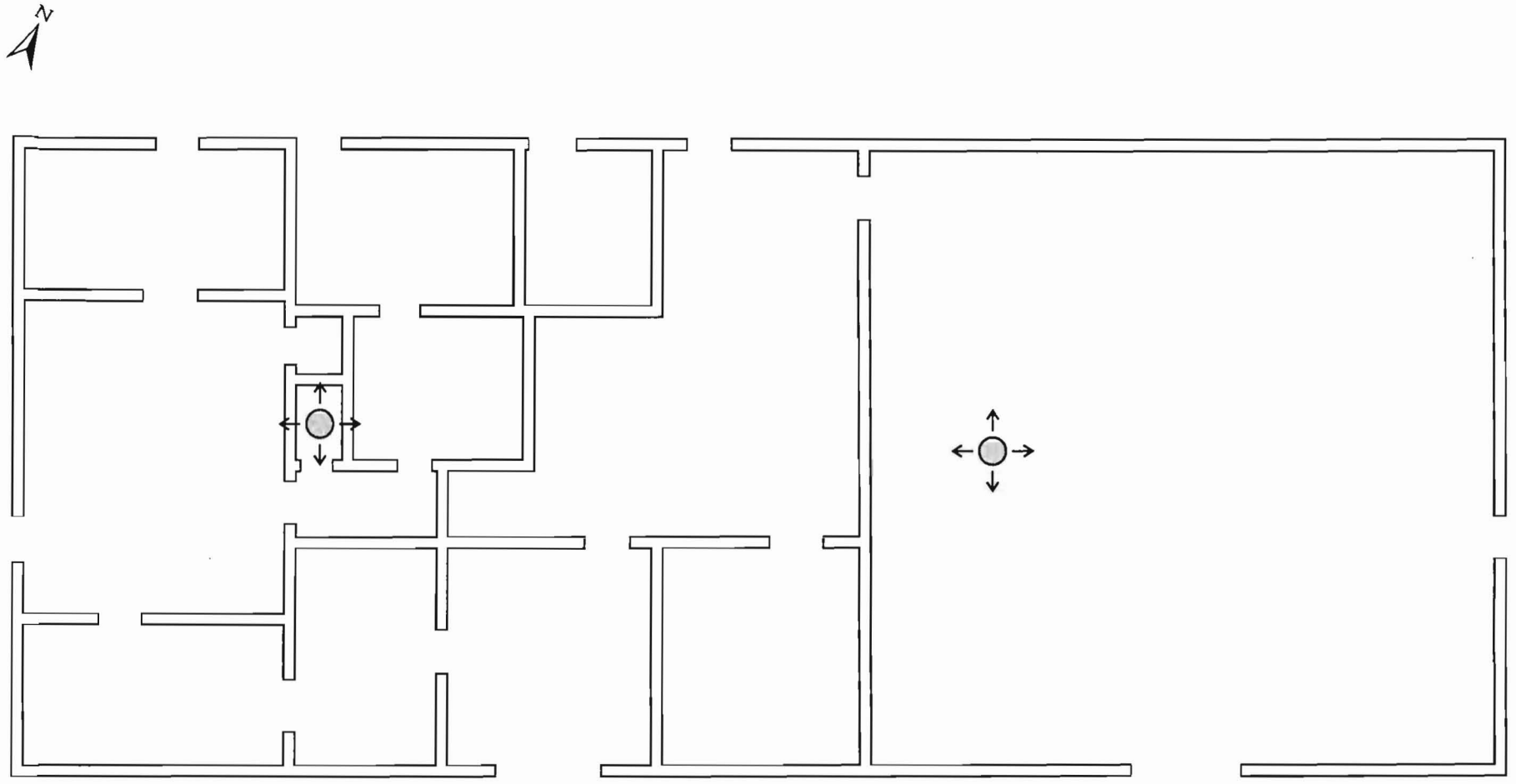
- PROPOSED SAMPLE LOCATIONS

URS

BUILDING 2793
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 10

AG19560-11174519-102506-GCM



