ARMED FORCES RETIREMENT HOME-WASHINGTON
RESIDENTIAL AND MEDICAL FACILITIES
CONSOLIDATION AND MODERNIZATION

FINAL ENVIRONMENTAL ASSESSMENT

WASHINGTON, DC

ARMED FORCES RETIREMENT HOME

IN COOPERATION WITH U.S. GENERAL SERVICES ADMINISTRATION AND

NATIONAL CAPITAL PLANNING COMMISSION

APRIL 2010

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RESIDENTIAL AND MEDICAL FACILITIES CONSOLIDATION AND MODERNIZATION

FINAL ENVIRONMENTAL ASSESSMENT

Responsible Agency:
Armed Forces Retirement Home

Cooperating Agencies:
U.S. General Services Administration
National Capital Planning Commission

Abstract:
The Armed Forces Retirement Home (AFRH) in cooperation with the General Services Administration (GSA) and the National Capital Planning Commission has prepared this Environmental Assessment (EA) for the consolidation and modernization of AFRH in Washington, DC. The project entails the demolition of the existing Scott Building and constructing a smaller, more efficient modern facility in the same location. This EA considers the environmental effects of implementing two action alternatives (Alternatives A and B) and a No Action alternative (Alternative C). The action alternatives differ in the size, and shape of the proposed New Commons and Healthcare Building. Alternative A combines the health care center over the commons as a single larger massing element. Alternative B expresses the commons and healthcare center as separate massing elements.

For information concerning this document, contact:

Mr. Christopher J. Burkhardt
Froehling & Robertson, Inc.
NEPA EA Contact
310 Hubert Street, Raleigh, NC 27603
T 919.828.3441 | F 919.582.0304 | M 919.630.1369
cburkhardt@fandr.com

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1.0

PURPOSE AND NEED

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The Armed Forces Retirement Home (AFRH) has prepared this Environmental Assessment (EA) for the proposed consolidation and modernization of residential and healthcare facilities at the Armed Forces Retirement Home-Washington campus (AFRH-W) located at 3700 North Capitol Street in Washington, DC. The U.S. General Services Administration (GSA) and the National Capital Planning Commission (NCPC) are cooperating agencies in this effort. The EA is consistent with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations for implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508 (1986)], and the AFRH's Compliance with the National Environmental Policy Act (38 CFR part 200). An Environmental Impact Statement (EIS) was completed in November 2007 for the AFRH-W Master Plan. This EA is considered a supplement to the EIS.

AFRH-W includes dormitories, long-term care and assisted living facilities, chapels, a golf course, and various other administrative and support facilities. AFRH-W's building inventory includes 71 buildings and 82 structures. The proposed project site is approximately 6-acres within the northern portion of the 272 acre AFRH-W campus (see Figure 1-2). The proposed project site is currently developed with the Scott Building. Constructed in 1954, the Scott Building is a concrete-framed seven-story structure totaling 357,000 gross square feet with a foot print of 91,700 square feet. The building is supported by spread footings with mat slabs. It is designed in a minimalist form of Streamline Moderne, with imposing shot-sawn limestone panels and granite base.

This EA identifies two action alternatives and a No Action alternative. Potential environmental impacts are outlined for each of the alternatives, including short-term construction-related impacts, long-term operational impacts, and cumulative impacts resulting from the implementation of the proposed action together with other current or planned projects. In addition, mitigation measures are suggested to address identified impacts. The study area for the assessment of impacts is generally the 272- acre AFRH-W campus, which is situated in north-central Washington, DC. The southern border of AFRH-W campus follows Irving Street, NW. The western border is formed by Park Place, NW and Rock Creek Church Road, NW. The eastern border follows Harewood Road, NE and North Capitol Street. Where appropriate, the study area for assessment of impacts is the 6-acre proposed project site within AFRH-W.

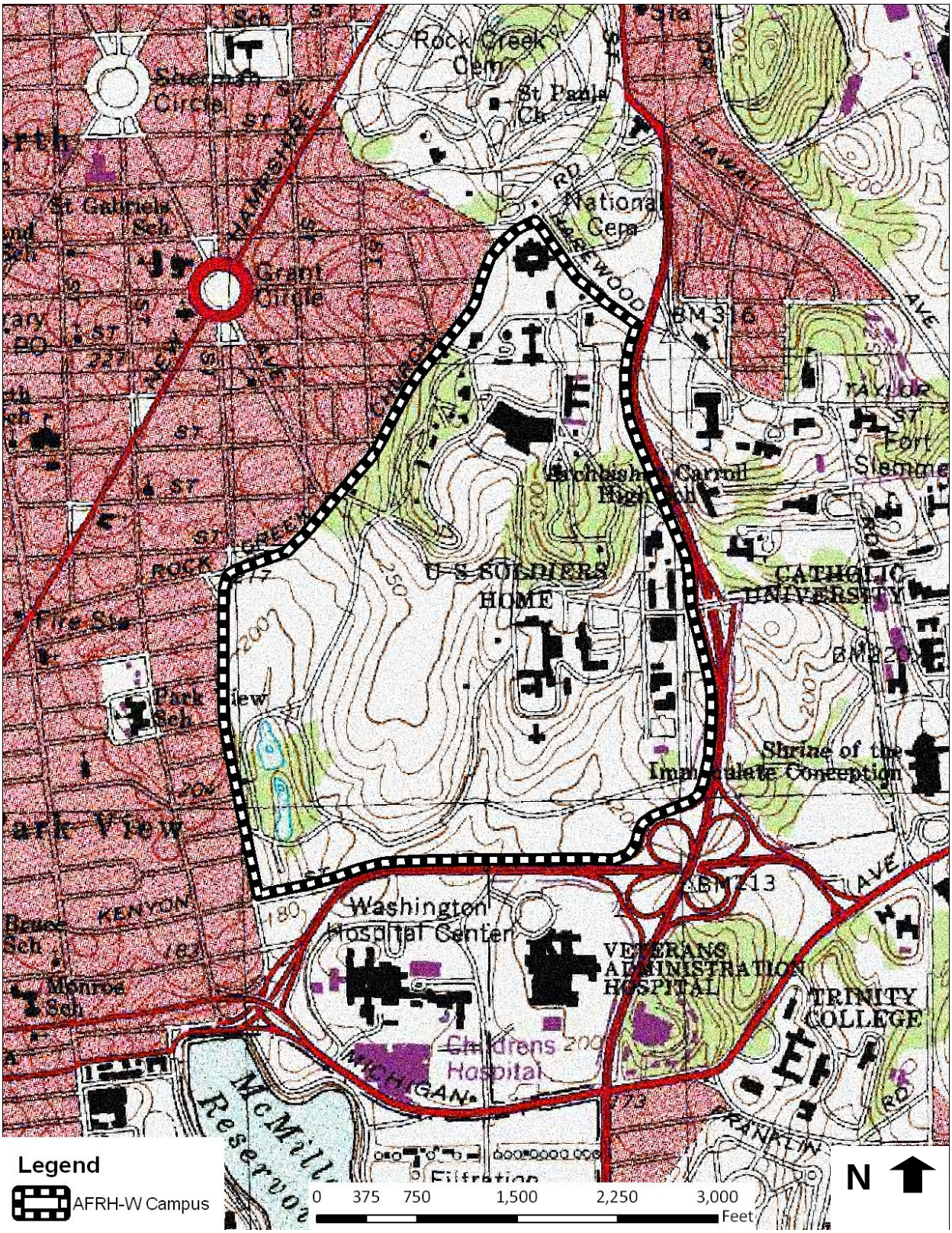


Figure 1-1: AFRH-W Topographic Map (USGS Topographic Map)

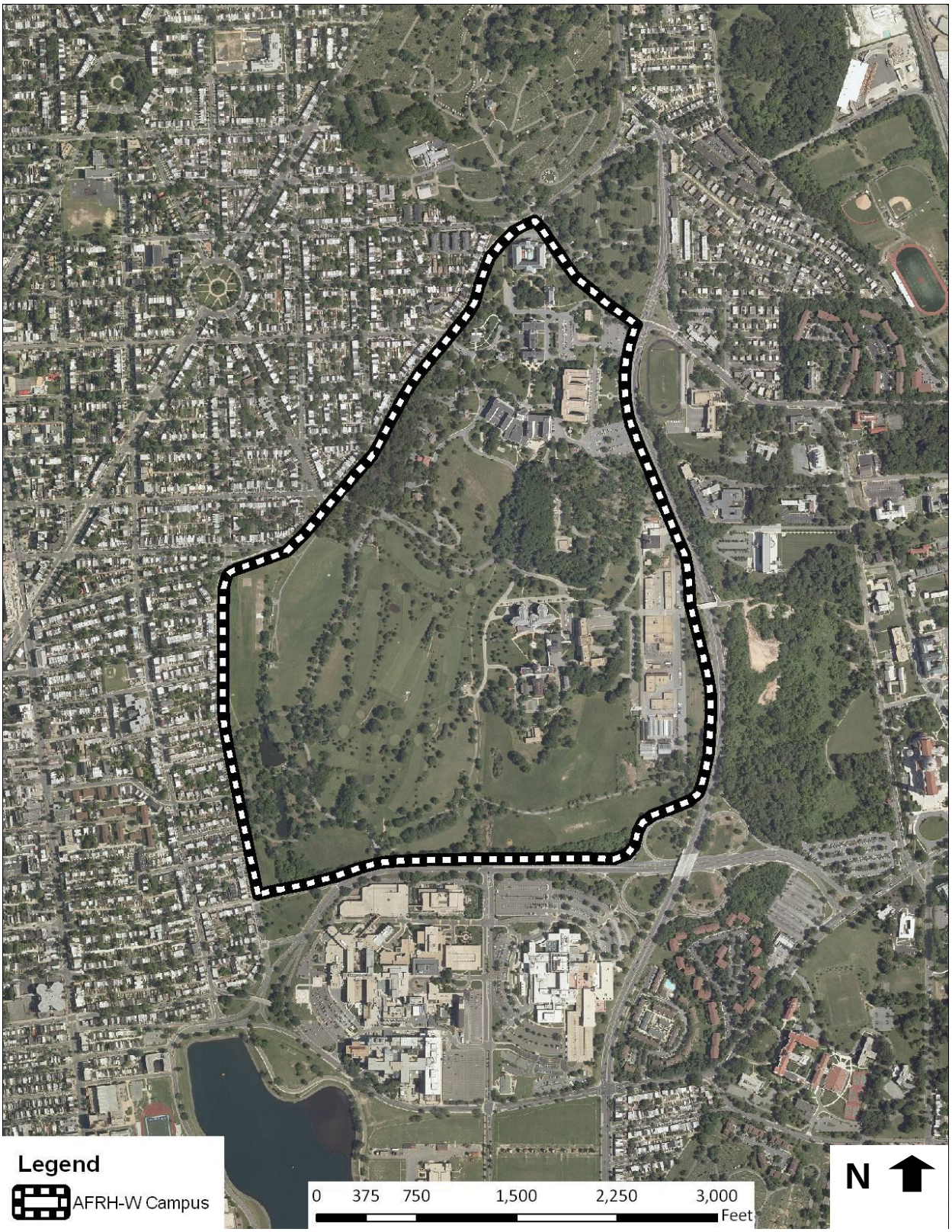


Figure 1-2: AFRH-W Aerial Photograph (NRCS 2008 Aerial Photograph)

Figure 1-3: AFRH-W Aerial Photograph (NRCS 2008 Aerial Photograph)

Figure 1-4: Street Map of AFRH-W (Adapted from DiMella Schaffer)

1.2 BACKGROUND

Built on farm land atop a hill overlooking the US Capitol, AFRH-W has housed thousands of former enlisted military personnel for nearly 160 years. AFRH-W was originally established by Congress in 1851 as an "asylum for old and disabled veterans" and funded using an endowment collected in lieu of pillaging by General Winfield Scott during his occupation of Mexico City in 1847. The Home served as a summer retreat for U.S. Presidents Chester Arthur, Rutherford B. Hayes, James Buchanan, and, most notably, Abraham Lincoln.

In 1991, Congress incorporated the U.S. Soldiers' and Airmen's Home and the U.S. Naval Home in Gulfport, Mississippi, into an independent establishment in the Executive Branch of the federal government, known as Armed Forces Retirement Home. In 2001, Congress renamed the U.S. Soldiers' and Airmen's Home and the U.S. Naval Home as the Armed Forces Retirement Home – Washington and Armed Forces Retirement Home - Gulfport, respectively. Hurricane Katrina destroyed the Gulfport facility in 2005. With GSA's assistance, ARFH is currently building a new facility to replace it. The Gulfport project should be complete in 2010. The veterans displaced by Hurricane Katrina are now residing at AFRH-W.

Today, AFRH-W is currently home to nearly 1,200 military veterans. The residents are older adults whose lives are fully independent, individuals requiring varying degrees of assistance, and those needing the most assistance living in Long-Term Care (LTC). AFRH-W facilities include dormitories, long-term care and assisted living facilities, chapels, a golf course, and various other administrative and support facilities. AFRH-W's building inventory includes 71 buildings and 82 structures. AFRH-W building inventory also includes larger, more modern, residences built within the last 60 years, including the LaGarde, Scott, and Sheridan Buildings.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of this project is to modernize and consolidate AFRH-W residential and health functions in the central core of the campus. The project is needed to provide a facility that meets the changing needs of the AFRH-W's current and future residents, and increases operational and programmatic efficiencies.

AFRH-W seeks to increase operational and programmatic efficiency by consolidating all current residential operations in the central campus core around an existing quadrangle. Currently, Memory Support (MS), Assisted Living (AL), and LTC residences are distributed throughout the campus. Consolidation of these functions would create a more unified residential community by moving all residents to the central core of the campus.

There is a need to improve and modernize campus facilities to meet the changing needs of AFRH-W's current and future residents. Constructed in 1954, the Scott Building (the proposed project site) is the oldest of three operational dormitories. The Scott Building currently accommodates resident and guest rooms as well as commons functions such as the chaplain offices, dining services, and the library. The Wellness Center which encompasses medical, dental, and eye clinics as well as resident services is also located in the Scott Building. The

Wellness Center is currently used by residents of the Sheridan and Scott Buildings for Medical services. These facilities are outdated and do not sufficiently accommodate the needs and interests of the residents. Further, AFRH-W must initiate steps to accommodate future residents. It is expected that future residents would have different medical and accessibility needs than current residents. Therefore, AFRH-W seeks to modernize its facilities to address the changing needs of veterans and reflect the latest standards and practices in senior housing and healthcare. It is desire of the AFRH-W that the modernized facilities would also be designed to:

- Improve consistency with contemporary philosophies in senior living, particularly the concept of "small house" design for skilled nursing care;
- Minimize programmatic and spatial adjacencies to facilitate a more unified residential community and to create ease of mobility from room to room, rooms to commons, and within the commons area itself;
- Increase energy and operational efficiency;
- Accommodate complex and extensive building infrastructure systems required for modern medical and residential needs;
- Provide efficient and modern common spaces that accommodate the needs of all residents;
- Apply modern gerontologic design principles to support physical, sensory, and cognitive challenges faced by the residents;
- Provide in-house medical care that promotes the concept of aging-in-place.
- Achieves contextual design and compatibility with the historic character of the AFRH-W Historic District and the immediately adjacent National Historic Landmark District.

While meeting the overall purpose and need of the project, AFRH-W must emphasize that the residents of the Home are the primary beneficiaries of all modernization and consolidation efforts. AFRH must also ensure that the project furthers the agency's mission of fulfilling our nation's commitment to its veterans by providing a premier retirement community with exceptional residential care and extensive support services on its historic Washington, DC, Campus.

1.4 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

1.4.1 Scoping Meeting and Agency Coordination

AFRH conducted a pre-scoping meeting with GSA and NCPC on October 19, 2009. The purpose of this meeting was to invite NCPC to participate as a cooperating agency in the NEPA process and provide information regarding the proposed project.

AFRH initiated the public scoping and comment process on November 12, 2009 through the distribution of 126 letters to regulatory and review agencies, as well as other interested parties,

requesting comment on the proposed project. This distribution list includes those that received the 2007 Final Environmental Impact Statement for the AFRH-W Master Plan. The 30-day public comment period was open through December 11, 2009. Comments received during this period were taken into consideration in the development of this EA. Copies of the scoping letter distribution list and comments received are located in chapter 7 and chapter 8, respectively.

As part of the scoping process, stakeholder meetings were also held. The first stakeholder's meeting occurred on November 23, 2009, and included representatives from the U.S. General Services Administration (GSA), National Park Service (NPS), the DC Office of Planning (DCOP), and the National Trust for Historic Preservation (NTHP). Additional agencies were invited but did not attend. The stakeholders' meeting invitation list and Meeting Minutes can be viewed in Section 7.

A second stakeholder meeting occurred December 9, 2009, and included representatives from NCPC, GSA and the US Commission of Fine Arts (CFA). Comments received from NCPC regarding this meeting requested that the EA include, in addition to a No Action Alternative, two new construction alternatives at the current Scott Building site. One of the new build alternatives should look at keeping the proposed new building out of the historic viewshed from the Lincoln Cottage. In January 2010 NCPC clarified that AFRH should include an alternative for renovating the current Scott Building, only if AFRH felt that was a reasonable alternative. Meetings are anticipated to continue, as necessary, throughout the NEPA review process.

In addition to NEPA, the process outlined in Section 106 of the National Historic Preservation Act (NHPA)(16 U.S.C. Section 470(f)) is being conducted separately from NEPA in accordance with a signed Programmatic Agreement, dated February 26, 2008, for the AFRH-W Master Plan.

1.4.2 Public and Agency Comments on the EA

Members of the public and governmental agencies are encouraged to comment on the contents of this Final EA. The organizations, agencies, and individuals listed in the Scoping Letter Distribution in chapter 7 were notified by mail and/or email of the availability of the Final EA. This EA will be posted on AFRH's website (http://www.afrh.gov), and hard copies are available for review at the following locations:

AFRH-Washington:
3700 North Capitol Street NW
Washington DC 20011

National Capital Planning Commission:
401 9th Street, NW
Washington DC 20004

Martin Luther King Library:
901 G Street, NW
Washington DC 20001

Petworth Neighborhood Library:
4200 Kansas Avenue, NW
Washington DC 20011

Comments on the EA must be postmarked by May 14, 2010. Comments should be mailed, emailed, or faxed to:

Mr. Christopher J. Burkhardt
Froehling & Robertson, Inc.
NEPA EA Contact
310 Hubert Street, Raleigh, NC 27603
T 919.828.3441 | F 919.582.0304 | M 919.630.1369
cburkhardt@fandr.com

1.5 ENVIRONMENTAL ISSUES CONSIDERED

This EA has been prepared to evaluate the potential impacts that the proposed project would have on a range of natural and man-made resources. These resources include the following:

- Historic and Cultural Resources, including Views and Vistas;
- Socioeconomic Resources (land use, planning policies, and public space);
- Natural Resources (vegetation, steep slopes, soil erosion and water resources);
- Transportation (vehicular circulation, parking, public transportation, and pedestrian and bicycle circulation);
- Utilities/Infrastructure (utilities, stormwater management, and hazardous materials);
- Air Quality;
- Energy and Environmental Performance;
- Noise.

1.5.1 Environmental Issues Eliminated from Detailed Study

Several issues were initially considered for evaluation in this EA, but were eliminated from detailed study since there would be no impacts or impacts would be negligible. These issues, and the rationale for their elimination, are as follows:

Economic and Fiscal Resources: The proposed demolition of the existing Scott Building and construction of a New Commons and Healthcare Center is not anticipated to increase or decrease the overall economic activity in the area, nor are local tax revenues anticipated to be impacted. Thus, these resources were dismissed from detailed study.

Demographics and Environmental Justice: Based on the nature of the project as a facility for AFRH residents only on AFRH campus property, the proposed action would not directly affect the surrounding residential populations in the area of AFRH-W campus. Thus, impacts to demographics or environmental justice were not studied in further detail.

Geology and Soils: Since the proposed construction would take place at the same location as the existing Scott Building, substantive impacts to the site's natural geology or soil makeup are

not anticipated. Additionally, soils in the area of the existing Scott Building are presumed to be generally the result of fill given that it was previously graded for construction. The U.S. Department of Agriculture (USDA) Soil Survey of the District of Columbia notes the presence of Udorthents (Fills) on the eastern boundary of AFRH-W; the southwest and southeast corners of the existing Scott Building; and toward the center of AFRH-W, just west of the perennial stream running through the center of AFRH-W. Immediately adjacent to the perennial stream and surrounding the pond in the southeastern portion of AFRH-W, Woodstown clayey sandy loams are present. Gravelly sandy loams (Sassafras and Croom Series) and silty clayey loams with gravel (Chillum Series) cover most of AFRH-W (USDA, SCS 1975). New construction would take into account and mitigate for construction on steep slopes and protection of surface features from runoff.

Wildlife: Wildlife within the proposed project site is limited to urban species adjusted to human disturbance due to its proximity to highly developed residential and urban areas and the lack of natural habitat on site. While some species may be temporarily dispersed during construction, urban wildlife would be expected to return to the site once construction is completed with no long-term adverse effects.

Climate Change: Due to the limited scope and nature of this project, impacts to climate change would be negligible. This proposed action would result in a more energy efficient building and reduce the size of the building from current conditions. Thus, this resource area was dismissed from detailed analysis.

2.0

ALTERNATIVES

2.0 ALTERNATIVES

Chapter 2 describes the proposed alternatives and those that were considered but dismissed from detailed analysis. The selection of the preferred alternative is also identified.

2.1 INTRODUCTION

This EA evaluates two action alternatives and a No Action alternative. The two action alternatives differ in terms of their design concepts for the proposed new Scott Building. Common to both alternatives is controlled demolition of the current Scott Building; relocation of AFRH-W Information Technology (IT) center to the basement of the Sherman Building; and construction of a new on-grade cooling tower to accommodate the transfer of chilled water services from the existing Scott Building to the Sheridan Building.