- PROPOSED SAMPLE LOCATIONS

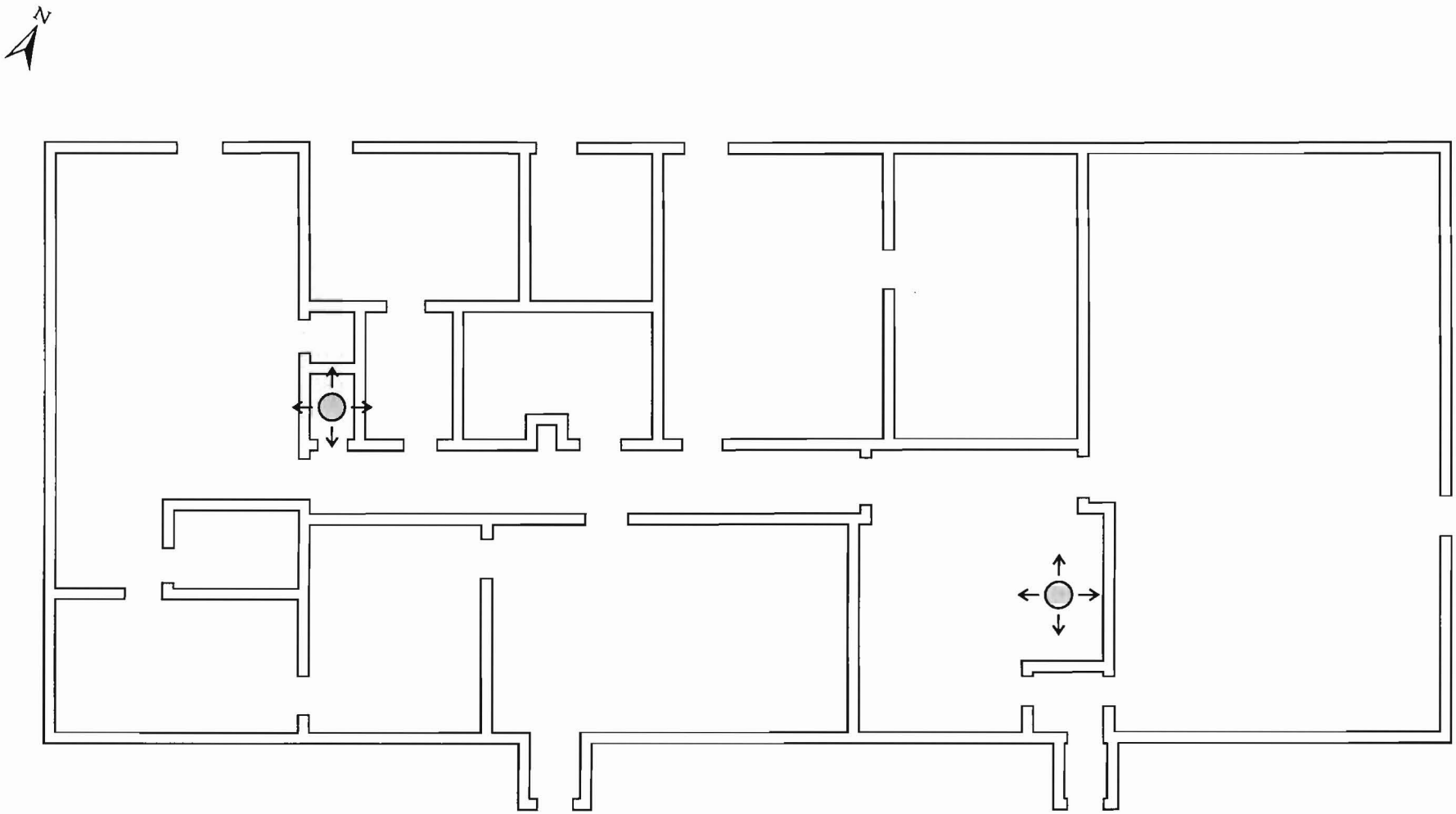
BUILDING NOT ENTERED DURING SITE WALKOVER; DRAWING MAY NOT REFLECT PRESENT CONFIGURATION

URS

BUILDING 2796
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 11

AG19561-11174519-102506-GCM



· PROPOSED SAMPLE LOCATIONS

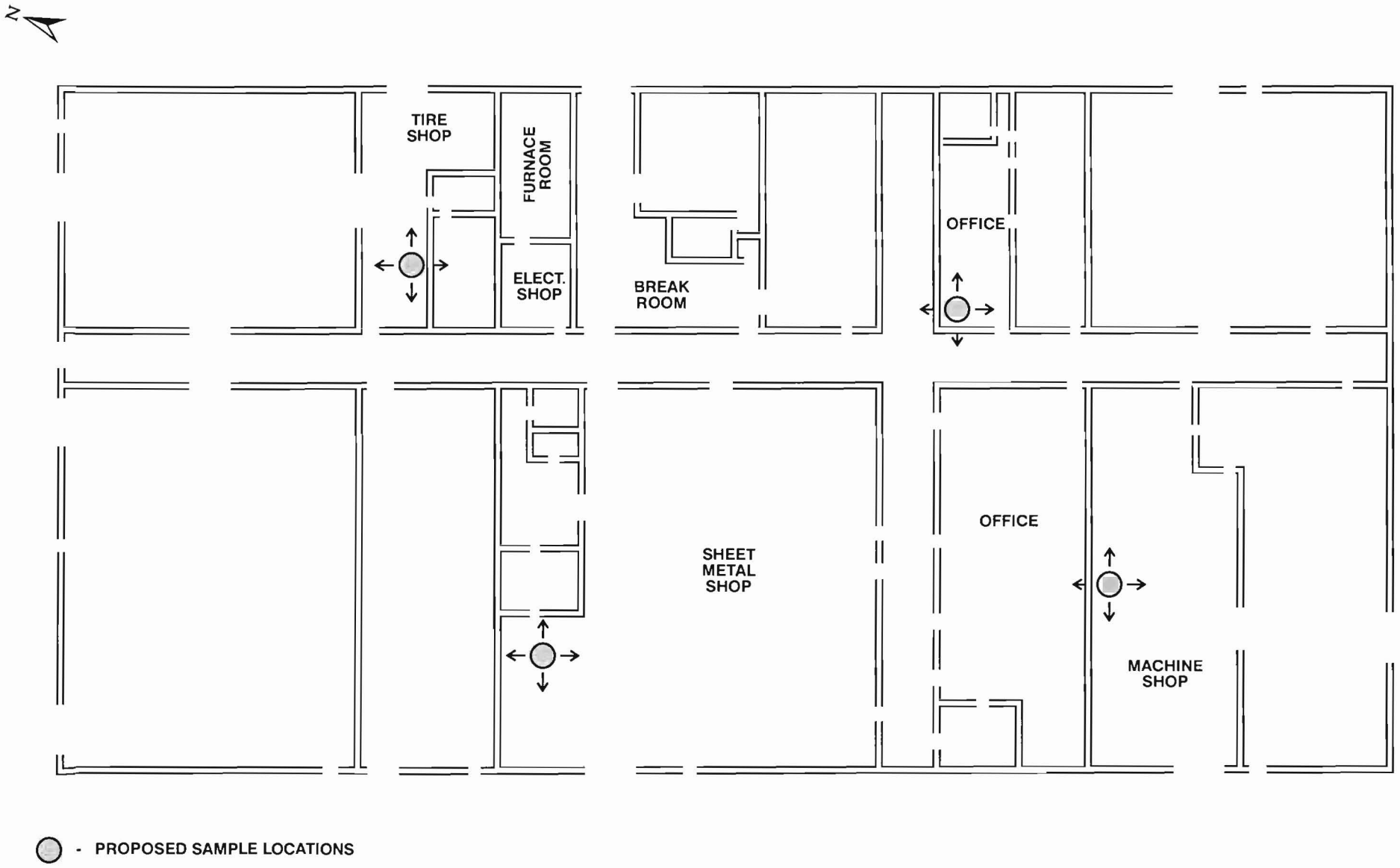
BUILDING NOT ENTERED DURING SITE WALKOVER; DRAWING MAY NOT REFLECT PRESENT CONFIGURATION