2.2 ALTERNATIVES CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

Four additional alternatives were assessed to determine their potential to meet the stated objectives in chapter one. However these alternatives were dismissed from detailed analysis in the EA because they do not meet the purpose and need.

2.2.1 Renovation of the existing Scott Building

The primary reason the renovation alternative was dismissed from additional consideration was financial. The existing Scott Building was constructed in 1954 and consists of two subterranean levels (the ground floor and basement) and eight floors above grade encompassing approximately 357,000 gross square feet. Extensive studies reveal that the renovation of the existing building would be cost prohibitive due to the many obstacles associated with updating the massive aging structure. The ten-year capital improvement study estimated the cost to upgrade the existing Scott Building infrastructure (mechanical, electrical and life safety systems) at approximately $80 million. This did not include the renovation of the building in order to meet the increasing need of accommodating the current resident's health care functions and overall renovation of the residential rooms and common areas, which was estimated to cost an additional $80 million. The total cost of the renovation of the existing Scott Building ($160 million) is greater than the cost of the new construction alternatives and also is above the funding allowance.

In addition to financial considerations, the existing Scott Building completely obscures a historic viewshed from the Lincoln Cottage to the U.S. Capitol Building and downtown Washington, DC. Keeping this building in place would forgo the opportunity to mitigate this adverse condition and restore the historic view from this structure. Further, although the renovation of the existing Scott Building would satisfy the need to consolidate the residential and medical operations in the central core of the campus, it would not satisfy the need of AFRH-W to provide facilities that meet modern senior living standards.

2.2.2 Locating a new building elsewhere on AFRH-W

Locating a new building elsewhere on AFRH-W would not meet the overall purpose of the proposed action to consolidate AFRH-W residential and health functions in the central core of the campus. The approved final AFRH-W Mater Plan (MP) identifies all potential locations for future development at AFRH-W. These future development parcels were defined based on the agency's goals of centralizing functions on the north section of AFRH-W, maintaining a secure perimeter for the residents, and preserving the historic character of AFRH-W Historic District. Three of the development parcels identified in the MP for AFRH-W use are located east of the Sheridan Building. Because these parcels are adjacent to North Capitol Street and isolated from the historic AFRH-W core, they are intended for administrative uses and are not suitable site for the New Commons and Healthcare Building. The only other development parcel identified in the MP for AFRH-W use is located northwest of the Sherman Building, on the west side of the quadrangle. Because of the specific design and size constraints identified for this parcel in the MP, the site cannot accommodate the New Commons and Healthcare Building. All other parcels identified in the MP as locations suitable for development are located in the south section of AFRH-W and are intended for third-party development.

2.2.3 Implosion of the Existing Scott Building

The two action alternatives analyzed in this EA, Alternatives A and B described below, require the demolition of the existing Scott Building in order to develop a new building that would meet the purpose and need of the project. Demolition of the existing Scott Building could occur by implosion or controlled demolition.

The implosion alternative was dismissed from detailed analysis for the following reasons: high cost, District of Columbia regulatory time limitations related to public notifications required for large explosions, limitations on explosives allowed within the District of Columbia, and potentially significant air quality impacts. Air quality impacts are described in more detail below:

General implosion activities and debris removal would generate nuisance dust related to disturbance of non-hazardous materials such as concrete, wood, gypsum, and soil. US EPA National Emission Standards for Hazardous Air Pollutants (40 CFR 61) require that visible emissions not be generated from the site as a result of implosion. Potentially the initial implosion process would result in generation of a dust cloud that may not be controllable and result in generation of a dust plume that has the potential to have a major adverse impact on adjacent properties and sensitive populations, including AFRH-W resident population. Another air quality concern was the potential disturbance of hazardous materials during the implosion of the structure.

2.2.4 Alternate Cooling Tower Locations

Chilled water is currently generated from electricity in the existing Scott Building and serves both the Scott and Sheridan Buildings. Construction of a new permanent chiller plant would be necessary prior to demolition of the existing Scott Building so there are no disruptions of service to the Sheridan Building. This new chiller plant would be located in the existing

Sheridan Building and would require a new cooling tower structure nearby. Several locations for the cooling tower were considered but removed from detailed analysis.

Placing the new cooling tower on the roof the Sheridan Building was considered. However, the Sheridan Building is a year-round residential facility, and the noise impacts from installing a cooling tower on the roof could be potentially significant. Large holes would be core drilled on each floor of the Sheridan to run the necessary lines to the roof. The potential construction noise coming from installation would disrupt each floor, construction and operational noise on the roof would impact residents directly below.

In order to avoid significant noise impacts to the residents during construction and operations, it was determined that the best cooling tower location would be a ground level structure separate from the Sheridan Building. The Sheridan Building Plaza east of Sheridan was considered but removed from detailed analysis because it is used by the residents for recreational purposes. Constructing a cooling tower in this location would significantly alter the existing formal open space. Sheridan Plaza is defined by a semi-circular perimeter of mature trees. The southern edge of this tree area is bounded by the northern edge of an existing surface lot known as Sheridan (3) in the MP. It is along this edge that alternative locations for the cooling tower were studied, with the understanding that the impact on open space, existing trees and existing parking would be minimized. Given the existing conditions, it was determined that as the distance to the Sheridan Building from the proposed cooling tower location increased the potential impacts to trees and open space decreases. The potential impacts from noise and to views and vistas are also reduced as distance increases. However, construction cost increases with distance due to the added materials and labor.

The vegetated area alongside the parking lot southeast of the Sheridan Building between the Sheridan Building and North Capitol Street and the back of the parking lot was also considered for the cooling tower location. This area offers less impact to trees, open space, construction cost, noise, and views and vistas than areas closer to the Sheridan Building or in the grassy area. The existing trees in this area would mitigate potential impacts from noise and to views and vistas.

Placing the new cooling tower structure in the open space north of the parking lot adjacent to the east of the Sheridan Building would require the removal of several mature trees. Furthermore, this location would be more visible from the Sheridan Building and produce increased noise levels while decreasing air quality during operational use.

2.3 ALTERNATIVES

AFRH requires the consolidation of residential units and various healthcare functions including Memory Support, Long Term Care, Assisted Living, and Independent Living in order to meet the needs of AFRH-W current residents. In order to achieve the goals for AFRH-W, the new structure would provide a modern standard of living designed to incorporate the changes in philosophy created by the advances in gerontology over the last sixty years.

The proposed project is a component of the larger comprehensive multi-phase efforts to provide for needed improvements to AFRH-W community facilities. Community operations serve several specifically defined categories of population (Independent Living, Assisted Living, Long Term Care and Memory Support) and Commons Facilities serves the needs of multiple populations. The proposed project envisions new space to provide a Health Services Facility for Long Term Care (LTC) and Memory Support (MS) and the associated Commons spaces serving the entire population. AFRH-W has proposed the project site as the preferred location for the new facility because of site's close proximity and direct connection to the existing Sheridan Building, which currently houses a majority of the independent living residents, and is the intended future home of all assisted living residents. The proposed project site also fronts on the landscaped exterior space known as the Sherman-Scott Connector or "AFRH-W Quadrangle" which is the shared exterior space in the front of the three existing primary AFRH buildings (Sherman, Sheridan and Scott Buildings) and is currently considered the symbolic heart of the home.

The new building would be the center of activity for the entire community and would be a place where residents convene for socializing, physical fitness, educational pursuits, musical interests, business transactions, and many other recreational activities. In addition, the amenity spaces would include a central kitchen and dining hall where most of the residents dine three times per day. The new building would include a Wellness Center. The Wellness Center would provide residents with facilities for their primary medical needs, ranging from dental to psychological. The Wellness Center would provide in-house medical care and promote the concept of aging-in-place by allowing residents to receive increasing levels of care without having to leave the facility.

The new building would also contain a skilled nursing facility with single bedroom units for approximately 36 long term care residents and approximately 24 memory support residents. A key component to bringing state-of-the-art care to residents is the incorporation of the small-house concept in the design of the new skilled nursing floors. Small house design gathers a limited number of units around a common space that is shared by those units, creating several groups on a floor. These small groups allow a more intimate character than the large, floor-wide common spaces in traditional facilities like the existing Scott Building. Small house design would improve consistency with contemporary philosophies in senior living by providing a limited number of units around a common space.

Most of the staff and administration offices would be located within the New Commons and Healthcare Building. Locating the offices in the combined facility would create opportunities for increased operational and organizational efficiency, maximize programmatic and spatial adjacencies, and facilitate a more unified residential community. Both action alternatives would incorporate energy efficient measures into the design, further increasing energy and operational efficiency.

2.3.1 Actions Common to Both Action Alternatives

Both action alternatives (A & B) propose new construction within the existing 91,700 square foot footprint of the existing Scott Building. The existing Scott building is approximately 357,000 gross square feet. Alternatives A & B call for the controlled demolition of the existing Scott Building. Before demolition is set to occur, current residents of the Scott Building would either return to AFRH-Gulfport or would be housed in the Sheridan Building. Resident services that occur in the existing Scott Building would be temporarily housed in the Sheridan and Sherman Buildings.

The building's central location would make the New Commons and Healthcare Building readily accessible from the existing structures on AFRH-W. The existing healthcare center is currently located on the southern portion of AFRH-W. Therefore, residents of the existing healthcare center need to walk to the existing Scott Building to participate in community activities. In the same manner, residents of the existing Scott Building need to travel south to visit the existing Healthcare Center. Having a central location would reduce the amount of walking required to get from room to room, rooms to commons, and room to healthcare.

Both action alternatives concepts for the new building represent a reduction in size from the existing Scott Building. The existing Scott Building is too large for the current or projected population, which when combined with its energy inefficiency, results in excessive operational costs that place a financial burden on AFRH. Replacing the existing Scott Building with a smaller scale facility would also provide the opportunity to restore architectural balance to the structures on the quadrangle, and improve the views of the Washington skyline from the historic Lincoln Cottage.

The new building concepts in Alternatives A & B would reduce the amount of walking within the commons area itself. This length of required walking is defined as the horizontal travel distance. The ease of movement from floor to floor is defined as vertical circulation. The existing Scott Building is seven stories, the common areas are at the bottom and the resident's rooms are on top. Vertical circulation at the existing Scott Building is in-efficient due to the size of the building and the required travel distance from the common area up to the seventh floor. A smaller scale combined facility would improve the vertical circulation for residents, staff, and visitors as the distance traveled up and down would be substantially less.

For both action alternatives the proposed action would necessitate the relocation of AFRH-W IT center. The preferred location for the relocated IT center is in the basement of the Sherman Building, a historic structure that is part of the US Soldier's and Airmen's Home National Historic landmark and AFRH-W Historic District.

Finally, chilled water is currently generated from electricity in the existing Scott Building and serves both the Scott and Sheridan Buildings. A permanent new chiller plant would be necessary prior to demolition of the existing Scott Building so as not to disrupt service to the Sheridan Building. This new chiller plant would be located in the existing Sheridan Building and would require a new cooling tower that would be located on-grade southeast of the Sheridan Building within the existing parking lot (Figure 2-7).

The on-grade tower would have a clear relationship with the existing Sheridan Building. The southern edge of the tower would align with the southern facade of the Sheridan Building. The cooling tower location is within the area set aside for new development in the Master Plan on an asphalt parking lot.

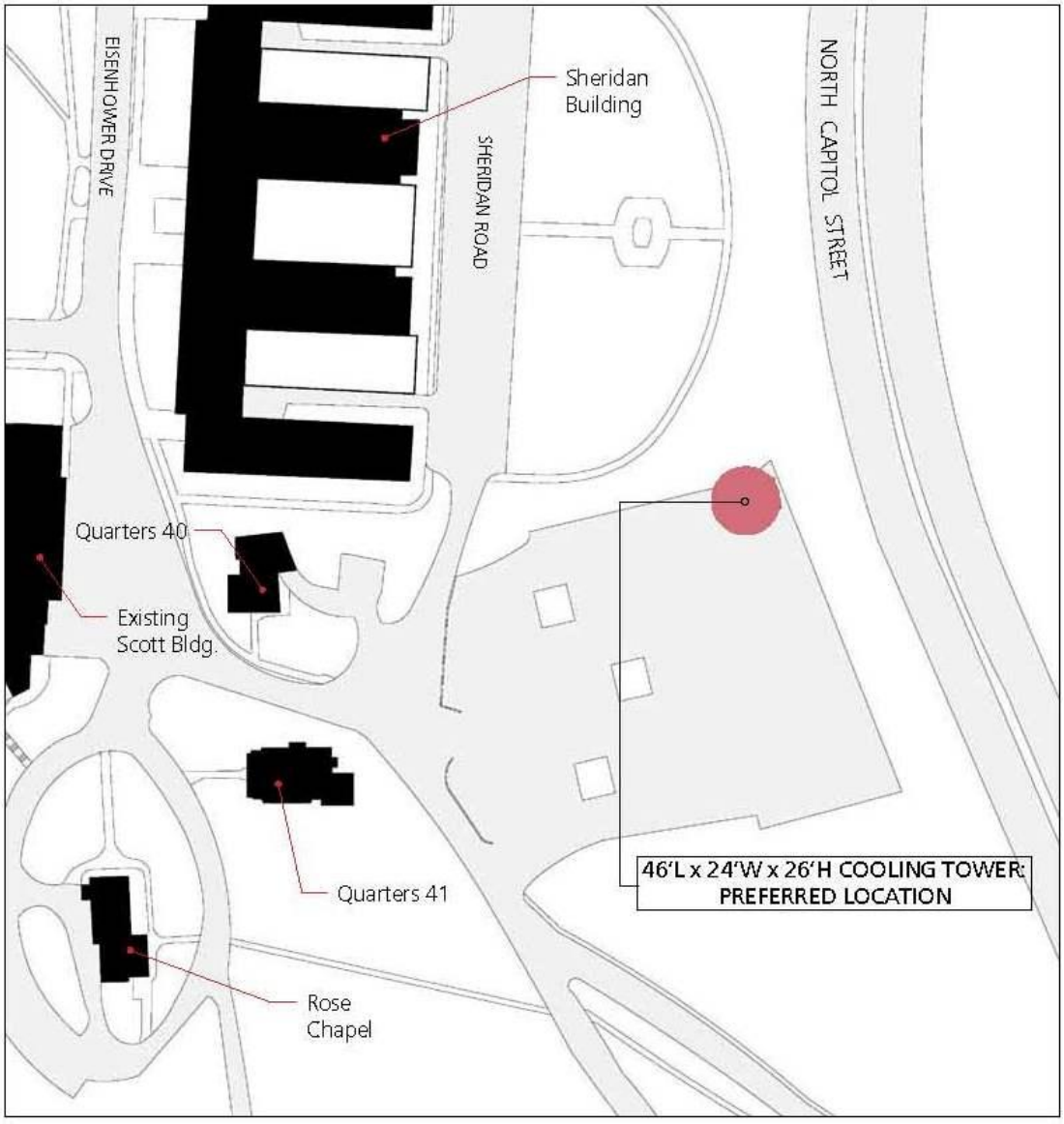


Figure 2-7: Preferred Cooling Tower Location (Adapted from DiMella Shaffer)

2.3.2 **Alternative A: Preferred Alternative**

Alternative A would maximize programmatic and spatial adjacencies by stacking the healthcare functions above the commons functions at a reduced scale form the existing Scott Building. This smaller scale stacking allows multiple beneficial design elements that increase energy and operational efficiency. The new building would have a footprint of 60,348 square feet, reducing the existing foot print by 31,352 square feet. The new building would have a gross square footage of 155,000 reducing the gross square footage by 201,446 square feet. A smaller footprint maximizes the area available for open space and creates a small perimeter that is easier and more cost effective to construct, operate, and maintain. A combined facility would greatly minimize horizontal travel distances. The shorter height and reduced gross square footage would increase vertical circulation efficiency.

With its compact program, the building mass would be three stories as seen from the quadrangle, which is similar to the height of the Sherman Building. The long east/west dimension of the three-story building provides a strong edge along the southern side of the quadrangle, parallel to the Sherman Building on the northern side. The footprint of Alternative A is centered on the north-south axis of the Sherman and Grant Building acknowledging and strengthening the formal relationship with the nineteenth century buildings of institutional scale.

The three-story building sits upon a one-story base which is below grade on the quadrangle, and opens to view as the grade drops to the southern side of the site. This base forms a series of stepped terraced roof areas below which house the commons functions. This combination of massing reflects the transition of the site from the formal quadrangle to the picturesque character of the officers' quarters and Meadow to the south and southwest. This design would create unobstructed south-facing views of downtown Washington D.C. for the residents and would not intrude on the Lincoln Cottage viewshed. Desirable views would be available from the healthcare resident's rooms either south over the Chapel Woods and Meadow or north over the quadrangle.