URS

BUILDING 2797
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 12

AG19562-11174519-102506-GCM

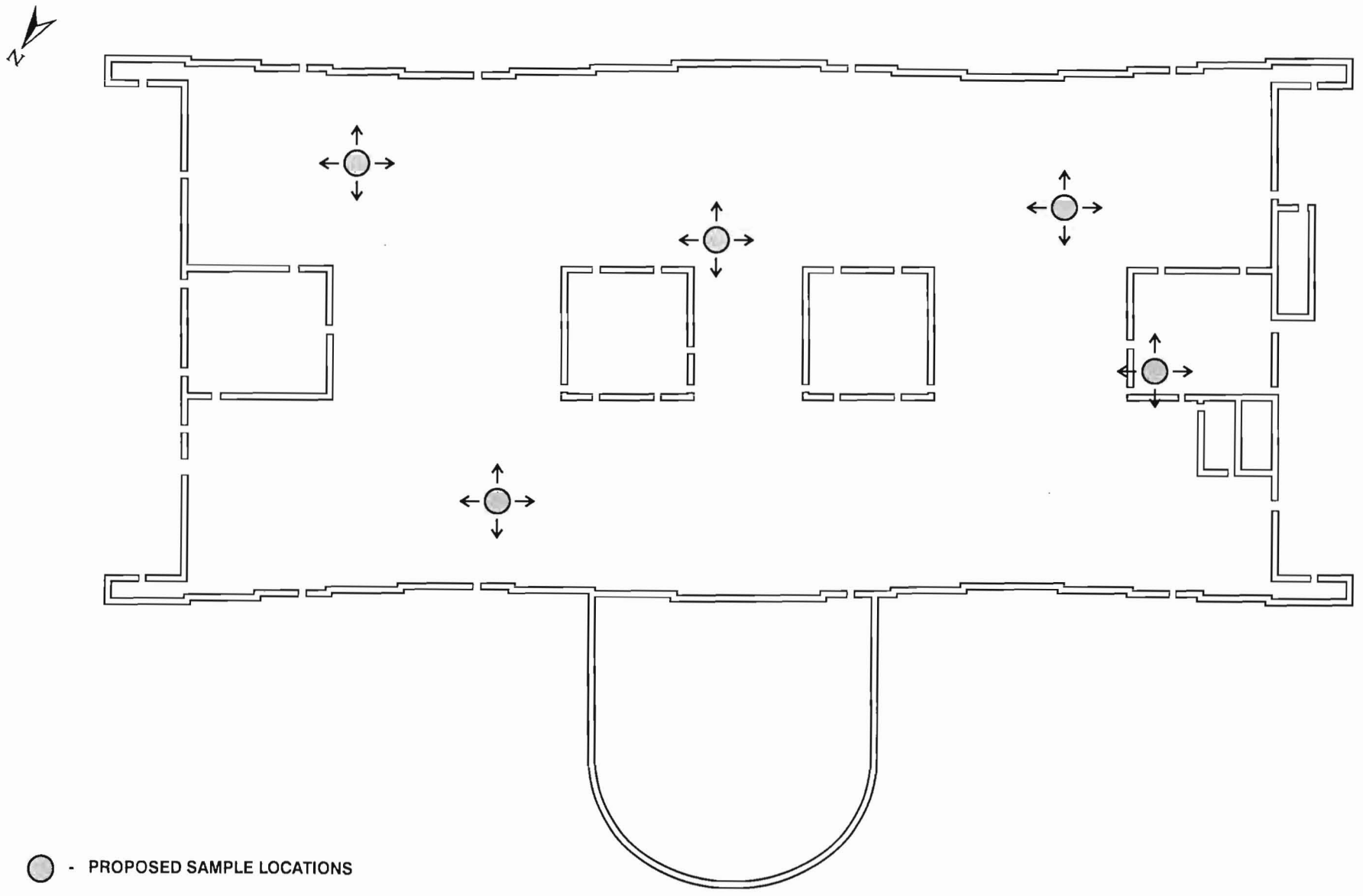


URS

BUILDING 2753
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 13

AG19563-11174519-102506-GCM

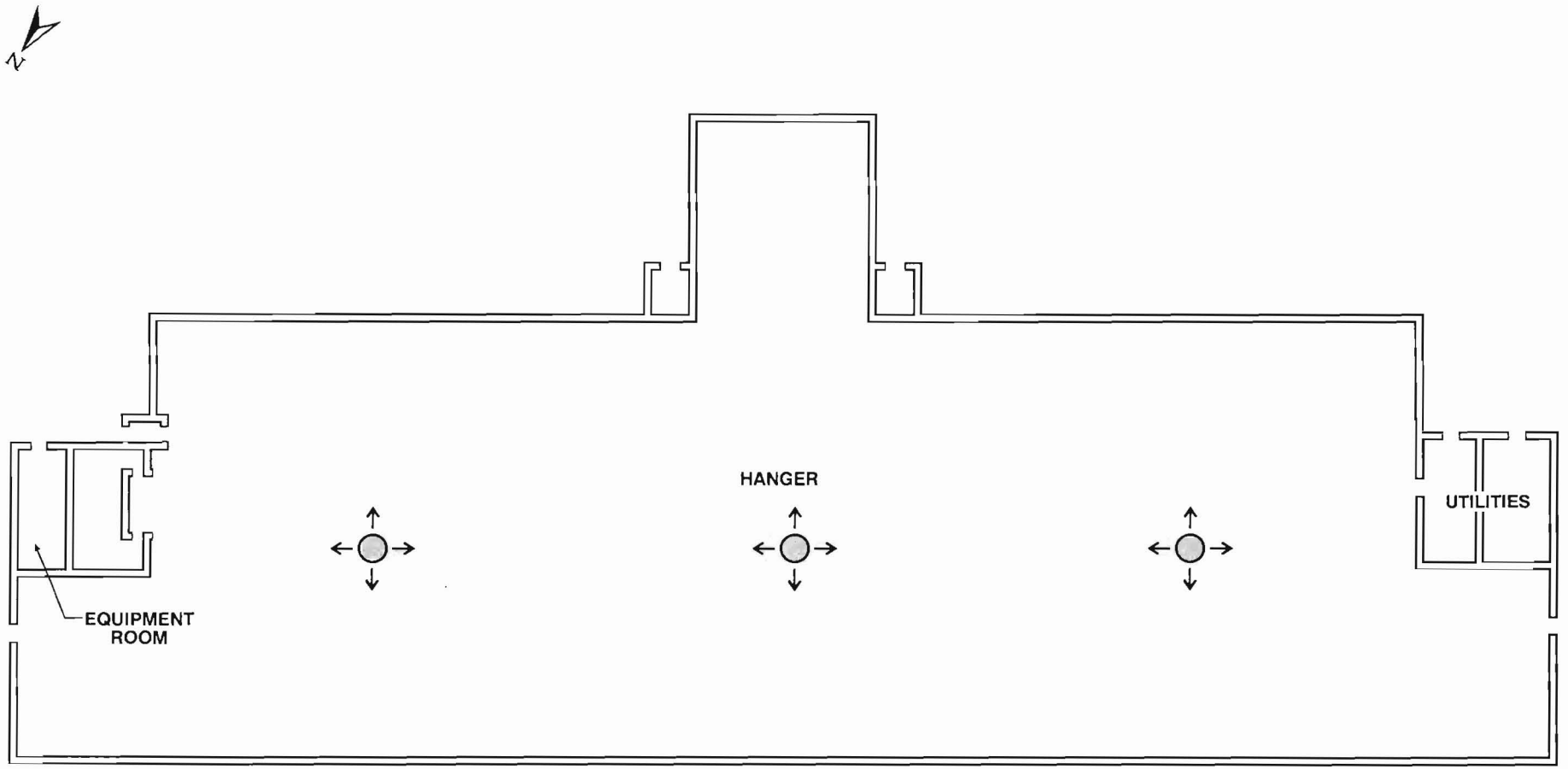


URS

BUILDING 2763
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 14

AG19564-11174519-102506-GCM



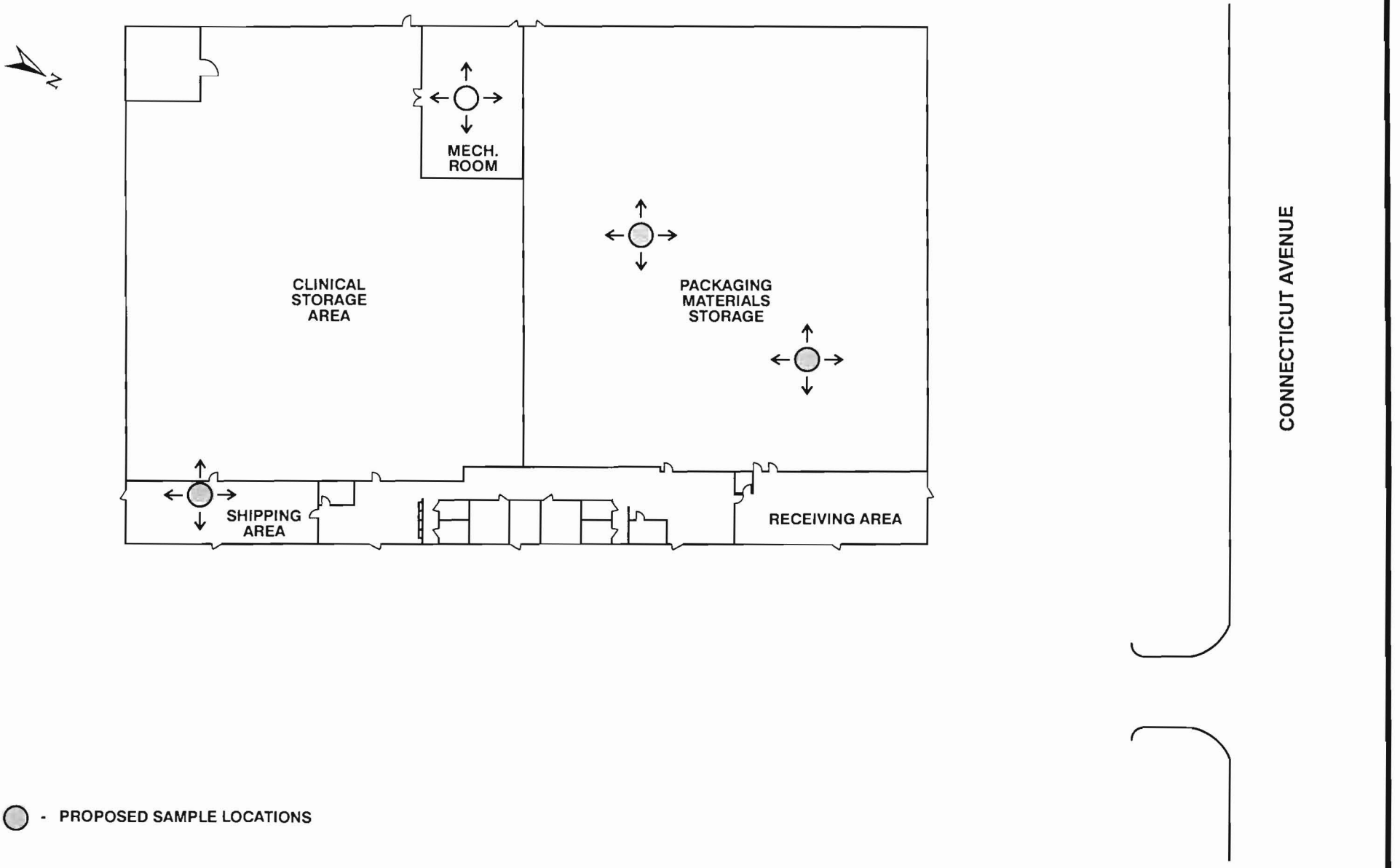
- PROPOSED SAMPLE LOCATIONS

URS

BUILDING 2766
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 15

AG19550-11174519-102306-GCM



URS

BUILDING NB-C
PROPOSED SUB-SLAB SAMPLE LOCATIONS

FIGURE 16

APPENDIX A

FIELD FORMS

AIR SAMPLE
CHAIN OF CUSTODY RECORD

URS CORPORATION
77 GOODELL STREET
BUFFALO, NY 14203
PHONE: 716-856-5636

URS CONTACT: _____

PROJECT NUMBER | SITE NAME

SAMPLERS (PRINT/SIGNATURE)

DELIVERY SERVICE: _____ AIRBILL NO.: _____

LAB _____

SHIPPING CONTAINER _____ of _____

PAGE _____ of _____

LOCATION IDENTIFIER	SAMPLE DATE	SAMPLE TIME	SAMPLE ID	MATRIX CODE	CANISTER SIZE (LITERS)	SAMPLE INFORMATION: CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS			REMARKS	SAMPLE TYPE CODE

MATRIX CODES: AA - AMBIENT AIR | AI - INDOOR AIR | AQ - FIELD QC | AS - SUB-SLAB AIR | GS - SOIL GAS

SAMPLE TYPE CODES: N# - NORMAL ENVIRONMENTAL SAMPLE | FD# - FIELD DUPLICATE | MS# - MATRIX SPIKE | (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
RELINQUISHED BY (SIGNATURE)	**DATE**	**TIME**	**RECEIVED FOR LAB BY (SIGNATURE)**	**DATE**	**TIME**

SPECIAL INSTRUCTIONS

Distribution: Original accompanies shipment, copy to project file

URS

SITE NAME_____

JOB NUMBER_____

DAILY INSTRUMENT CALIBRATION CHECK SHEET

DATE	INSTRUMENT	BATTERY CHECK OK?	ZERO ADJUST OK?	CALIBRATION GAS (PPM)	READING (PPM)	CALIBRATED BY

Summa Canister Sampling Field Data Sheet

Site: _____

Samplers: _____

Date: _____

Sample #					
Location					
Summa Canister ID (Lab ID, if provided)					
Additional Tubing Added	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much
Purge Time (Start)					
Purge Time (Stop)					
Total Purge Time (min)					
Pressure Gauge - before sampling					
Sample Time (Start)					
Sample Time (Stop)					
Total Sample Time (min)					
Pressure Gauge - after sampling					
Canister Pressure Went To Ambient Pressure?	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
General Comments:					

INDOOR AIR QUALITY
OBSERVATION CHECKLIST*

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No._____

Purpose of Investigation_____

1. TENANT:

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

2. OWNER (United States Air Force)

Last Name: **Farnsworth** First Name: **David**

Address: **304 New York Road, Plattsburgh, NY 12903**

County: **Clinton**

Home Phone: _____ Office Phone: **(518) 563-2871**

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

* Adapted from the New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory.