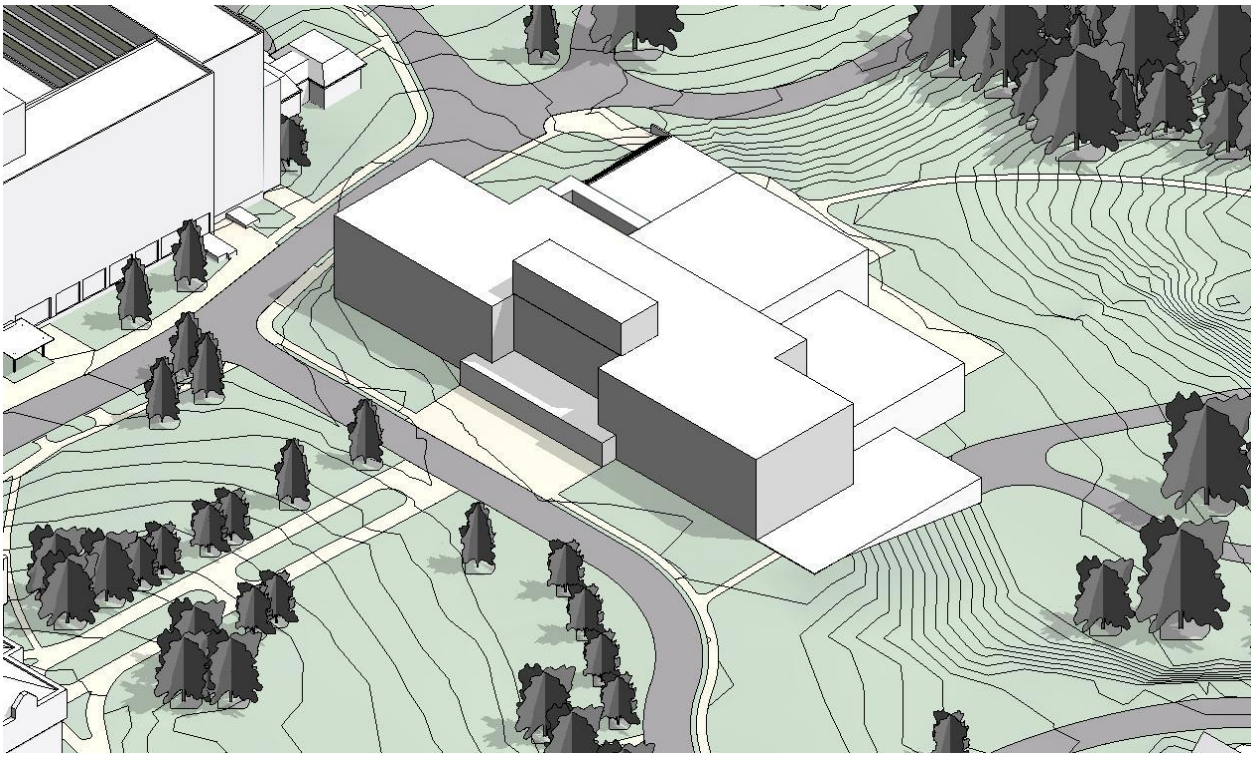


Figure 2-1: Concept design of Alternative A – View from northwest

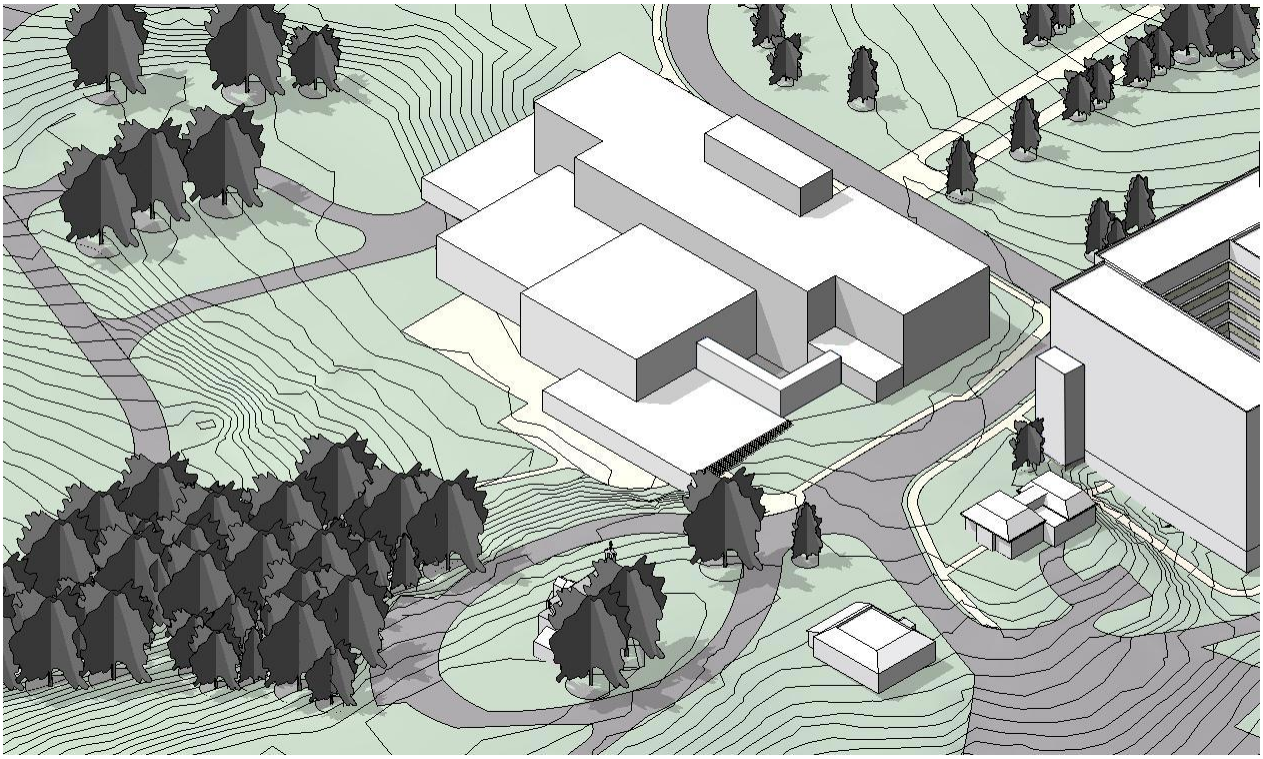


Figure 2-2: Concept design of Alternative A – View from southeast

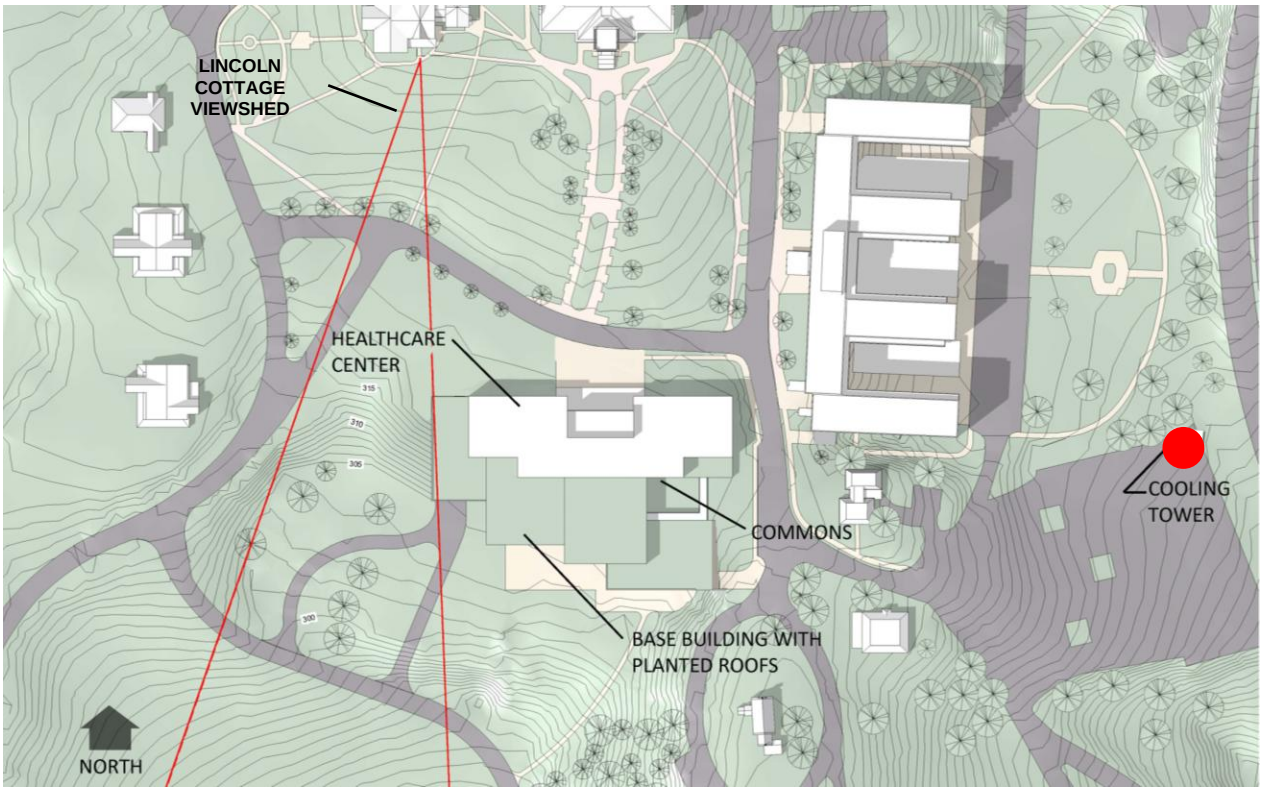


Figure 2-3: Design concept of Alternative A – Plan view

2.3.3 Alternative B

Alternative B would express the new building as two separate building masses. Separate masses allow for separate identities for both the Commons and Healthcare Facilities. These separate masses would create a medium sized footprint of 67,166 reducing the existing footprint by, 24,534 square feet less than the existing Scott Building. The new building would have a gross square footage of 166,184 reducing the gross square footage by 190,816 square feet. This smaller footprint would require moderate operation and maintenance costs. Both horizontal and vertical circulation would be improved by consolidating functions in one space and creating a smaller scale facility.

The height of the two building masses would be two-stories as seen from the quadrangle. Their long dimensions would run north/south so that their short ends face the quadrangle. These short ends are similar in width to the east and west wings of the Sherman Building. The area between the two masses would create an exterior courtyard. Alternative B would provide a less-formal relationship with the Sherman Building by virtue of its smaller height, north/south length, segmented massing, and smaller defined edge to the south side of the quadrangle. The two-story building height would be similar to the officer quarters and Lincoln Cottage. However, the long low building massing would not be consistent with the existing building massing.

An atrium feature could give prominence to the Commons entry and provide a connecting view to activity on three levels of the building. This atrium could also bring abundant daylight into all levels. The two-story building masses would be connected by a one-story base structure that is below grade from the quadrangle. This base structure houses commons functions and employs roof terraces for functions outside the floors above. This design would open views from the quadrangle to the south and provide several glimpses of Chapel Woods and downtown skyline along Scott Drive due to building masses having their long dimensions running north/south. Although the height of the one-story base is below the site line of the Lincoln Cottage viewshed the rooftop terrace would have above ground elements that would obscure a portion of the view toward downtown Washington D.C. to some degree. Perimeter space with south-facing unobstructed views would be limited. Residents would have rooms with views of the adjacent commons massing rather than views over the quadrangle and Meadow.

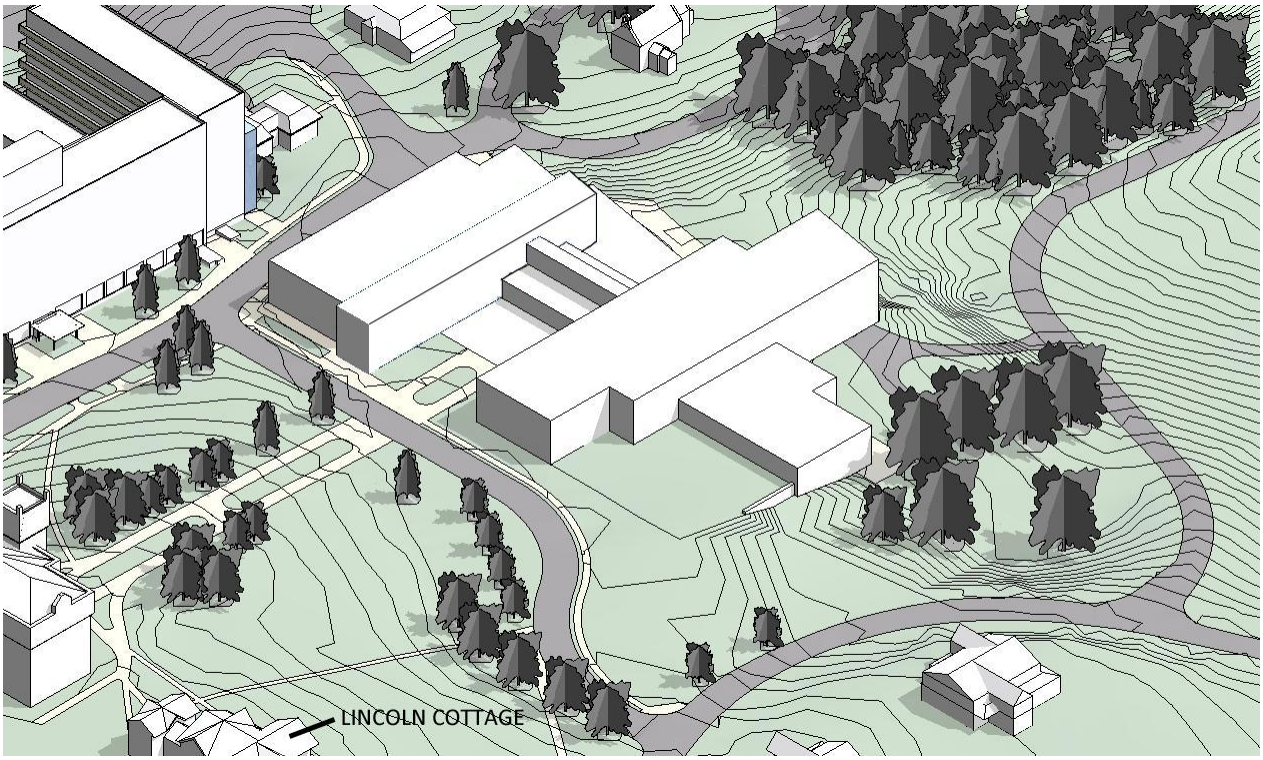


Figure 2-4: Design concept of Alternative B – View from northwest

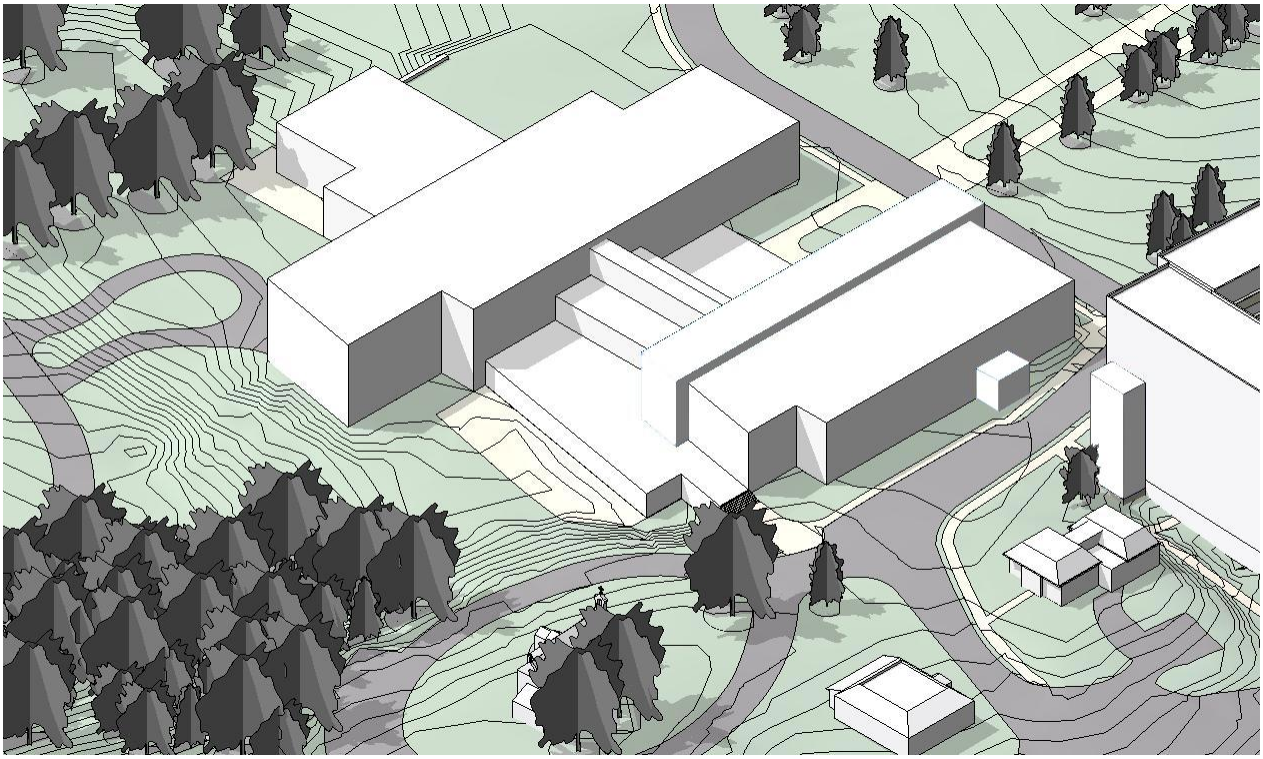


Figure 2-5: Design concept of Alternative B – View from southeast

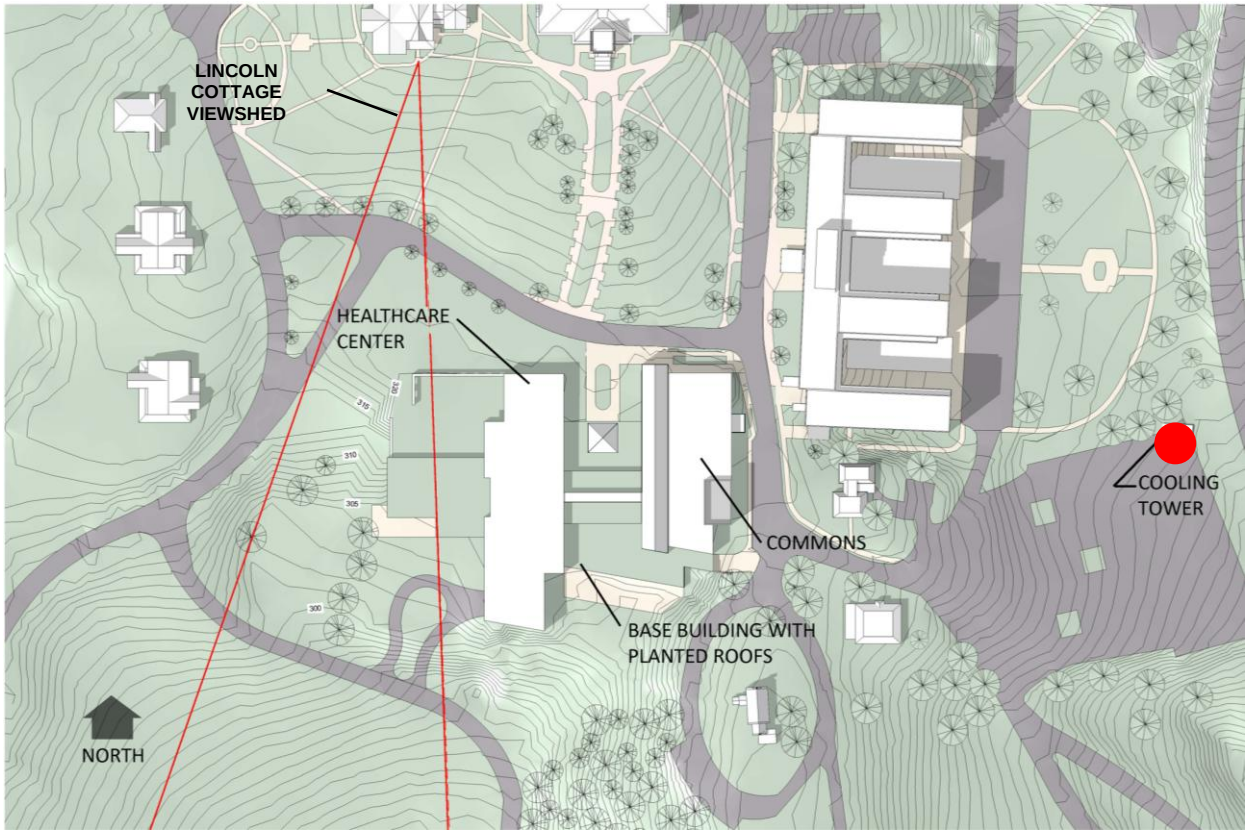


Figure 2-6: Design concept of Alternative B – Plan view

2.3.4 Alternative C: No Action Alternative

Under the No Action Alternative, the existing Scott Building would remain as a building that is too large, inefficient, expensive to maintain, and outdated for AFRH's needs. The No Action Alternative allows AFRH-W IT Center, Chilled Water Plant, and Cooling Tower to remain in the existing Scott Building.

The No Action Alternative would not provide modernized facilities that meet the changing needs of the AFRH-W residents. Healthcare and residential functions would not be consolidated into the central core of the campus, and instead remain dispersed throughout the 272 acres of AFRH-W.

The No Action Alternative also does not provide the opportunity to improve the historic Lincoln Cottage viewshed and construct historically compatible architecture. Further, the No Action Alternative does not improve energy efficiency, stormwater management, or open space. Horizontal travel distances would remain substantial and vertical circulation inefficient within the Scott Building. The no action alternative would not meet the purpose and need of the proposed action.

2.4 COMPARISON OF ALTERNATIVES

Both Alternatives A and B would meet the purpose and need of the proposed project, however they differ in terms of their design concepts for the proposed new Scott Building. Alternative A & B differ in height, massing, building footprint, strength of formal relationship with the Sherman Building, strength of historic viewshed improvement, and strength of operational and maintenance cost, horizontal travel distance, and vertical circulation.

The No Action Alternative (Alternative C) maintains the status quo and would not change or improve upon height, massing, strength of formal relationship with the Sherman Building, strength of historic viewshed improvement, strength of operational cost, maintenance cost, horizontal travel distance, and vertical circulation.

Table 2-1 summarizes the major design elements associated with each Action Alternative and the No Action Alternative as compared to existing conditions.

Table 2-1: Comparison of Action Alternatives Design Elements

Site Feature	Alternative A	Alternative B	Alternative C: No Action
Relationship with Sherman Building	Would create a strong formal relationship by virtue of its center placement on north/south axis and east/west orientation	A less-formal relationship would be created by its placement on either side of the north/south axis	Relationship would remain as it is currently
Lincoln Cottage Viewshed	Would not intrude on the viewshed	Elements of the rooftop terrace would intrude	The viewshed would remain completely

Table 2-1: Comparison of Action Alternatives Design Elements			
Site Feature	**Alternative A**	**Alternative B**	**Alternative C: No Action**
		upon a portion of the viewshed to some degree	obstructed.
Travel distances within the building (Horizontal Circulation)	Distances would be greatly reduced	Distances would be reduced	substantial travel distances within the building would remain
Ease of movement from floor to floor (Vertical Circulation)	Efficiency would be greatly increased	Efficiency would be increased	Would remain in-efficient
Building Height and Massing	Would create a three-story height and compact massing creating a scale and presence on the quadrangle consistent with the massing and scale of the Sherman building	Would keep the building height within two-stories of the quadrangle, similar to the height of the officer quarters and Lincoln Cottage, however the long low building would not be consistent with the adjacent structures	The height of the existing Scott Building would not change. The scale and presence of the building on the quadrangle would remain inconsistent with adjacent structures
Building Footprint	Would create a much smaller perimeter that is easier and more cost effective to operate and maintain; greatly increases pervious surfaces at proposed project site	Would create a medium sized perimeter requiring moderate operation and maintenance cost; increases pervious surfaces at the proposed project site	The Scott Building perimeter would not change and would continue to be costly to operate and maintain; impervious surfaces would remain at current levels

2.5 SELECTION OF PREFERRED ALTERNATIVE

While both action alternatives meet the purpose and need of the proposed project, AFRH has selected Alternative A for implementation because it provides the greatest overall improvement to residents and facility operations. Specifically, Alternative A would restore the historic viewshed from the Lincoln Cottage; achieve contextual design and compatibility with the historic character of the surrounding AFRH-W Historic District and the immediately adjacent National Historic Landmark; provide the most efficient travel distances within the building for residents and staff; introduce the greatest amount of pervious surfaces at the proposed site; and be the most cost effective to maintain and operate.

3.0

AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This chapter describes the existing environmental conditions at AFRH-W of the resource issues that have been carried forward for more detailed analysis in this EA. Section 1.5.1 lists the resource issues that were eliminated from detailed study.

3.1 CULTURAL RESOURCES

A study area for historic properties has been identified to determine what resources may be affected by the AFRH-W Residential and Medical Facilities Consolidation and Modernization Project. The study area includes the entire 272-acre AFRH-W site defined by Irving Street, NW, on the south; Park Place, NW, and Rock Creek Church Road, NW, on the west; and by Harewood Road, NE, and North Capitol Street on the northeast (See Figure 3-1).

3.1.1 Site History

AFRH-W (formerly the U.S. Soldiers' and Airmen's Home) was founded in 1851 as a military asylum for the relief and support of invalid and disabled soldiers of the U.S. Army. It was developed on the country estate of George Washington Riggs, a prominent Washington banker. Sited outside the city's formal limits with panoramic views of the U.S. Capitol, the Riggs property featured an early Gothic Revival-style cottage known as Corn Rigs, as well as agricultural buildings, woodlands, and pastures. The estate was landscaped in the manner promoted by the influential aesthete Andrew Jackson Downing.

Since the mid-nineteenth century, numerous military officers who played key roles in the military history of the country have been associated with the operation of the Home, including General Winfield Scott, General William T. Sherman, General Philip Sheridan, and Surgeon General Joseph K. Barnes. The Home's importance also derives from its role in American political history and its association with President Abraham Lincoln. One of four sitting U.S. presidents and their respective Secretaries of War known to have summered at the Home, Lincoln served during one of the most turbulent periods in American history. While residing at the Home, Lincoln worked on a draft of the Emancipation Proclamation, launching the end of legalized slavery in the United States.

Many of the built resources at the Home are outstanding representations of their respective architectural styles and reflect dominant aesthetic vocabularies of public and private design. During the late nineteenth century, a comprehensive landscaping program was implemented to enhance the property's character as a park that would be available to the public. The land was also used for agricultural activities, which became a key component of the Home's character from its beginnings through the mid-twentieth century.

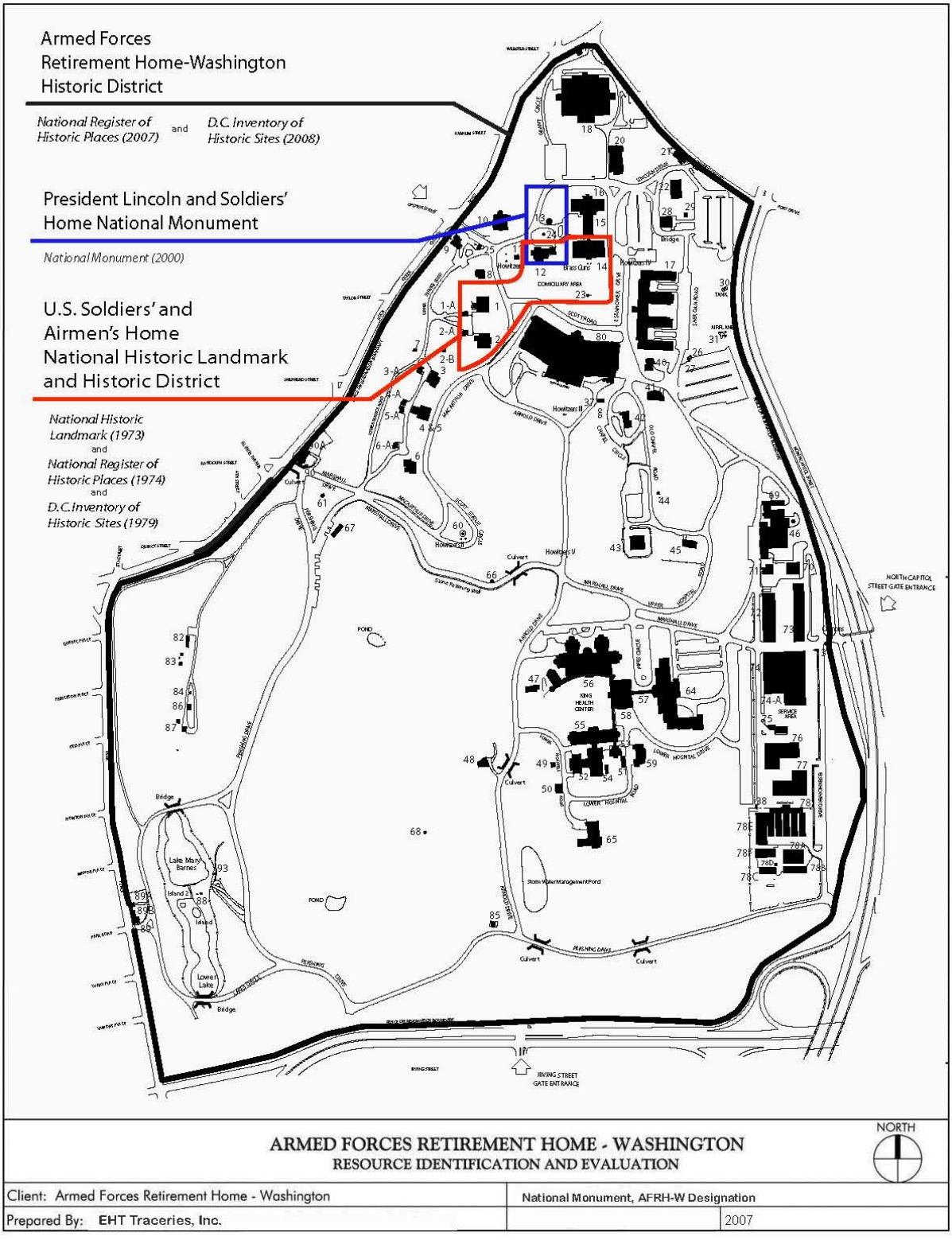


Figure 3-1: AFRH-W National and Local Historic Designations. Study Area of Historic Resources encompasses entire AFRH-W. (Adapted from ARFH Final Environmental Impact Statement, 2007)

3.1.2 Archaeological Resources

A Phase 1A Archeological Assessment was conducted on AFRH-W in October 2004. The study consisted of background research including review of the archeological and historical site files of the District of Columbia Historic Preservation Office (D.C. HPO), soil surveys of the U.S. Department of Agriculture (USDA), and AFRH-W Historic District nomination. Additional research was conducted at the National Archives in Washington, where relevant historic documents including maps and published histories were examined and incorporated in the Phase 1A Archeological Assessment.

This archeological study found that, despite its central location and historic importance, the extensive construction and grading activities associated with the operation of the Home during the nineteenth and twentieth century's has greatly altered many areas within AFRH-W. However, there are five previously identified historic archeological sensitivity zones on the site: site of a post-1873 cross-gable, wood-frame building; site of a pre-1870 building cluster; site of the Carlise Cottage; site of the 1876 Barnes Hospital; and the Lincoln Cottage Archeological Site. Particular sections of AFRH-W may yet retain intact archeological remains dating to the prehistoric and historic periods. Therefore, AFRH-W has an overall moderate probability to contain intact cultural remains.

3.1.3 Historic Resources

AFRH-W includes several identified historic resources and areas with national and local historic designations. They include AFRH-W Historic District (D.C. Inventory of Historic Sites and National Register of Historic Places), the United States Soldiers' and Airmen's Home National Historic Landmark, and the President Lincoln and Soldiers' Home National Monument.

District of Columbia Inventory of Historic Sites

On November 8, 1964, the District of Columbia listed two AFRH-W buildings in the D.C. Inventory of Historic Sites – the Soldiers' Home, Main Building (Sherman Building) and the Lincoln Cottage (Corn Rigs-Anderson Building). The Soldiers' Home, Main Building (Sherman Building), which in its entirety includes the Sherman Building South (Scott Building), the Annex, and Sherman North, was recognized as the first dormitory at AFRH-W. The Lincoln Cottage (Corn Rigs-Anderson Building) served as President Lincoln's summer retreat from 1862 to 1864. (See President Lincoln and Soldiers' Home National Monument below for additional information.)

On March 3, 1979, a portion of AFRH-W was designated a historic district and listed in the D.C. Inventory of Historic Sites. The local historic district encompassed the Lincoln Cottage, Sherman Building, Officer's Quarters 1, Officer's Quarters 2, and the immediately adjacent land.

On May 22, 2008, the boundaries of the 1979 local historic district were expanded to the entire 272-acre AFRH-W site. The updated local historic district follows the boundaries of the National Register historic district designated on December 5, 2007. (See below.)

United States Soldiers' and Airmen's Home National Historic Landmark[1]

On November 7, 1973, in recognition of the Home's outstanding national importance, the federal government designated a portion of AFRH-W as a National Historic Landmark (NHL). The NHL recognizes four buildings at the Home – Lincoln Cottage, Sherman Building, Officer's Quarters 1, and Officer's Quarters 2. These buildings were the first buildings occupied and/or built by AFRH and comprise the United States Military Asylum as it was originally developed. On February 11, 1974, the United States Soldiers' and Airmen's Home National Historic Landmark was listed in the National Register, and on March 3, 1979, the site was listed in the D.C. Inventory of Historic Places.[2] (See above.)

President Lincoln and Soldiers' Home National Monument

On July 7, 2000, under the Antiquities Act of 1906 – which grants the President authority to designate national monuments in order to protect objects of historic or scientific interest – President William J. Clinton declared the Lincoln Cottage and its surrounding land the President Lincoln and Soldiers' Home National Monument in honor of the site's notable role in the presidency of Abraham Lincoln. The national monument consists of a 2.27-acre rectangular area extending north from the Lincoln Cottage and including the Bandstand and Water Tower.

A cooperative agreement established between the National Trust for Historic Preservation and AFRH-W enables the two parties to share in the stewardship and preservation of the National Monument.

Armed Forces Retirement Home-Washington Historic District

AFRH-W Historic District was listed in the National Register on December 5, 2007. The historic district is comprised of the entire 272-acre Washington branch of AFRH and is bound by North Capitol Street, Irving Street, Park Place, Rock Creek Church Road, and Harewood Road, NW.

AFRH-W Historic District is important under the areas of Military, Politics/Government, Social History, Health/Medicine, Entertainment/Recreation, Architecture, Landscape Architecture, Agriculture, and Archaeology and qualifies for National Register listing under the following four criteria:

- Criterion A for properties that are associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B for properties that are associated with the lives of persons significant in our past;
- Criterion C for properties that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;

[1] Alternately, the National Historic Landmark is identified as "United States Soldiers' Home" or "Soldiers' Home National Historic Site."

[2] Note that the boundaries of the National Historic Site as defined in the D.C. Inventory of Historic Sites vary slightly from the boundaries of the site as defined in the National Register of Historic Places.

- and Criterion D for properties that have yielded, or are likely to yield, information important in prehistory or history.

The two continuous periods of significance of the historic district are 1842 to 1851 and 1851 to 1951. The first corresponds to the period when George Washington Riggs owned, improved, and occupied the farmland. The second period of importance begins with the establishment of the Washington branch of the military asylum and ends when AFRH-W liquidated its agricultural assets and disposed of the southern portion of the property.

The National Register recognizes 250 resources within AFRH-W Historic District, including buildings and structures, fences and gates, landscape resources, roads, views and vistas, and archaeological sites. Of these, 144 are listed as contributing resources to the historic district, and 106 are classified as noncontributing resources. (See Figures 3-2 thru 3-6 and Figure 3-8)

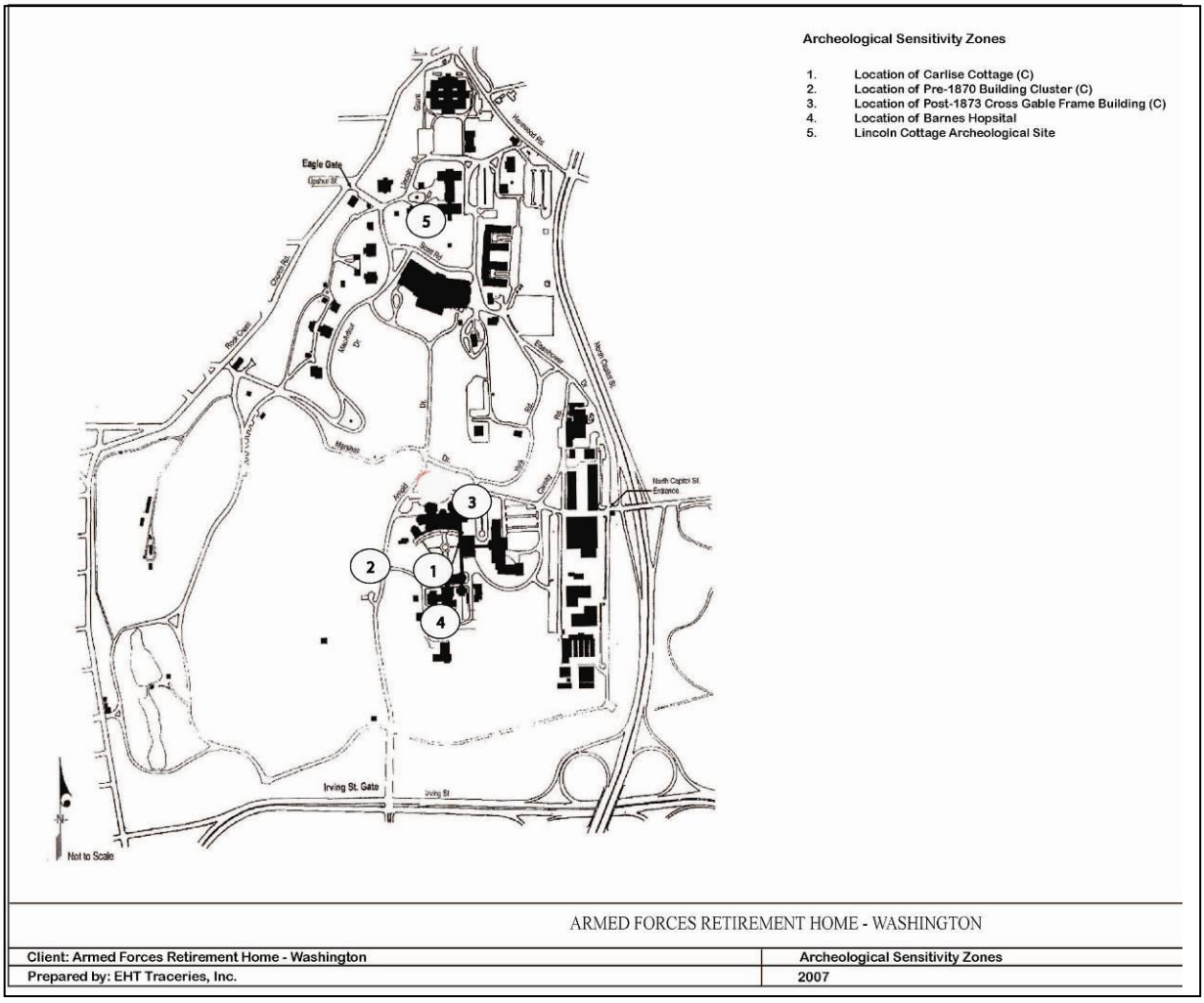


Figure 3-2: Archeological Sensitivity Zones (AFRH-W Historic District National Register of Historic Places nomination form, 2007)

Figure 3-3: Map of Contributing and Noncontributing Landscape Resources (AFRH-W Historic District National Register of Historic Places nomination form, 2007)

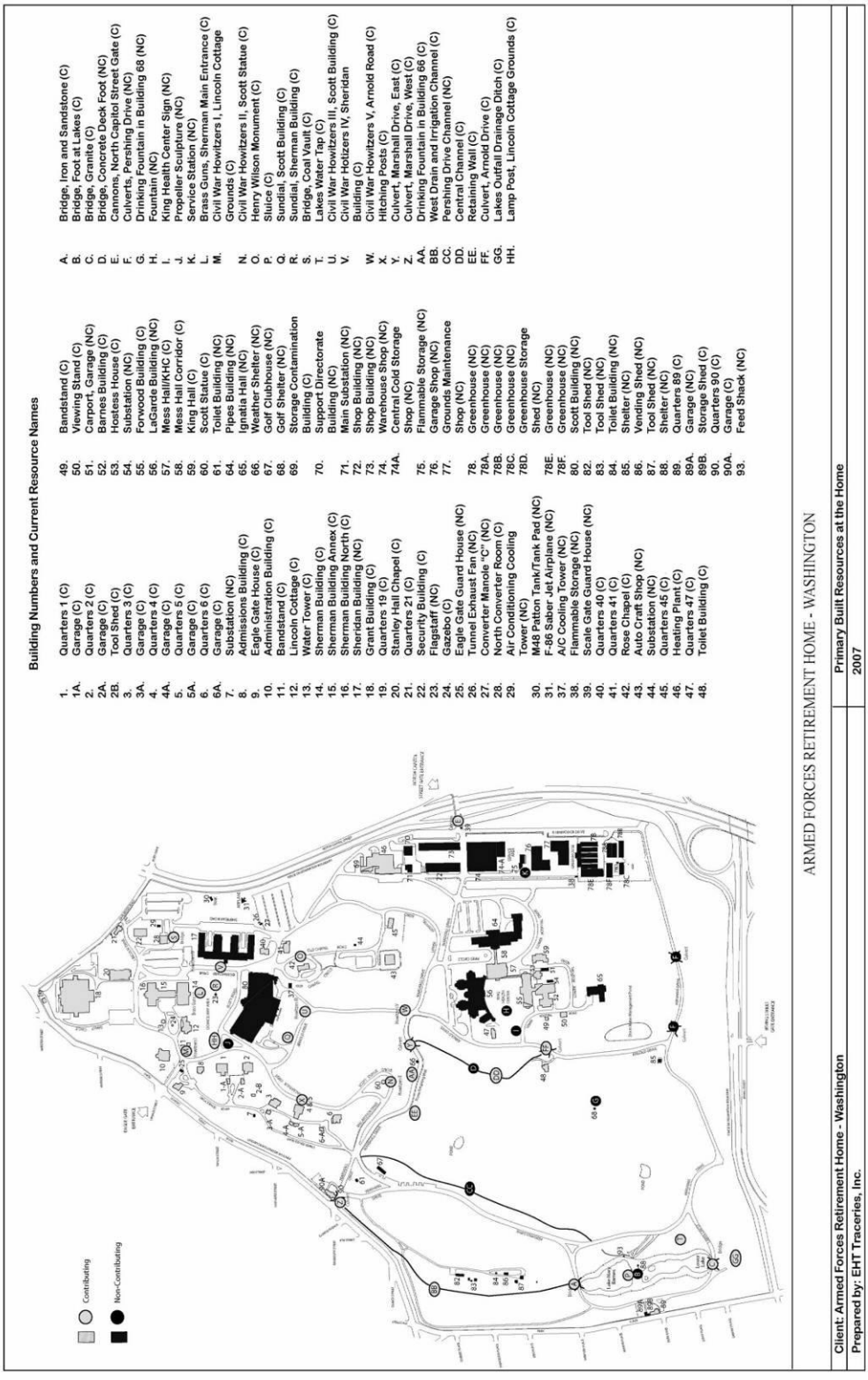


Figure 3-4: Map of Contributing and Noncontributing Built Resources (AFRH-W Historic District National Register of Historic Places nomination form, 2007)

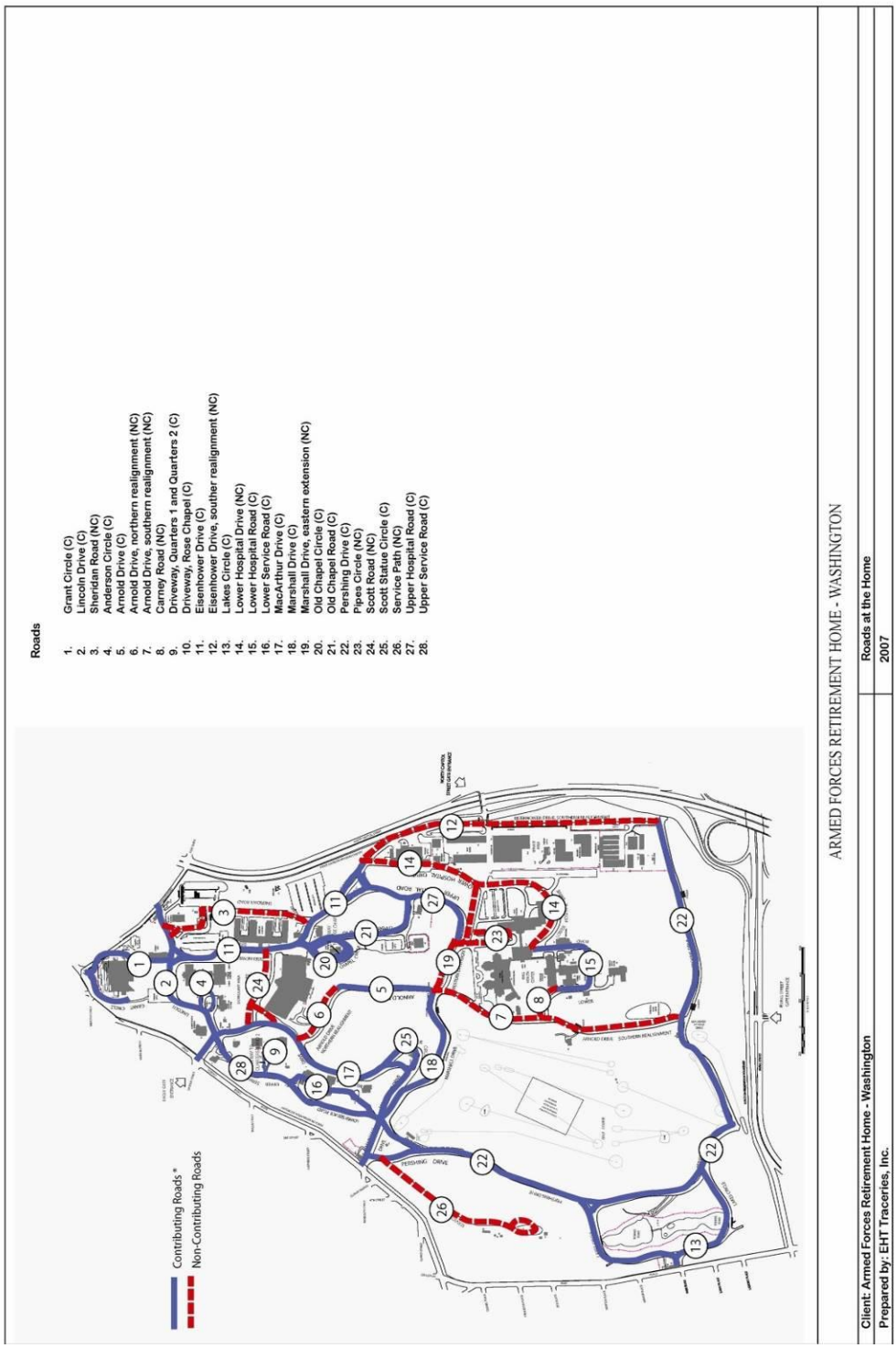


Figure 3-5: Map of Contributing and Noncontributing Roads (AFRH-W Historic District National Register of Historic Places nomination form, 2007)