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____ Building age_____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other ___

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in: Basement Outdoors Main Floor Other____

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

_____

_____

_____

_____

5. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)
Basement	_____
1st Floor	_____
2nd Floor	_____
3rd Floor	_____
4th Floor	_____

6. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

b. Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

7. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

APPENDIX B

AIR FORCE REAL PROPERTY AGENCY

FACT SHEET

FACT SHEET

Air Force Real Property Agency

1700 North Moore Street, Suite 2300, Arlington, Virginia 22209-2802
703-696-5500 • www.afrpa.hq.af.mil

Soil Vapor Intrusion and Subslab Sampling

WHAT IS SOIL VAPOR INTRUSION?

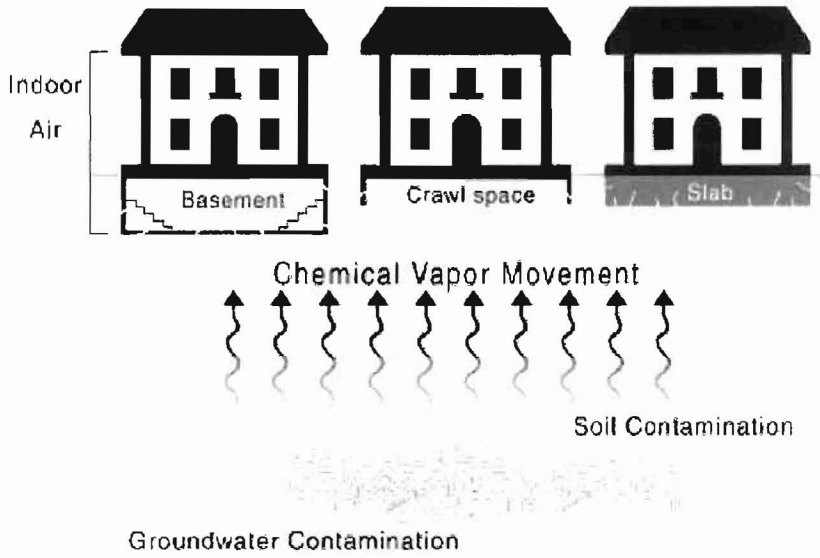
Soil vapor intrusion is a process by which chemicals migrate from a contaminated source in the soil and groundwater into the indoor air of buildings. Vapors can enter a building through openings in the foundation including cracks in slabs or basement floors and walls.

HOW DOES SUBSLAB SAMPLING WORK?

Before any sampling occurs, potential sampling sites are inspected and chosen to ensure a proper representative air sample can be taken with minimal disruption for the building's occupants. To avoid inconveniencing the building's occupants, a sample may be taken from beneath a closet rather than from beneath an office.

Once the sampling locations have been identified, small holes are drilled through the concrete foundation of the building into the soil below. Small canisters will be connected to each hole to collect air samples over a 24-hour period. The drilled holes will be repaired upon completion of the sampling.

The collected samples are analyzed to see if detected chemicals are escaping into the air at acceptable levels.



A Conceptual Model of Vapor Intrusion
(Courtesy of the New York State Department of Health)

VAPOR INTRUSION SAMPLING FOR VAPOR INTRUSION AT THE FORMER PLATTSBURGH AFB

The Air Force Real Property Agency will conduct subslab sampling at selected buildings on the former Plattsburgh Air Force Base in late November 2006.

The Air Force previously studied the potential for soil vapor intrusion into buildings on the base and concluded in 2001 that there was no need for further action. While there are no indications of a change to this situation, the Air Force will conduct subslab sampling to verify the building is not being affected by vapor intrusion.

For more information, please call Dave Farnsworth at (518) 563-2871 ext. 15.

ABOUT AFRPA

The Air Force Real Property Agency oversees the environmental cleanup activities at former Air Force bases throughout the United States. Our goal is to complete cleanup actions needed to protect human health and the environment and to transfer property for reuse. AFRPA also plays a key role in property reuse/privatization and serves as the Air Force liaison supporting interim property leases.

For more information, please call our public information line at 703 696 5500 or visit us at www.afrpa.hq.af.mil.