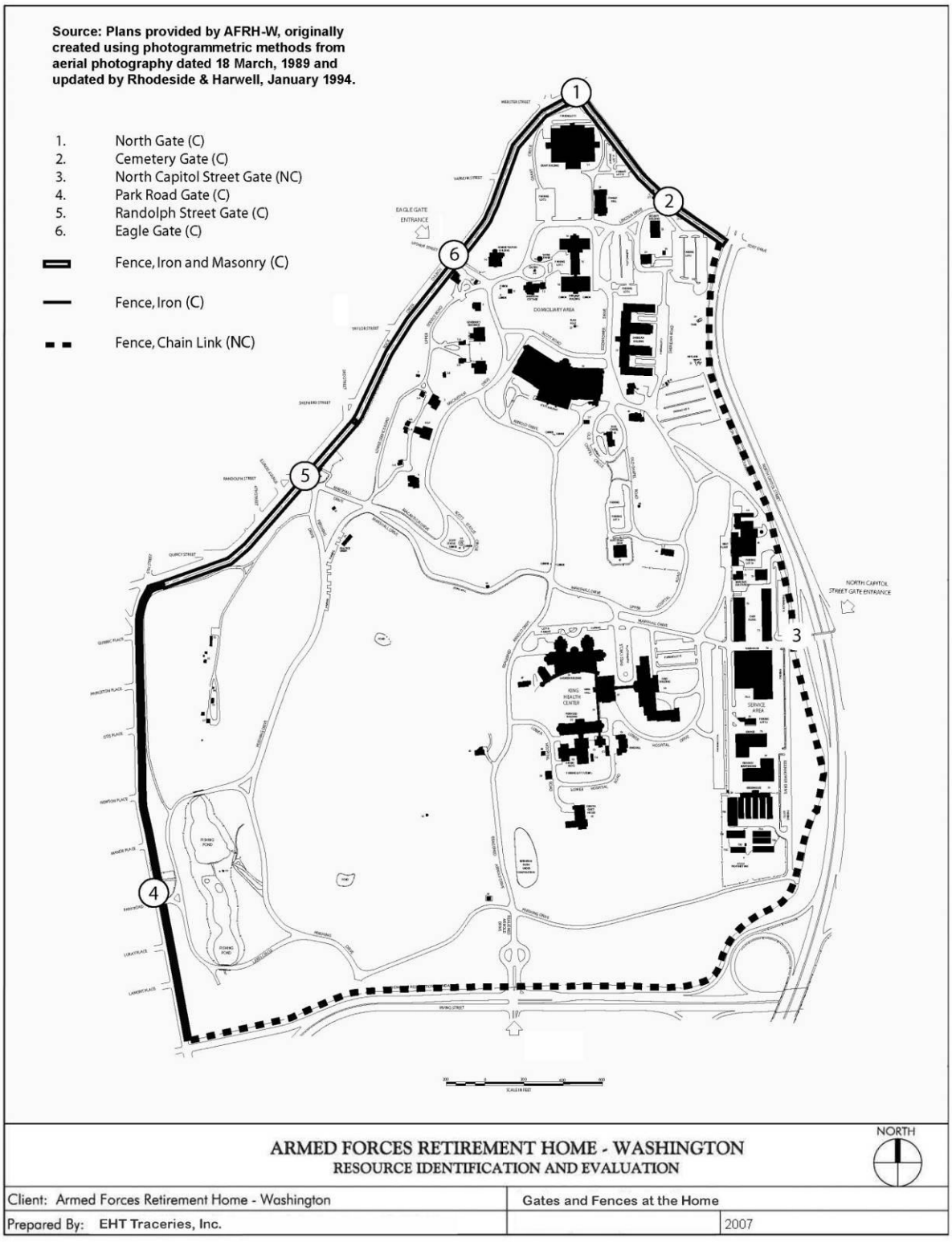


Figure 3-6: Map of Contributing and Noncontributing Fences and Gates (AFRH-W Historic District National Register of Historic Places nomination form, 2007)

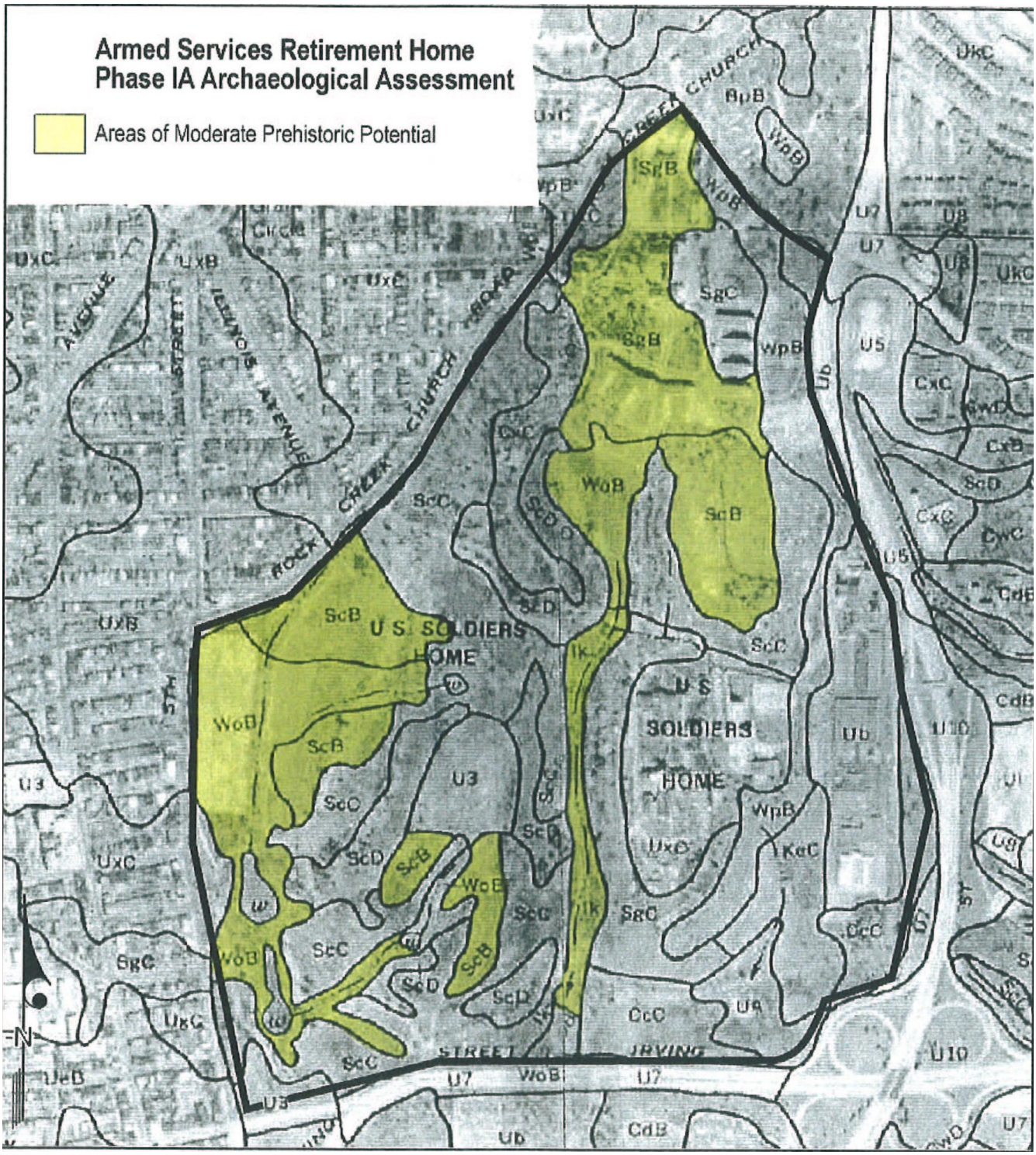


Figure 3-7: Map of Moderate Prehistoric Potential(Phase IA Archeological Assessment of AFRH, 2004)

3.1.4 Views and Vistas

The landscape of the Home, as designed in the 1860s and 1870s, featured numerous scenic views, both natural and architectural and are collectively listed as a contributing resource. Of particular importance were panoramic views of Washington and the U.S. Capitol. The intent to protect the view corridor from the Home to the U.S. Capitol was recorded in historic documents from the 1870s. Views from various streets and paths that wind through AFRH-W were also important design features. The view towards the U.S. Capitol from the vicinity of the Scott Statue has been framed by designed landscape features since 1873. The Home's historic viewsheds are collectively listed as a contributing resource to AFRH-W Historic District.

The construction of the existing Scott Building in 1954 obstructed a key historic viewshed from the Lincoln Cottage to the U.S. Capitol. Additionally, the existing Scott Building interrupted various views from the streets, paths, and structures within the historic core of AFRH-W – important features of the historic landscape. The existing seven story Scott Building can be seen from North Capitol Street looking west across the parking lot south east of the Sheridan Building.

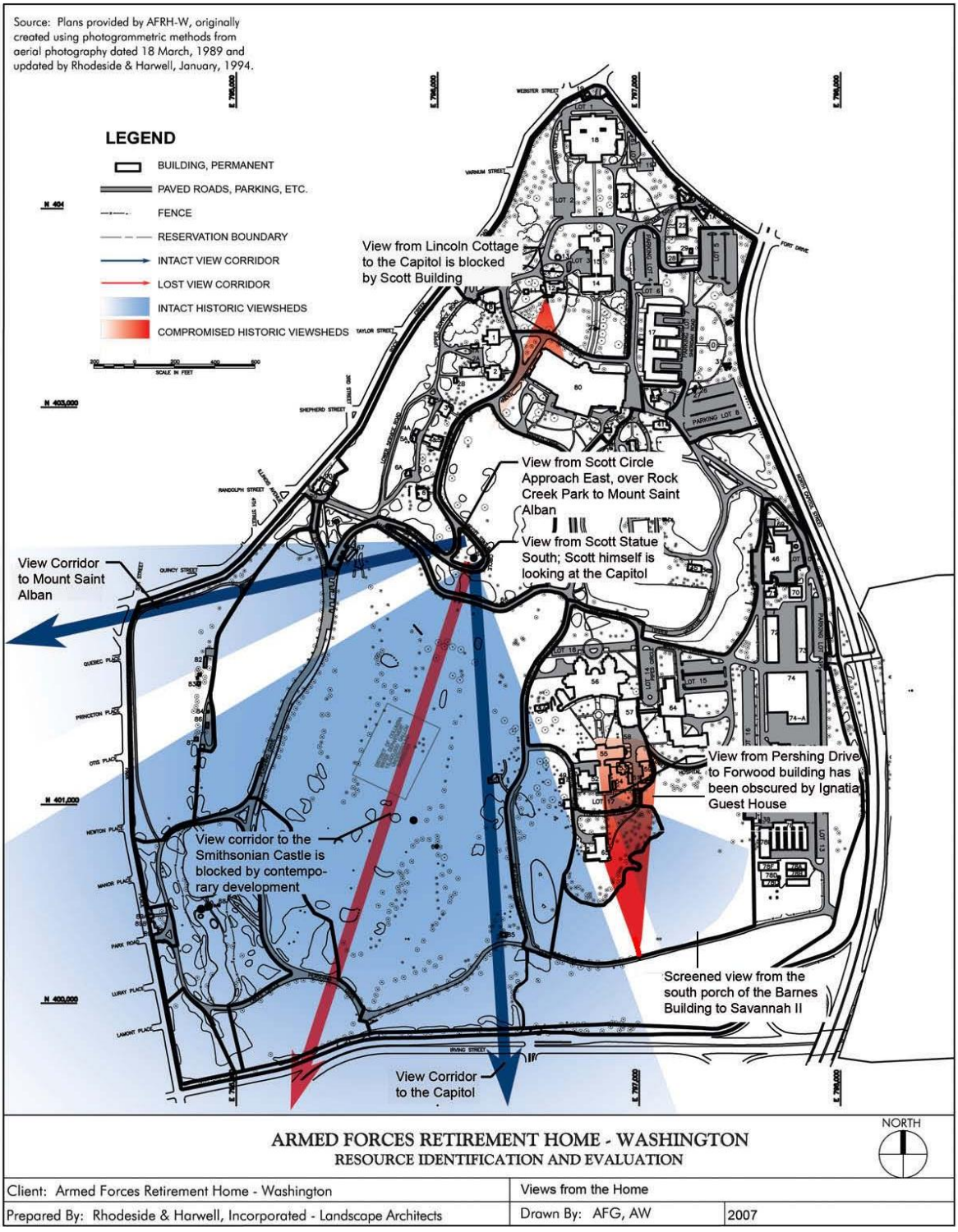


Figure 3-8: Map of Views from the Home (Armed Forces Retirement Home Historic District National Register Nomination form, 2007)

3.2 LAND USE

According to the District of Columbia Generalized Land Use Map, land use on AFRH-W is characterized as "federal," meaning that the land and facilities onsite are occupied by the federal government (DC Office of Planning, 2002). Specific uses on AFRH-W itself include administrative, residential, institutional (medical facilities), and open space. The Lincoln Cottage and administration building have been renovated to serve as a museum and visitor center by the NTHP. Other facilities on AFRH-W include a bank branch, charter school, and Smithsonian Institution greenhouses. The existing Scott Building currently houses resident and guest rooms, chaplain offices, dining services, the library and a Wellness Center.

Land uses adjacent to AFRH-W are residential, institutional (medical, and education facilities), and commercial retail (see Figure 3-5). The District of Columbia Generalized Land Use Map shows the areas northwest and southwest of AFRH-W as moderate density residential, which is defined as row houses and garden apartments and some low density housing. The area southeast of AFRH-W is categorized institutional, federal and residential according to the DC Land Use Map. Washington Hospital Center and the Veterans Administration Hospital are located in this southeast area. East of AFRH-W is also categorized as institutional land and is the location of The Catholic University of America and The Basilica of the Shrine of the Immaculate Conception. Located north of AFRH-W are the Soldiers' and Airmen's Home National Cemetery and Rock Creek Church and Cemetery, both categorized as Parks, Recreation and Open Space.

3.2.1 Planning Policies

AFRH has created its Master Plan to serve as the basis for facilitating and directing future development by the private sector. The Master Plan also addresses the need for new AFRH facilities, and will guide their development as well. *AFRH-W Master Plan* (August 2008) establishes guidelines that address historic resources, building design, access and security, street types, parking, bicycle paths, signage, and landscape. The objectives of the Master Plan are as follows:

- Optimize development of the Home while maintaining the historic character of the site and retaining significant existing open space;
- Provide development uses that are complementary to The Home;
- Ensure that AFRH's facilities are conveniently located for its residents and that there is room for AFRH new capital improvements on the north campus;
- Provide for the security of the residents of the Home;
- Encourage the rehabilitation and reuse of historic buildings;
- Avoid, minimize and mitigate adverse effects on the Historic District resources that contribute to the historic character of the Home;
- Retain and enhance the form and function of existing landscape elements, such as topography, trees and tree canopies;
- Integrate the landscape and the built form; and
- Where appropriate, respect the character of the adjacent communities and integrate the new development into the city fabric.

The guiding planning document for the National Capital Region*, The Comprehensive Plan for the National Capital*, states goals, objectives, and planning policies to direct and manage growth in the National Capital Region. This plan contains both Federal Elements and District of Columbia Elements. AFRH-W is federal property and not subject to the District elements.

The Federal Elements of the Comprehensive Plan are directed at existing and future federal lands and facilities in the Capital Region, and contain recommendations for growth and development of the National Capital Region. These elements contain policy guidelines for: federal facilities, federal employment, foreign missions and international organizations, parks and open space, federal environment, visitors to the District of Columbia, and preservation and historic features. NCPC develops and administers the Federal Elements.

Federal Elements

The Federal Elements of the Comprehensive Plan for the National Capital provides criteria for the location of federal facilities, such as AFRH-W, and provides policies on federal employment in the National Capital Region. The Federal Facilities elements of the plan that are relevant to AFRH-W include:

Federal Environment:

It is the goal of the Federal government to "conduct its activities and manage its property in a manner that promotes the National Capital Region as a leader in environmental stewardship and preserves, protects, and enhances the quality of the region's natural resources, providing a setting that benefits the local community, provides a model for the country, and is worthy of the nation's capital."

Parks, Open Space, and Natural Features:

Conserve and enhance the park and open space system of the National Capital Region, ensure that adequate resources are available for future generations, and promote an appropriate balance between open space resources and the built environment. Open space is broadly defined as "any land or water surface that is not occupied by buildings." The Parks and Open Space Element of the Comprehensive Plan includes preservation and maintenance policies including the need to "conserve portions of military reservations that add significantly to the inventory of park, open space, and natural areas and should, to the extent practicable, be used by the public for recreation." AFRH-W is listed as an example of a military reservation where open space should be conserved.

Preservation and Historic Features:

Preserve and enhance the image and identity of the Nation's Capital and region through design and development respectful of the guiding principles of the L'Enfant and McMillan Plans, the enduring value of historic buildings and places, and the symbolic character of the capital's setting.

The proposed project site is federally owned and does not contain land owned by the District of Columbia, therefore it is not defined as public land.

DCOP, DDOT, and NCPC have completed the *North Capitol Street Cloverleaf Feasibility Study* - an urban design and transportation study of North Capitol Street. The study includes the section adjoining AFRH-W western boundary.

The study developed recommendations for improving transportation choices and operations, safety and connectivity within the public realm along North Capitol Street, mitigating the barrier created by North Capitol Street between the Brookland community to the east and the planned development at AFRH-W to the west, restoring a more urban, pedestrian-scale identity to the current highway-dominated character of Irving Street, and Improving vehicular/pedestrian/bicycle/transit connectivity across the corridor.

3.2.2 Open Space

The proposed project site currently includes pedestrian walkways and open grassed areas surrounding the existing Scott Building. Beyond the proposed project site, expanses of open space are also present on the broader AFRH-W, including a golf course, walking and biking paths, and green spaces. Immediately to the south of the proposed project site is a large grassy area identified as Savannah 1 in the Master Plan. This space is also known as the ball field, reflecting its use for active recreation. Immediately to the north of the proposed project site is the quadrangle, which is the open space between the Lincoln Cottage, and existing Scott, Sherman and Sheridan Buildings. On its eastern end it is formally landscaped along paths with benches and is actively used by residents. On its western end it is more simply landscaped with grass, mature trees and a simple walkway. This space is a focal open space for the Home and is a prominent feature of the Lincoln Cottage.

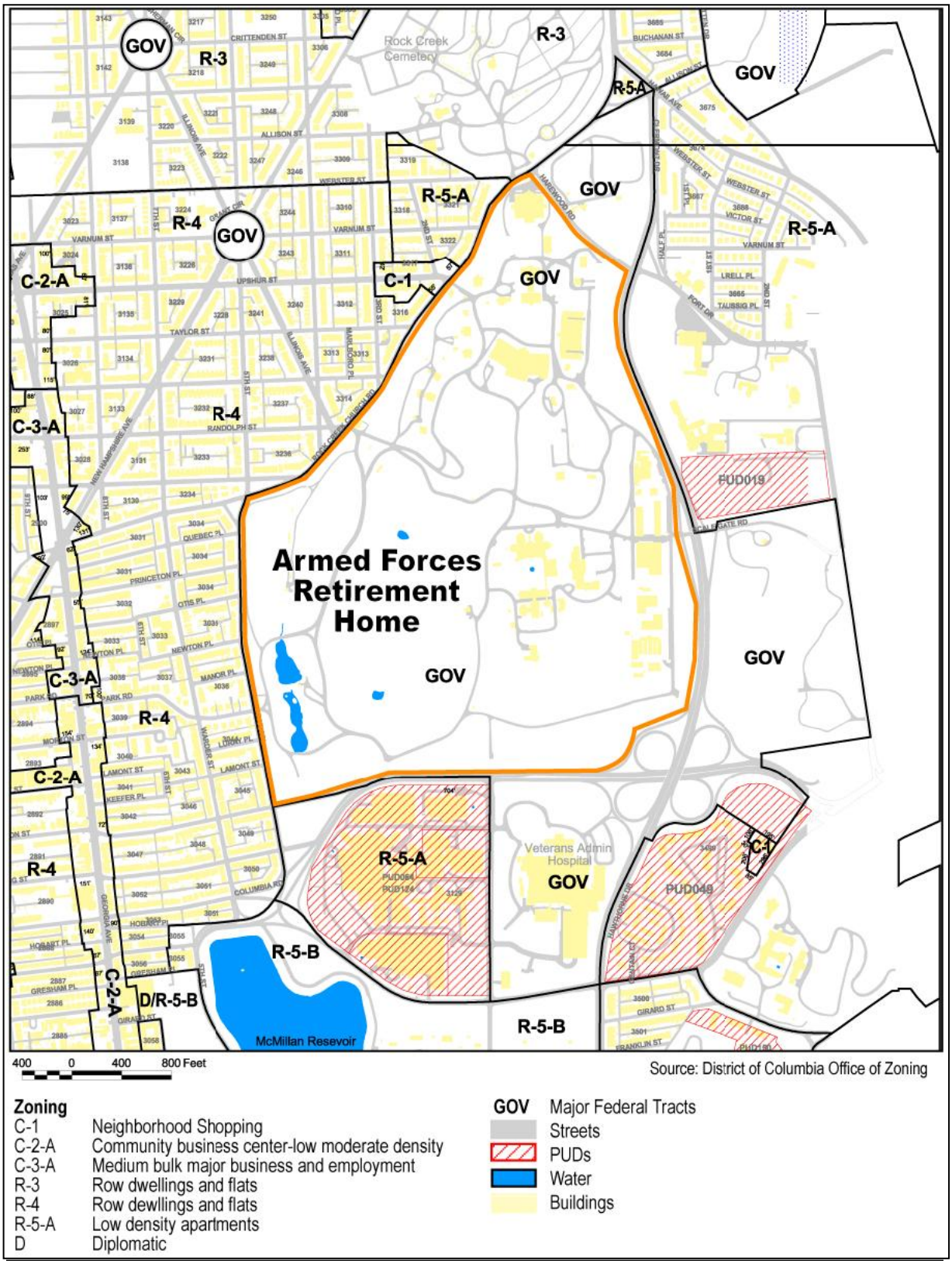


Figure 3-9: AFHR-W Planning Map (District of Columbia Office of Zoning)

3.3 NATURAL RESOURCES

Natural Resources at the existing Scott Building, within AFRH-W, and within the surrounding area have been identified and are discussed below. Identified resources include topography, soils, vegetation, and water resources.

3.3.1 Topography

The topography of AFRH-W slopes gently to the southeast. Elevations range from approximately 130 to 320 feet based on the National Geodetic Vertical Datum of 1929 (USGS, Washington West Quadrangle, 1965; photo revised 1983).

3.3.2 Vegetation

Much of AFRH-W is covered with landscaped green space, specifically the golf course and the north portion of AFRH-W. Large expanses of native and non-native vegetation are also present within AFRH-W.

Vegetation surrounding the existing Scott Building is limited to non-native landscaped areas. Several prominent mature trees on the proposed project site are specimen trees, considered important to save. They extend in a line south of the western edge of the dining hall to Arnold drive. Other prominent trees on the proposed project site are along the south edge of Scott Drive. The specimen trees surrounding the proposed project site consist primarily of pin oaks, willow oaks, and red oaks, many of which are greater than 20 feet in height. Adjacent to the proposed project site on the east is the Chapel Woods subzone. This portion of the subzone consists of an oak-hickory forest representative of the native forest in the region. This area lies outside of the proposed project site.

Figure 3-11: AFRH-W Vegetation Map (AFRH EIS, 2007)

3.3.3 Water Resources

Groundwater

Groundwater on AFRH-W is contained within aquifers composed of saprolite and weathered gneiss of the eastern Piedmont sedimentary formations and, to a minor extent, within the overlying upland sand and gravel deposits. Water in the weathered gneiss aquifers follows joints and fractures, while groundwater in the upland sand and gravel deposits travels through pore spaces in the deposits. Aquifers of the Piedmont are generally unconfined to partially confined (USGS, 2005).

Surface Water

Natural drainages on AFRH-W have historically been replaced by paved flumes of concrete, brick, or stone. These changes were made prior to 1965, and possibly as far back as the late 1800s or early 1900s. Other drainages on AFRH-W have been replaced with underground storm sewers. Two fishing ponds are located in the southwest corner of AFRH-W and two small ponds are located on the golf course. A stormwater retention pond is also located near the LaGarde Building (see Figure 3-1). Each of the ponds within AFRH-W reportedly provides stormwater retention. Ponds, streams, and/or ditches are not located on the proposed project site.

The USGS Topographic Map and the National Wetland Inventory Map show no streams on AFRH-W. The Soil Survey Photo Overlay Map shows intermittent streams on AFRH-W, but streams or ponds are not depicted on the proposed project site (USDA, SCS 1975).

Wetlands

Wetlands are defined by the United States Army Corps of Engineers (USACE) as those areas that are inundated or saturated by surface water or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3). Three parameters are used to identify wetlands: vegetation, soil, and hydrology. Wetlands are recognized for the important functions they perform. Wetlands cleanse polluted waters, retain floodwaters, and recharge groundwater aquifers. Wetlands also provide valuable fish and wildlife habitat.

Laws and regulations have been implemented to protect wetlands. Development in wetland areas is regulated by the USACE pursuant to the Clean Water Act (as implemented by 33 CFR 320-329, March 28, 2000 and 33 CFR 330, March 28, 2000).

The National Wetland Inventory map shows no wetland areas on or adjacent to the proposed project site. Three ponds are mapped on AFRH-W campus, the closest is approximately 12,000 feet south west of the existing Scott Building.

Figure 3-12: National Wetlands Inventory Map (Accessed February 23, 2010)

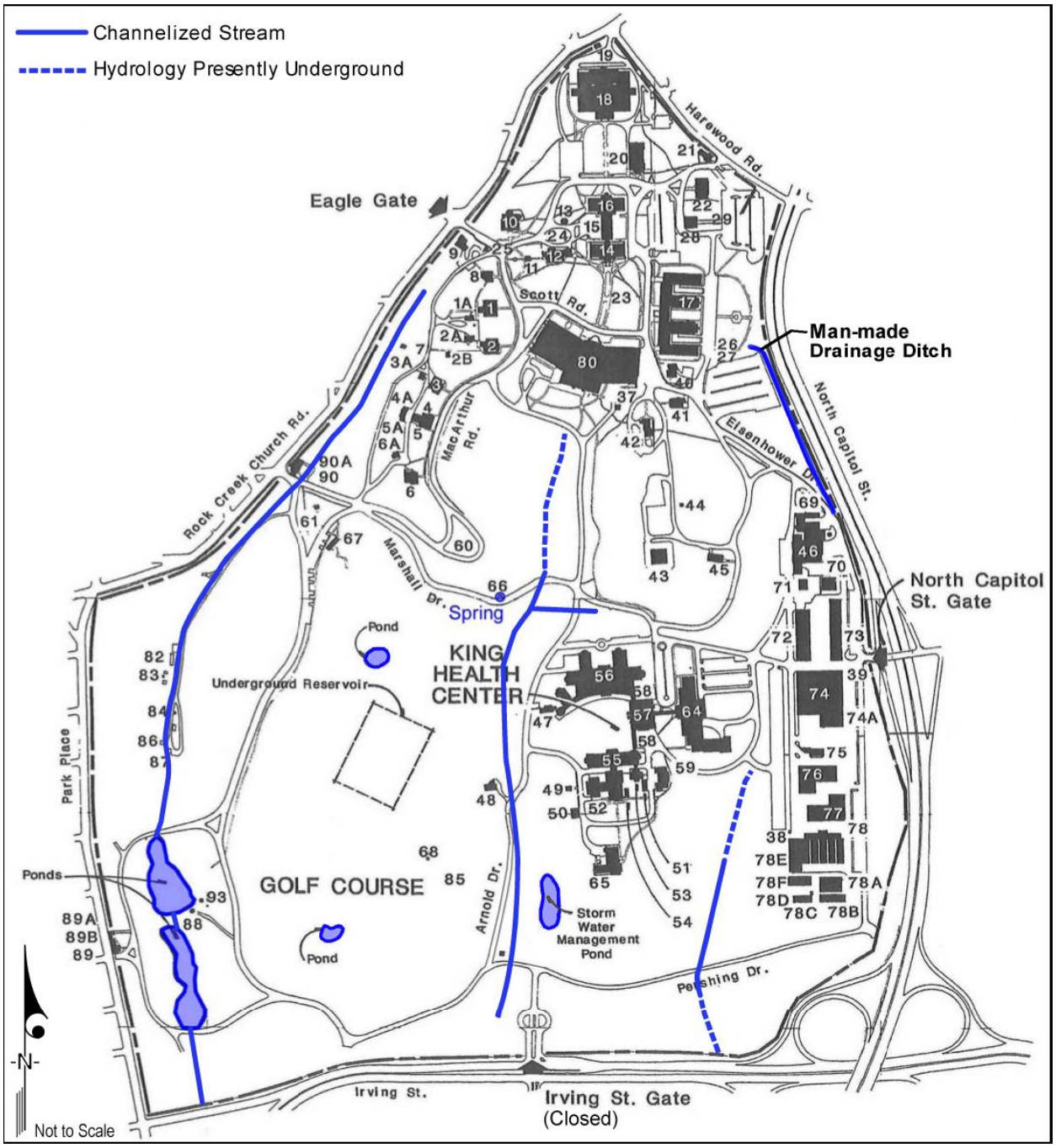


Figure 3-13: AFRH-W Water Resources (AFRH EIS, 2007)

3.4 TRANSPORTATION

Transportation as it relates to vehicles, parking, public transportation, as well as pedestrian and bicycle circulation is discussed in the following sections. Existing transportation flow and use was looked at in terms of getting to and from AFRH-W as well as to and from on-site buildings.

3.4.1 Vehicular Circulation

Vehicular circulation is controlled from the main entrance, Eagle Gate, on Rock Creek Church Road. From the guardhouse, vehicular circulation flows south onto MacArthur Drive or north onto Lincoln Drive. Both roads are two-way circulation. Driving south on MacArthur, Scott Road is a one-way left and runs along the quadrangle in front of the existing Scott Building. It terminates at Eisenhower Road, a two-way road running in front of the Sheridan Building.

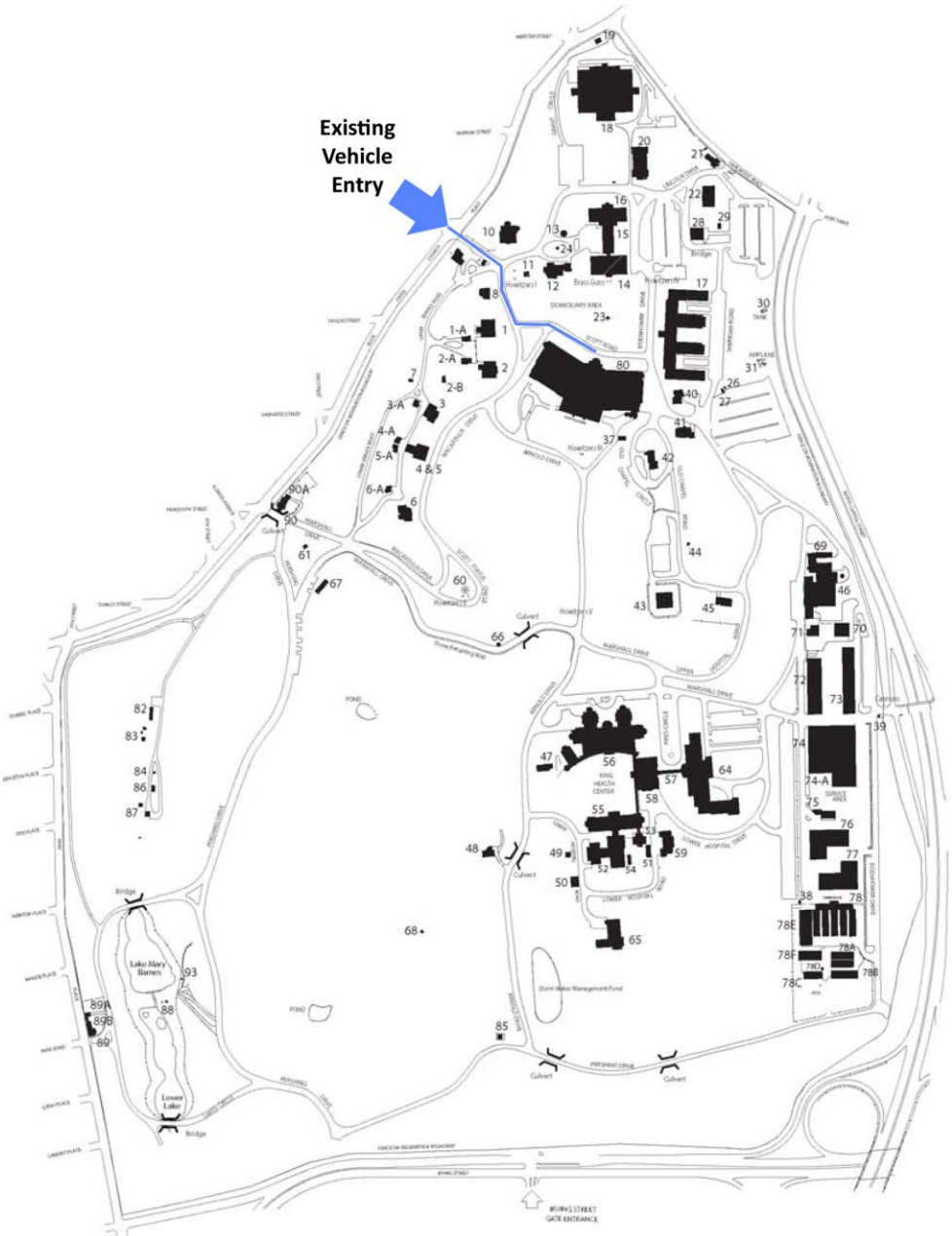


Figure 3-14: Existing Vehicle Entry Points Map (Adapted from DiMella Shaffer)

3.4.2 Parking

The existing Scott Building is currently serviced with a total of one hundred ninety-seven (197) existing parking spaces. One hundred and sixty five (165) spaces are located in the adjacent Sheridan lot between Sheridan Road and North Capitol Street. Thirty-two (32) staff and visitor parking spaces surround the existing Scott Building.

Of the thirty-two (32) spaces in the immediate vicinity of the Scott Building,

- fourteen (14) visitors' parking spaces are located along MacArthur Drive,
- eight (8) staff parking spaces are located along Eisenhower Drive,
- two (2) are located at the existing loading dock, and
- eight (8) spaces are located at the circular drive south of the Scott Building.

3.4.3 Public Transportation

The closest Washington Metropolitan Area Transit Authority (WMATA) Metro stop to the main entrance of the proposed project site is the Georgia Avenue-Petworth stop on the Green Line which is about five city blocks west of the main entry gate. Metro Bus lines 60 and H8 Connect the Metro stop with the main entrance gate on Rock Creek Church Road. AFRH-W has reported that 10% of their staff uses public transportation. AFRH-W has estimated that 15% of the residents who participate in off-site activities use public transportation.

3.4.4 Pedestrian/Bicycle Circulation

Due to its secure perimeter fence, cross-site pedestrian and bicycle circulation of non-AFRH-W residents does not occur at AFRH-W. Pedestrian, wheelchair and Battery Powered Vehicle (BPV) circulation of staff and employees occurs primarily between the Sheridan and the Scott Building, along Eisenhower Road and the south side of Scott Road at the main entrance to the existing Scott Building. Other active pedestrian routes include the quadrangle between the Scott and Sherman Buildings. Additional pedestrian routes lead from the visitor parking lot to the Lincoln cottage and visitor center and from the main gate along MacArthur / Scott Road to the Scott Building.

3.5 UTILITIES AND INFRASTRUCTURE

This section deals with the existing infrastructure, energy and environmental performance, stormwater and hazardous waste/contamination. Utilities include steam, electric, natural gas, water and sewer lines, an underground reservoir and Information and technology (IT) communication lines.

3.5.1 Utilities

The proposed project site is currently supplied with primary steam, electrical, natural gas, and water and sewer lines. The existing Scott Building also houses the IT infrastructure for AFRH-W community and chilled water services for the existing Scott Building and Sheridan Building.

The Potomac Electric Power Company, Inc. (PEPCO) is the only distributor of electricity available to AFRH-W. Electrical service is provided to the existing Scott Building via three high-voltage feeders from AFRH-W electrical distribution system. The distribution lines would have to be

relocated for demolition and reconstruction purposes and a design decision would be made to determine the number of feeders necessary for the new project and the location of the main electrical service. The District of Columbia Water and Sewer Authority provides retail water service to residential and commercial customers of the District of Columbia. Water is supplied to the District of Columbia from the Potomac River through the Dalecarlia and McMillan Reservoirs where filtration and treatment occur. AFRH-W also houses a 15 million-gallon underground reservoir, under the golf course, and allows the District to maintain the Reservoir. A 48-inch water transmission line runs south from the buried concrete water storage reservoir. This line does not run near the proposed project site. Water and sewer lines to the existing Scott Building enter from the south (Figure 3-12).

Washington Gas supplies natural gas to the District of Columbia through a network of underground conduits fed through larger high-pressure transmission lines, generally located within street right-of-ways. Natural gas lines service the existing Scott Building from the south and north. Furthermore, natural gas fuels the steam boilers located on AFRH-W. The existing Scott Building has its own dedicated steam line and therefore is not relied upon to provide steam to other buildings on AFRH-W.

IT Communication systems are presently housed in the lower levels of the existing Scott Building and service the Scott, Sheridan, LaGarde and Sherman Buildings. The telephone lines are serviced by Verizon.

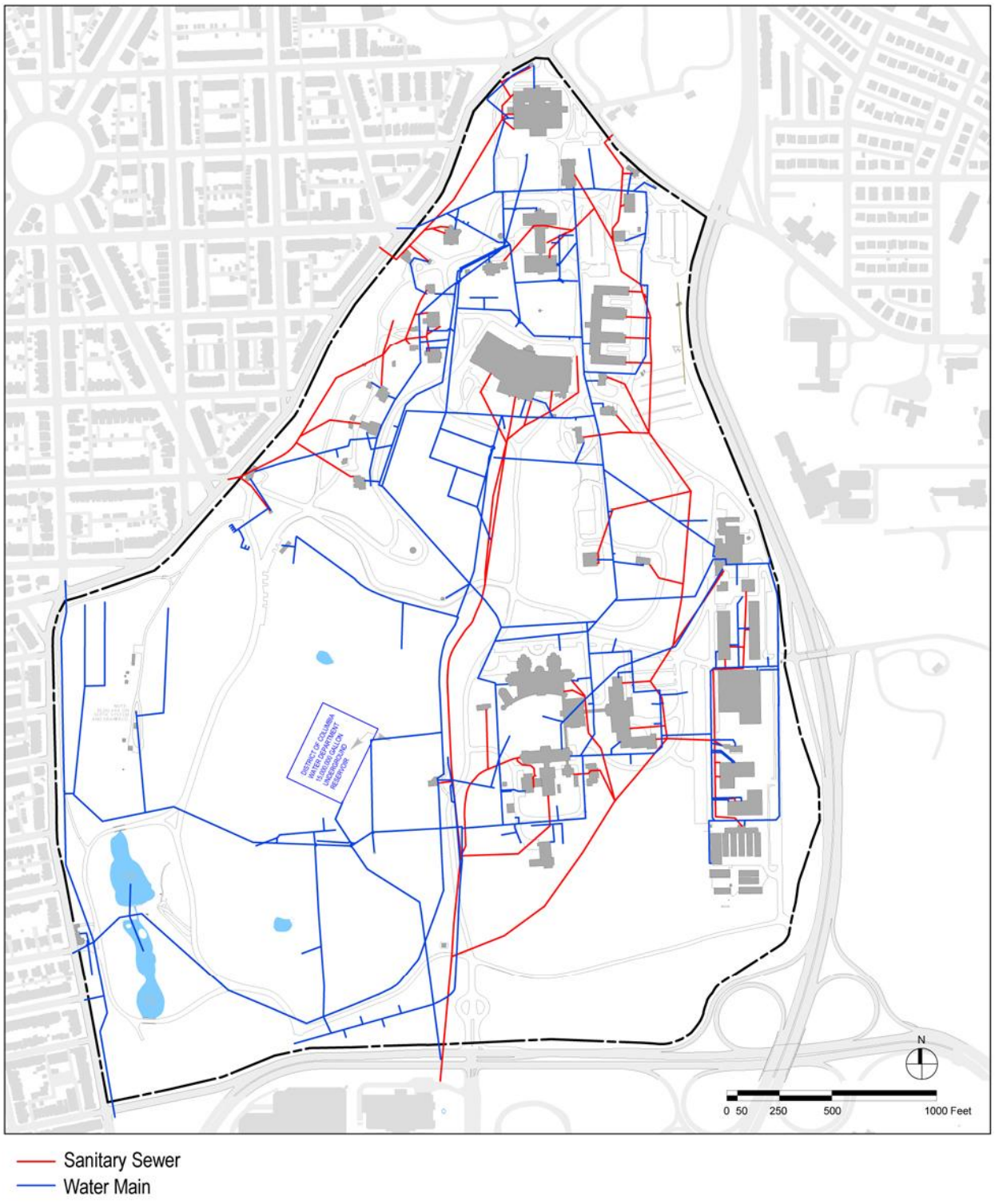


Figure 3-15: AFRH-W Existing Water and Sewer Utility Lines Map
(AFRH EIS, 2007)

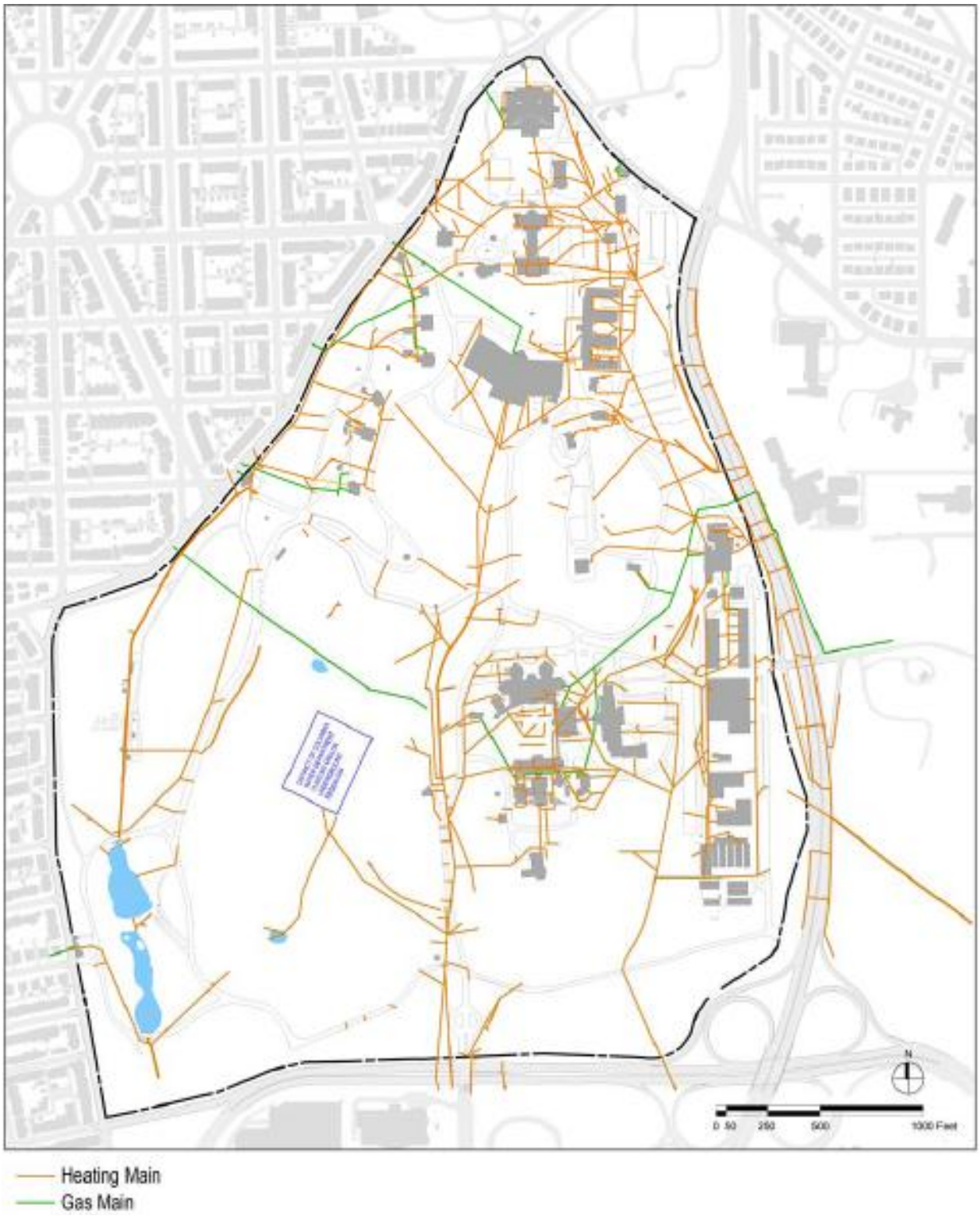


Figure 3-16: Gas and Heating Lines AFRH-W (AFRH EIS, 2007)

3.5.2 Energy and Environmental Performance

The existing Scott Building was built in 1954 and is larger than AFRH-W requires for their current and projected population. The design of the structure and materials used in its construction are outdated, resulting in increased use of energy and water resources. The roofing, window, and walls systems are less efficient at reducing heat transfer than those utilized in more modern structures, in particular the un-insulated exterior walls. Light fixtures and water fixtures in the building are not designed to use resources efficiently. As a result, the operation and maintenance of the structure is a financial burden for AFRH-W. The reduction of the financial burden associated with the maintenance and operation of the existing Scott Building is one of the primary goals of the proposed project.

3.5.3 Stormwater Management

Stormwater on AFRH-W is collected in various paved flumes and ponds on-site which discharge into combined sewer and stormwater lines on AFRH-W. These lines connect to District sewer lines at various points along AFRH-W's perimeter.

Executive Order (E.O.) 13514 requires the Environmental Protection Agency (EPA) to issue guidance on the implementation of Section 438 of the Energy Independence and Security Act of 2007 (EISA). The provision reads as follows: *"Storm water runoff requirements for federal development projects. The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."*

The District of Columbia Municipal Regulation (DCMR), Title 21, Water and Sanitation, Sections 526-535 regulate stormwater runoff from new construction. These regulations set controls on the quantity and quality of runoff for specified storm events. The regulations are enforced by the District of Columbia Department of Environment, Watershed protection Division. The regulations refer to the Stormwater Management Guidebook dated April 2003. This guidebook includes practices of controlling stormwater runoff meeting release rates for newly developed sites, and it includes methods for improving the quality of stormwater runoff. The following describes some of these methods:

Stormwater management, quantity requirements:

As per the *Stormwater Management Guidebook*, stormwater quantity controls are required to ensure that stormwater discharging off site is limited to pre-development flows. This alleviates additional load on the existing combined sewer system in an effort to reduce combined sewer overflow pollution. During short periods of intense rainfalls and when the combined sewer systems reach their capacity limits for treatment at the Blue Plains Wastewater Treatment Plant, wastewater is diverted to a discharge system without treatment. This situation is referred to as "combined sewer overflow pollution". One of the benefits of providing stormwater management quantity protection is that it restricts the stormwater discharge from the site to its pre-development rate, as described earlier, and thus tends to minimize the "combined sewer overflow pollution."

Stormwater management, quality requirements:

For most storm events, studies show that the first flush, or first half-inch of rainfall, contains as much as 85 to 90 percent of surface water pollutants. For this reason, it is required that the first flush be detained and treated before leaving the site.

In addition, the U.S. Environmental Protection Agency (EPA) published effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites on December 1, 2009. Implementation of the more stringent erosion and sediment controls by the new rule is required if the stormwater permit is issued after February 1, 2010. However, the effluent turbidity monitoring process does not go into action until August 2011, and then only for sites with 20+ acres of disturbance. The final rule goes into effect in February 2014, which requires sites with 10+ acres of disturbance to monitor the turbidity of their runoff. The proposed area of disturbance is six acres; therefore it is below the threshold both now and in the future.

3.5.4 Hazardous Materials

F&R's *Limited Hazardous Survey Report* dated October 23, 2009 (included in Appendix) identifies hazardous materials within the proposed project site. The survey identified asbestos containing building materials consisting primarily of thermal system insulation, exterior caulk and floor tile. In addition, lead based paint was identified on the ceramic bath tubs, caution paint on the concrete floors and paint on stairwell treads. The remaining paint samples indicated the presence of lead below the District of Columbia action level.

3.6 AIR QUALITY

The EPA, under the requirements of the 1970 Clean Air Act (CAA) as amended in 1977 and 1990, has established National Ambient Air Quality Standards (NAAQS) for six contaminants, referred to as criteria pollutants (40 CFR 50). These criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), lead (Pb), and sulfur dioxide (SO_2).

Areas that are below the NAAQS for a criteria pollutant are designated as being in "attainment." Areas where a criteria pollutant level exceeds the NAAQS are designated as being

in "non-attainment." O_3 non-attainment areas are categorized based on the severity of their pollution problem: marginal, moderate, serious, severe, or extreme, and CO non-attainment areas are categorized as moderate or serious. AFRH-W is located in the District of Columbia, an area with the following current designations:

- Moderate non-attainment for O_3 for the 1-hour standard
- Moderate non-attainment for O_3 for the 8-hour standard
- Non-attainment for PM_{10}
- Attainment for all other criteria pollutants

3.7 NOISE LEVELS

The extent to which individuals are affected by noise is controlled by several factors, including:

- The duration and frequency of sound,
- The distance between the sound source and the receptor,
- The intervening natural or man-made barriers or structures, and
- The ambient environment

The unit of measure for Leq is the "A-weighted" decibel (dBA). A Leq is a symbol that represents equivalent continuous noise level. The dBA scale de-emphasizes the very low and the very high frequencies and emphasizes the middle frequencies, thereby closely approximating the frequency response of the human ear. Common noise sources and their sound levels are described in Table 3-1.

Table 3-1: Common Noise Sources and Their Sound Levels

Source	Sound Level (dBA)
Near large jet at takeoff	140
Air-raid siren	130
Threshold of pain	120
Thunder or sonic boom	110
Garbage or trailer truck at roadside	100
Power lawn mower at 5 feet	90
Alarm clock or vacuum cleaner	80
Freeway traffic at 50 feet	70
Conversational speech	60
Average residence	50
Bedroom	40
Soft whisper at 15 feet	30

Source	Sound Level (dBA)
Rustle of leaves	20
Breathing	10
Threshold of hearing	0

Source: Adapted from U.S. National Bureau of Standards Handbook 119, 1976.

Human ability to perceive change in noise levels varies widely from person to person, as do responses to perceived changes. Generally, a three dBA change in noise level would be barely perceptible to most listeners, whereas a ten dBA change is normally perceived as doubling (or halving) of noise levels and is considered a substantial change. These thresholds (summarized in Table 3-2) permit direct estimation of an individual's probable perception of changes in noise levels.

Table 3-2: Perception of Changes in Noise Levels

Change in dBA	Perception
0	Reference
3	Barely perceptible change
5	Readily perceptible change
10	Twice or half as loud
20	Four times or 1/4 as loud
40	Eight times or 1/8 as loud

Source: Federal Highway Administration, June 1995 (Highway Traffic Noise Analysis and Abatement Policy and Guidance)

Because the dBA noise metric describes steady noise levels, and very few noises are in fact constant, a method to describe noise varying over a period of time is needed. One such method is to describe fluctuating noise over a period as if it were steady and unchanging. For this purpose, a descriptor called the equivalent sound level (Leq) is computed.

Federal Highway Administration (FHWA) has established Noise Abatement Criteria (NAC) that define limits beyond which noise abatement measures must be considered. Since the proposed action is not a FHWA project, these standards are not directly applicable. However, they provide a convenient benchmark to assess the level at which noise becomes a marked source of annoyance. Thresholds vary depending on the type of land use in the area considered and are summarized in Table 3-3. Land use Category B, which represents moderately sensitive land uses, including residents, churches, and hospitals, best characterizes land uses near AFRH-W. The NAC for Category B land uses is a Leq(1) of 67 dBA.

Table 3-3: Noise Abatement Thresholds

Activity Category	Description of Activity Category	Leq(1)
A	Land for which serenity and quiet area of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose	57 (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (exterior)
C	Developed land, properties, or activities not included in Categories A or B above	72 (exterior)
D	Undeveloped lands.	N/A
E	Residences, motels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (interior)
Note: The Leq(1) designations represent hourly A-weighted sound levels expressed in dBA.		

Source: FHWA, June 1995

Existing noise levels were measured as part of AFRH-W EIS performed in November, 2007. Based on the results of that study, the proposed project site is currently within the acceptable noise range for a Category B location. In addition, noise level results indicate that predicted general growth in the community is anticipated to increase the noise levels at the existing Scott Building by two to three decibels, which is still within the acceptable range for a Category B location.

4.0

ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

The following chapter assesses the impacts of the proposed action on each of the action alternatives and the No Action Alternative. In the analysis, impacts are characterized by several factors including intensity, type and duration. Definitions of these terms and related assumptions are provided below.

Intensity:

The intensity of an impact describes the magnitude of change that the impact generates. For the majority of resource areas, the intensity thresholds are as follows:

- *No Impact*: No impact on exisiting conditions
- *Negligible*: There would be no impact, or the impact does not result in a noticeable change in the resource;
- *Minor:* The impact would be slight, but detectable, resulting in a small but measurable change in the resource;
- *Moderate:* The impact would be readily apparent and/or easily detectable;
- *Major:* The impact would be widespread and would substantially alter the resource. A major adverse impact would be considered significant under NEPA.

For certain resources, such as views and vistas, more specific thresholds are necessary. If applicable, these thresholds are outlined at the beginning of the resource's section.

Type:

The impact type refers to whether it is adverse (negative) or beneficial (positive). Adverse impacts would potentially harm resources, while beneficial impacts would improve resource conditions. Within the analysis, impacts are assumed to be adverse unless identified as beneficial.

Duration:

The duration of an impact identifies whether or not it occurs over a restricted period of time (short-term) or persists over a longer period (long-term). For the purpose of this analysis, it is assumed that short-term impacts would occur during the construction of the improvements, while long-term impacts would persist once construction is complete.

In addition to the factors detailed above, impacts may be characterized as direct, indirect, or cumulative. A direct impact is caused by the action and occurs at the same time and place. An indirect impact is caused by the action, but occurs later in time, or farther removed in distance. A cumulative impact occurs when the proposed action is considered together with other past, ongoing, or planned actions. Unless otherwise noted the impacts from this project would be direct. Cumulative impacts are discussed at the end of this section.

Table 4-1: Comparison of Impacts for the New Commons and Healthcare Building as compared to existing conditions			
Resource	**Alternative A:**	**Alternative B**	**Alternative C: No Action**
Archeological Resources	No Impact	No Impact	No Impact
Historic Resources	Moderate Beneficial, Long-Term	Minor Beneficial, Long-Term	No Impact The existing Scott Building would remain out of context with the historic character of AFRH-W.
Views And Vistas	Moderate, Beneficial, Long-Term	Minor, Beneficial, Long-Term	No Impact The viewshed would remain obstructed.
Land Use	Minor, Beneficial, Long-term	Minor, Beneficial, Long-term,	No Impact
Planning Policies	No Impact	No Impact	No Impact
Open Space	Minor to moderate, Beneficial, Long-term	Minor, Beneficial Long-term,	No Impact The Existing Scott Building would continue to occupy its large foot print.
Topography-Construction	Minor, Adverse, Short-Term	Minor, Adverse, Short-Term	No Impact
Topography - Operation	No Impact	No Impact	No Impact
Vegetation	Minor, Beneficial, Long-Term,	Minor, Beneficial, Long-Term,	No Impact
Water Resources-Construction	Minor, Adverse, Short-Term	Minor, Adverse, Short-Term	No Impact

Table 4-1: Comparison of Impacts for the New Commons and Healthcare Building as compared to existing conditions			
Resource	**Alternative A:**	**Alternative B**	**Alternative C: No Action**
Water Resources-Operation	Minor, Beneficial, Long-Term	Minor, Beneficial, Long-Term	No Impact
Vehicular Circulation - Construction	Moderate, Adverse, Short-Term	Moderate, Adverse, Short-Term	No Impact
Vehicular Circulation - Operation	No Impact	No Impact	No Impact
Parking - Construction	Minor, Adverse, Short-Term	Minor, Adverse, Short-Term	No Impact
Parking-Operation	Negligible, Adverse, Long-Term	Negligible, Adverse, Long-Term	No Impact
Public Transportation	No impact	No impact	No impact
Pedestrian/Bicycle Circulation - Construction	Minor, Adverse, Short-Term	Minor, Adverse, Short-Term	No Impact
Pedestrian/Bicycle Circulation - Operation	No Impact	No Impact	No Impact
Utilities	Negligible, Adverse, Long-Term	Negligible, Adverse, Long-Term	No Impact
Energy And Environmental Performance	Moderate, Beneficial, Long-Term	Moderate, Beneficial, Long-Term	No Impact The Existing Scott Building would continue inefficient operations.
Stormwater Management-Construction	Minor, Adverse, Short-term	Minor, Adverse, Short-term	No Impact

Table 4-1: Comparison of Impacts for the New Commons and Healthcare Building as compared to existing conditions			
Resource	**Alternative A:**	**Alternative B**	**Alternative C: No Action**
Stormwater Management-Operation	Minor to Moderate, Beneficial, Long-Term	Minor, Beneficial, Long-Term	No Impact
Hazardous Waste/ Contamination	Minor, Beneficial, Long-Term	Minor, Beneficial, Long-Term	No Impact Hazardous materials would remain in place.
Air Quality - Construction	Minor, Adverse, Short-term	Minor, Adverse, Short-term	No Impact
Air Quality - Demolition	Minor, Adverse, Short-term	Minor, Adverse, Short-term	No Impact
Air Quality - Operation	No Impact	No Impact	No Impact
Noise Levels - Construction	Moderate, Adverse, Short-Term	Moderate, Adverse, Short-Term	No Impact
Noise Levels - Demolition	Moderate, Adverse, Short-Term	Moderate, Adverse, Short-Term	No Impact
Noise Levels - Operation	No Impact	No Impact	No Impact

Table 4-2: Comparison of Impacts of Cooling Tower and IT Relocation

Alternative C: No Action would result in no impact regarding the relocation of the cooling towers and IT services because these services would remain in the Scott Building.

The location of the proposed new cooling tower and IT relocation are common to both action alternatives (A & B)

Resources not listed in this table would not be impacted by the relocation of the cooling towers or the IT services.

Resource	Cooling Tower and Chiller	IT Relocation
Historic Resources	Minor, Adverse, Long -Term	Minor, Adverse, Long-Term

Table 4-2: Comparison of Impacts of Cooling Tower and IT Relocation

Alternative C: No Action would result in no impact regarding the relocation of the cooling towers and IT services because these services would remain in the Scott Building.

The location of the proposed new cooling tower and IT relocation are common to both action alternatives (A & B)

Resources not listed in this table would not be impacted by the relocation of the cooling towers or the IT services.

Resource	Cooling Tower and Chiller	IT Relocation
Views and Vistas	Minor, Adverse, Long-term	No impact
Vegetation-Construction	Negligible, Beneficial, Short-term	No impact
Vegetation-Operation	Negligible, Beneficial, Long-term	No impact
Parking-Construction	Minor to moderate, Adverse, Short-term	No impact
Parking-Operation	Minor, Adverse, Long-term	No impact
Utilities	Negligible, Beneficial, Long-term	Negligible, Beneficial, Long-term
Energy and Environmental Performance	Moderate, Beneficial, Long-term	Moderate, Beneficial, Long-term
Stormwater Management	Minor to Moderate, Beneficial Long-term,	Minor to Moderate, Beneficial Long-term,
Hazardous Waste/ Contamination	Minor, Beneficial, Long-term	Minor, long-term, Beneficial
Air Quality-Construction	Minor, Adverse, Short-term	Minor, Adverse, Short-term
Air Quality-Operation	Minor, Adverse,	Minor, Adverse,

Table 4-2: Comparison of Impacts of Cooling Tower and IT Relocation

Alternative C: No Action would result in no impact regarding the relocation of the cooling towers and IT services because these services would remain in the Scott Building.

The location of the proposed new cooling tower and IT relocation are common to both action alternatives (A & B)

Resources not listed in this table would not be impacted by the relocation of the cooling towers or the IT services.

Resource	Cooling Tower and Chiller	IT Relocation
	Long-term	Long-term
Noise Levels-Construction	Minor, Adverse, Short-term	Minor, Adverse, Short-term
Noise Levels-Operation	Minor, Adverse, Long-term	No Impact

4.1 CULTURAL RESOURCES

This section analyzes the potential effects of the proposed alternatives on the historic resources within the study area. The study area is defined as the entire AFRH-W.

4.1.1 Archaeological Resources

Alternative A:

The five archeological sensitivity zones identified within the AFRH-W Historic District (site of a post-1873 cross-gable, wood-frame building; site of a pre-1870 building cluster; site of the Carlise Cottage; site of the 1876 Barnes Hospital; and the Lincoln Cottage Archeological Site) are not located within the boundaries of the proposed project site. Although the site is located on an area identified as having potential for prehistoric occupation, all excavation for the new construction would take place in the same general area as the existing Scott Building, and the depth of excavation required for the proposed project would not exceed the depth of excavation completed in the 1950s for the Scott Building. Therefore, Alternative A would have no impact on archeological resources.

The relocation of IT services to the Sherman Building and the preferred cooling tower location are not likely to have an impact on archeological resources.

Alternative B:

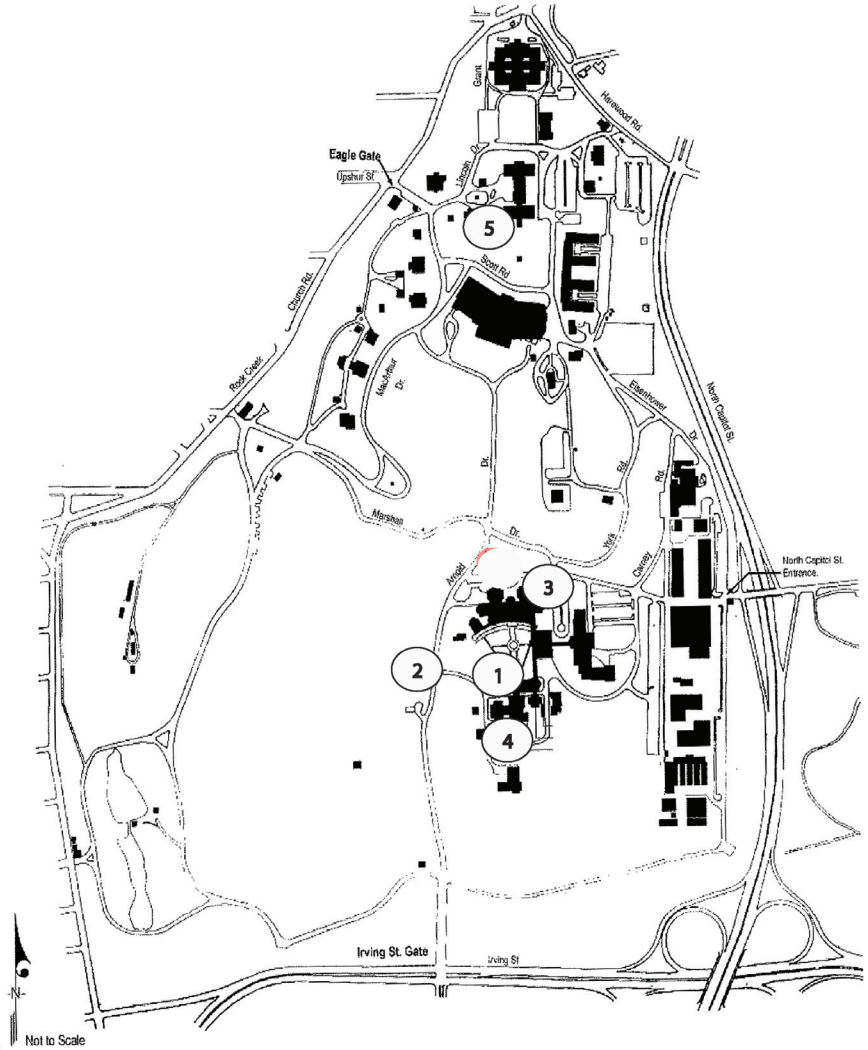
The five archeological sensitivity zones identified within the AFRH-W Historic District (site of a post-1873 cross-gable, wood-frame building; site of a pre-1870 building cluster; site of the Carlise Cottage; site of the 1876 Barnes Hospital; and the Lincoln Cottage Archeological Site) are not located within the boundaries of the proposed project site. Although the site is located on

an area identified as having potential for prehistoric occupation, all excavation for the new construction would take place in the same general area as the existing Scott Building, and the depth of excavation required for the proposed project would not exceed the depth of excavation completed in the 1950s for the Scott Building. Therefore, Alternative B would have no impact on archeological resources.

The relocation of IT services to the Sherman Building and the preferred cooling tower location are not likely to have an impact on archeological resources.

Alternative C:

Under the No Action Alternative, site development would not be undertaken; thus, there would be no impacts to archaeological resources.



Archeological Sensitivity Zones

1. Location of Carlise Cottage (C)
2. Location of Pre-1870 Building Cluster (C)
3. Location of Post-1873 Cross Gable Frame Building (C)
4. Location of Barnes Hopsital
5. Lincoln Cottage Archeological Site

ARMED FORCES RETIREMENT HOME - WASHINGTON

Client: Armed Forces Retirement Home - Washington	**Archeological Sensitivity Zones**
Prepared by: EHT Traceries, Inc.	**2007**

Figure 4-1: Archeological Sensitivity Zones (AFRH-W Historic District National Register of Historic Places nomination form, 2007)

4.1.2 Historic Resources

Alternative A:
Under Alternative A, the existing Scott Building would be demolished and a new facility would be constructed in the same general location.

The existing Scott Building is not listed individually in the D.C. Inventory of Historic Sites or the National Register of Historic Places. It is not located within the boundaries of the U.S. Soldiers' and Airmen's Home National Historic Landmark or the President Lincoln and Soldiers' Home National Monument. Although the Scott Building is located within AFRH-W Historic District, it was constructed in 1954 – outside the period of significance – and is categorized as a noncontributing building. The demolition component of Alternative A would neither alter the characteristics of the Home that qualify it for inclusion in the National Register nor diminish its integrity.

As described below, although the build component of Alternative A would construct a new facility on the Scott Building site, its scale and massing would be greatly reduced, its design character would be more in keeping with the historic character of the Home, and the viewshed would be improved when compared to existing conditions. The net result of the demolition and build components of Alternative A would have a moderate, long-term, beneficial impact on the historic resources within the study area when compared to existing conditions.

Under Alternative A, the build component would construct a new facility with an east-west orientation along Scott Road and a main entry directly south of the entrance to the historic Sherman Building. The building mass would be three stories as seen from the north, with a lower level below grade. The building would be positioned on the eastern edge of the building site. The south elevation of the building would be formed from a series of stepped terraces. Various elements of the build component of Alternative A factor into its potential impact on the historic features within the study area as they currently exist. These are identified below.

First, the new facility would be located adjacent to the historic core of the Home – the location of the earliest and most significant buildings within the AFRH-W Historic District. The historic core is also the location of the U.S. Soldiers' and Airmen's Home National Historic Landmark and the President Lincoln and Soldiers' Home National Monument. Under Alternative A, as seen from the north, the new facility would read as a symmetrical, moderately-scaled, three-story structure, and its location on the building site would create a new axial relationship with the historic Sherman Building to the north. Arranging the physical volume of the new facility in this way would be generally consistent and compatible with the historic building forms, proportions, and dimensions of the contributing buildings within the historic core. This would have a minor, long-term, beneficial impact when compared to existing conditions.

Additionally, the location of the new facility would partially restore the historic spatial organization of the historic core. Historically, the spatial organization to the south of the Sherman Building was defined by open ground that overlooked the southern portions of AFRH-W and provided unobstructed views south toward Washington and the U.S. Capitol. This spatial organization was largely altered with the construction of the Scott Building in 1954, which

resulted in the development of a formalized landscaped lawn, or quadrangle, south of the Sherman Building, the establishment of Scott Road and its street trees, and the creation of a pedestrian connection between the Sherman Building and the Scott Building – all noncontributing features to AFRH-W Historic District. The location and scale of the new facility (compared to existing conditions) would partially restore the open space that historically defined the spatial organization of the historic core. This would have a minor, long-term, beneficial impact on the historic resources within the study area when compared to existing conditions.

Second, the building site would be located east of Officer's Quarters 1 and Officer's Quarters 2 – contributing buildings within the historic core. These small-scale residential structures are surrounded by foundation plantings that serve as a transition between the domestic scale of the residences and the forest stands to the west. Under existing conditions, the scale and location of the Scott Building negatively affects the residential character of the officer's quarters. As already mentioned, under Alternative A, the new facility would be located within the eastern portion of the building site with an open grassy area to the west. This would orient the new facility in a careful manner and would lessen the potential impact of the facility on the residential character of the officer's quarters. This would have a minor, long-term, beneficial impact when compared to existing conditions.

Third, the new facility would be located adjacent to several roads identified as contributing resources to AFRH-W Historic District. These include Eisenhower Drive to the east, Old Chapel Circle to the southeast, and MacArthur Drive to the west. Scott Road, north of the building site, and Arnold Drive (northern realignment) to the south are identified as noncontributing resources. Under Alternative A, Eisenhower Drive would be slightly realigned to provide accessible parking east of the building site. This would have a minor, long-term, adverse impact on the historic resources when compared to existing conditions.

Fourth, the building site would be located northwest of the Rose Chapel and its associated landscape resources – Chapel Woods, Chapel Circle, and the Chapel Foundation Plantings. These features are contributing resources within the historic district. Under Alternative A the main mass of the building would be located at the northern edge of the site, while the south elevation would feature stepped terraces. Alternative A would reduce the massing of the south elevation of the new facility, which would lessen the impact on the visual character of Rose Chapel and its surrounding landscape. This would have a moderate, long-term, beneficial impact when compared to existing conditions.

Fifth, the building site would be located northeast of the Meadow, a landscape feature characterized by its open, sloping topography and a contributing element to AFRH-W Historic District. Positioning the new facility within the eastern portion of the building site, as occurs under Alternative A, would allow for the partial restoration of open space in this location, extending open ground from the Meadow to the historic core. This would have a moderate, long-term, beneficial impact on the historic resources within the study area when compared to existing conditions.

Lastly, assuming potential impacts from demolition and new construction on the building site would be avoided through the incorporation of engineering methods to protect the buildings and through construction monitoring and site protections to ensure that adjacent historic buildings remain stable, the demolition component of Alternative A would have no additional impact on the historic buildings and landscape resources within the study area.

Two elements of the demolition component of Alternative A factor into its potential impact on the historic features within the study area as they currently exist. These are identified below.

First, the demolition component of Alternative A would require the relocation of the IT center – currently located in the Scott Building – to the southwest corner of the Sherman Building basement. The Sherman Building was originally constructed in 1852 and served as the Home's first hospital, dormitory, and administrative building. It is located within the U.S. Soldiers' and Airmen's Home National Historic Landmark and is identified as a contributing building to AFRH-W Historic District. Up to three rooms in the basement of the Sherman Building would be converted for the relocation of the IT center, which would result in minor alterations to interior architectural elements. Exterior modifications would include the addition of air-conditioning condenser units in the below-grade well that runs along the perimeter of the building. These condenser units would be largely hidden from view, but may affect the visual quality of the Sherman Building and the National Historic Landmark. Although anticipated to be minimal, the noise generated by the operation of the condenser units may affect the adjacent President Lincoln and Soldiers' Home National Monument. The relocation of the IT center from the Scott Building to the Sherman Building would have a minor, long-term, adverse impact on the historic features within the study area as they currently exist.

Second, the demolition component of Alternative A would require the relocation of the Sheridan Building chiller equipment and cooling towers. The chiller equipment, currently located in the basement of the Scott Building, would be relocated to the Sheridan Building, and the cooling towers, currently located on the roof of the Scott Building, would be moved to a location south of the Sheridan Building Plaza. The Sheridan Building and its adjacent Plaza were constructed outside the period of significance of AFRH-W Historic District and are identified as noncontributing resources. The relocation of chiller equipment to the Sheridan Building and the installation of a large exterior louver would have no potential impact on the physical integrity of historic built and natural resources within the study area. Transferring the cooling towers, which would be approximately 25 feet tall and screened by a metal wall, to a new location south of the Sheridan Building Plaza may potentially impact the visual quality of Quarters 40 and Quarters 41, both identified as contributing resources to the historic district. Additionally, due to the size of the cooling towers and the screening, their location may potentially interrupt views into the Home from North Capitol Street. The relocation of the cooling towers to the preferred cooling tower location would have a minor, long-term, adverse impact on the historic features within the study area as they currently exist. Additional vegetation buffers would be used to screen the cooling tower and mitigate some of the adverse impact.

Alternative B:

Under Alternative B, the existing Scott Building would be demolished and a new facility would be constructed in the same general location.

The existing Scott Building is not listed individually in the D.C. Inventory of Historic Sites or the National Register of Historic Places. It is not located within the boundaries of the U.S. Soldiers' and Airmen's Home National Historic Landmark or the President Lincoln and Soldiers' Home National Monument. Although the Scott Building is located within AFRH-W Historic District, it was constructed in 1954 – outside the period of significance – and is categorized as a noncontributing building. The demolition component of Alternative B would neither alter the characteristics of the Home that qualify it for inclusion in the National Register nor diminish its integrity.

As described below, although the build component of Alternative B would construct a new facility on the Scott Building site, its scale and massing would be significantly reduced and the viewshed would be improved when compared to existing conditions. The net result of the demolition and build components of Alternative B would have a minor, long-term, beneficial impact on the historic resources within the study area when compared to current conditions.

Under Alternative B, the build component would construct a new facility composed of two separate building masses, or wings, oriented north-south. The wings would be connected by a one-story structure set back from Scott Drive behind an exterior courtyard. The wings would have a low massing with a height of two stories as seen from the north. Terraces would extend to the west from the western wing and to the south from the connection structure and the eastern wing. Various elements of the build component of Alternative B factor into its potential impact on the historic features within the study area as they currently exist. These are identified below.

First, the new facility would be located adjacent to the historic core of the Home – the location of the earliest and most significant buildings within the AFRH-W Historic District. The historic core is also the location of the U.S. Soldiers' and Airmen's Home National Historic Landmark and the President Lincoln and Soldiers' Home National Monument. Historically, the spatial organization of the historic core was defined by open ground that overlooked the southern portions of AFRH-W and provided unobstructed views south toward Washington and the U.S. Capitol. This spatial organization was largely altered with the construction of the Scott Building in 1954, which resulted in the development of a formalized landscaped lawn, or quadrangle, south of the Sherman Building, the establishment of Scott Road and its street trees, and the creation of a pedestrian connection between the Sherman Building and the Scott Building – all noncontributing features to AFRH-W Historic District. The location and scale of the new facility (compared to existing conditions) would partially restore the open space that historically defined the spatial organization of the historic core. This would have a minor, long-term, beneficial impact on the historic resources within the study area when compared to existing conditions.

Second, the building site would be located east of Officers Quarters 1 and Officers Quarters 2 – contributing buildings within the historic core. These small-scale residential structures are surrounded by foundation plantings that serve as a transition between the domestic scale of the residences and the forest stands to the west. Under existing conditions, the scale and location of the Scott Building negatively affects the residential character of the officers quarters. Under Alternative B, the new facility would be located mostly within the eastern portion of the building site with an open grassy area to the west. This would orient the new facility in a careful manner and would lessen the impact of the facility on the residential character of the officers quarters. This would have a minor, long-term, beneficial impact when compared to existing conditions.

Third, the building site would be located northwest of the Rose Chapel and its associated landscape resources – Chapel Woods, Chapel Circle, and the Chapel Foundation Plantings. These features are contributing resources within the historic district. Under Alternative B the main mass of the building would be separated into two wings with the two-story mass of the eastern wing extending deep into the eastern end of the building site. However, when compared to the existing Scott Building, the massing and orientation of the new facility would be more sensitive to the visual character of Rose Chapel and its surrounding landscape. This would have a minor, long-term, beneficial impact when compared to existing conditions.

Fourth, the building site would be located northeast of the Meadow, a landscape feature characterized by its open, sloping topography and a contributing element to AFRH-W Historic District. Positioning the new facility primarily within the eastern portion of the building site, as occurs under Alternative B, would allow for the partial restoration of open space in this location, extending the open ground from the Meadow to the historic core. This would have a moderate, beneficial, long-term impact on the historic resources when compared to existing conditions.

Lastly, assuming potential impacts from demolition and new construction on the building site would be avoided through the incorporation of engineering methods to protect the buildings and through construction monitoring and site protections to ensure that adjacent historic buildings remain stable, the demolition component of Alternative B would have no additional impact on the historic buildings and landscape resources within the study area.

Two elements of the demolition component of Alternative B factor into its potential impact on the historic features within the study area as they currently exist. These are identified below.

First, the demolition component of Alternative B would require the relocation of the IT center – currently located in the Scott Building – to the southwest corner of the Sherman Building basement. The Sherman Building was originally constructed in 1852 and served as the Home's first hospital, dormitory, and administrative building. It is located within the U.S. Soldiers' and Airmen's Home National Historic Landmark and is identified as a contributing building to AFRH-W Historic District. Up to three rooms in the basement of the Sherman Building would be converted for the relocation of the IT center, which would result in minor alterations to interior architectural elements. Exterior modifications would include the addition of air-conditioning

condenser units in the below-grade well that runs along the perimeter of the building. These condenser units would be largely hidden from view, but may affect the visual quality of the Sherman Building and the National Historic Landmark. Although anticipated to be minimal, the noise generated by the operation of the condenser units may affect the adjacent President Lincoln and Soldiers' Home National Monument. The relocation of the IT center from the Scott Building to the Sherman Building would have a minor, long-term, adverse impact on the historic features within the study area as they currently exist.

Second, the demolition component of Alternative B would require the relocation of the Sheridan Building chiller equipment and cooling towers. The chiller equipment, currently located in the basement of the Scott Building, would be relocated to the Sheridan Building, and the cooling towers, currently located on the roof of the Scott Building, would be moved to a location south of the Sheridan Building Plaza. The Sheridan Building and its adjacent Plaza were constructed outside the period of significance of AFRH-W Historic District and are identified as noncontributing resources. The relocation of chiller equipment to the Sheridan Building and the installation of a large exterior louver would have no potential impact on the physical integrity of historic built and natural resources within the study area. Transferring the cooling towers, which would be approximately 25 feet tall and screened by a metal wall, to a new location south of the Sheridan Building Plaza may potentially impact the visual quality of Quarters 40 and Quarters 41, both identified as contributing resources to the historic district. Additionally, due to the size of the cooling towers and the screening, their location may potentially interrupt views into the home from North Capitol Street. The relocation of the cooling towers to the preferred cooling tower location would have a minor, long-term, adverse impact on the historic features within the study area as they currently exist. Additional vegetation buffers would be used to screen the cooling tower and mitigate some of the adverse impact.

Alternative C: No Action

Alternative C constitutes the No Action alternative. Under this alternative no alterations would be made to the Scott Building, and existing conditions would continue. As the existing condition, this alternative would have no impact on the overall integrity or on the character-defining features of the historic resources within the study area as they currently exist. The existing condition, in which the Scott Building is an intrusion in the historic district, would continue.

4.1.3 Views and Vistas

Alternative A:

Scenic views and visual resources, recognized as a central element of the Home's picturesque landscape, are identified as a single contributing resource to the AFRH-W Historic District. With the construction of the Scott Building in 1954, the historic viewshed from the Lincoln Cottage and the historic core of the Home to the U.S. Capitol was compromised.

Under Alternative A, the new facility would be located within the eastern portion of the building site. This would restore historic viewsheds from the historic core and particularly from the Lincoln Cottage to the U.S. Capitol. A small section of the New Commons and Healthcare

Facility may be visible from North Capitol street, looking west across the parking lot but would be substantially less visible than the existing Scott Building and mostly obscured from view by the Sheridan Building. this alternative would have a moderate, long-term, beneficial impact when compared to existing conditions.

The relocation of the IT center to the basement of Sherman Building would have no impact on the historic viewsheds identified as a contributing resource to AFRH-W Historic District as such mitigation is not required.

The relocation of the cooling towers to the preferred cooling tower location of the parking located to the southeast of the Sheridan Building would have no impact on the historic viewsheds identified as a contributing resource to AFRH-W Historic District but would have a minor, long-term, adverse impact on the visual setting of adjacent historic resources. Additional vegetation buffers would be used to screen the cooling tower and mitigate some of the adverse impact.

Alternative B:

Scenic views and visual resources, recognized as a central element of the Home's picturesque landscape, are identified as a single contributing resource to the AFRH-W Historic District. With the construction of the existing Scott Building in 1954, the historic viewshed from the Lincoln Cottage and the historic core of the Home to the U.S. Capitol was compromised. Under Alternative B, the new facility would mostly be located within the eastern portion of the building site, but a terrace component would extend partially into the historic viewshed. This section of the building would read as one story from the north and feature a roof garden. Under Alternative B, the historic viewsheds from the historic core and particularly from the Lincoln Cottage to the U.S. Capitol – viewed over a one-story terrace – would be partially restored. A small section of the east wing of the New Commons and Healthcare Facility may be visible from North Capitol Street, looking west across the parking lot but would be substantially less visible than the existing Scott Building and mostly obscured from view by the Sheridan Building. This alternative would have a minor, long-term, beneficial impact on the views and vistas within the study area when compared to existing conditions.

The relocation of the IT center to the Sherman Building would have no impact on the historic viewsheds identified as a contributing resource to AFRH-W Historic District as such mitigation is not required.

The relocation of the chiller cooling towers to the preferred cooling tower location of the parking located to the southeast of the Sheridan Building would have no impact on the historic viewsheds identified as a contributing resource to AFRH-W Historic District but would have a minor, long-term, adverse impact on the visual setting of adjacent historic resources. Additional vegetation buffers would be used to screen the cooling tower and mitigate some of the adverse impact.

Alternative C: No Action

Under Alternative C, no alterations would be made to the existing Scott Building. This alternative would have no impact on the current views from the Lincoln Cottage and the historic core of the AFRH-W to the U.S. Capitol. However, the existing condition, in which the Scott Building obstructs a key historic viewshed from the Lincoln Cottage to the U.S. Capitol, would continue.

4.2 LAND USE

Alternative A:

Alternative A does not present a change in land use. The existing Scott Building would be replaced by a smaller structure that serves a similar function, and is in character with the overall usage of AFRH-W. The proposed action would result in a net decrease in the building footprint in the area of disturbance and an associated increase in landscaped area. Alternative A would utilize the project area in similar but more efficient manner than the no action alternative and would result in a minor, long-term, beneficial impact on land use.

The relocation of the IT center to the Sherman Building and the relocation of the cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

Alternative B does not present a change in land use. The existing Scott Building would be replaced by a smaller structure that serves a similar function, and is in character with the overall usage of AFRH-W. The proposed action would result in a net decrease in the building footprint in the area of disturbance and an associated increase in landscaped area, however the net decrease would not be as great as Alternative A since Alternative B has a larger footprint than Alternative A. Alternative B would utilize the project area in similar but more efficient manner than the no action alternative and would result in a minor, long-term, beneficial impact on land use.

The relocation of the IT center to the Sherman Building and the relocation of the cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to land use.

4.2.1 Planning Policies

Alternative A:

District-wide planning is directed by *The Comprehensive Plan for the National Capital* Alternative A would develop the proposed project site in a manner that benefits the Home's residents, provides a model for the country and is worthy of the nation's capital in accordance

with the Federal Elements of the comprehensive plan. Development on the proposed project site, would be done by a Federal agency, is not subject to local zoning. Furthermore, the proposed project site would be used for the same purposes as the previous use maintaining consistency. The AFRH-W Master Plan identifies the existing Scott Building location, the proposed new building would be within the foot print of the existing Scott Building, therefore this project has no additional impact beyond what was presented in the Master Plan. No impact to planning policies would occur.

The relocation of the IT center to the Sherman Building and the relocation of the cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

District-wide planning is directed by *The Comprehensive Plan for the National Capital*. Alternative B would develop the proposed project site in a manner that benefits the Home's residents, provides a model for the country and is worthy of the nation's capital in accordance with the Federal Elements of the comprehensive plan. Development on the proposed project site, if done by Federal government, is not subject to local zoning. Furthermore, the proposed project site would be used for the same purposes as the previous use maintaining consistency. The Master Plan identifies the existing Scott Building location, the proposed new building would would be within the foot print of the existing Scott Building, therefore this project has no additional impact beyond what was presented in the Master Plan. No impact to planning policies would occur.

The relocation of the IT center to the Sherman Building and the relocation of the cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to planning policies.

4.2.2 Open Space

Alternative A:

The proposed project site would continue to provide open space as it would be redeveloped to provide the same existing amenities. Furthermore, open space including the golf course and surrounding paths and green spaces would not be affected by development of the New Commons and Healthcare Building. The northern portion of the ball field may be utilized as lay-down space during construction. The quadrangle would remain north of the construction zone and Scott Road would likely remain operational with the exception of some temporary closures. Alternative A would result in a minor to moderate, beneficial, long-term direct impact on open space.

The relocation of the IT center to the Sherman Building and the relocation of the cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

The proposed project site would continue to provide open space as it would be redeveloped to provide the same existing amenities. Furthermore, open space including the golf course and surrounding paths and green spaces would not be affected by development of the new Commons/Healthcare Building. The northern portion of the ball field may be utilized as lay-down space during construction. The Quadrangle would remain north of the construction zone and Scott Road would likely remain operational with the exception of some temporary closures. Alternative B would create less open space than Alternative A however it would still result in a minor, beneficial, long-term direct impact on open space.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to existing open space. However, the existing Scott Building would continue to occupy its large foot print and there would not be an opportunity to introduce more open space at the site.

4.3 NATURAL RESOURCES

Natural Resources at the existing Scott Building, within AFRH-W, and the surrounding area have been identified and are discussed below. Identified resources include topography, vegetation, and water.

4.3.1 Topography and Soils

Alternative A:

Impacts to topography and soils would occur from clearing, grading, and general construction activities. A detailed erosion and sedimentation control plan based on the requirements of the Watershed Protection Division of the DC Department of Environment would be developed prior to construction. Soil erosion would be mitigated though the development and implementation of this plan and the proper use of the appropriate soil erosion and sediment control measures. Impacts to topography and soils during construction would be minor, adverse and short term. There would be no long-term impact to topography and soils during operation.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

Impacts to topography and soils would occur from clearing, grading, and general construction activities. A detailed erosion and sedimentation control plan based on the requirements of the Watershed Protection Division of the DC Department of Environment would be developed prior to construction. Soil erosion would be mitigated though the development and implementation of this plan and the proper use of the appropriate soil erosion and sediment control measures. Impacts to topography and soils during construction would be minor, adverse and short term. There would be no long-term impact to topography and soils during operation.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to topography.

4.3.2 Vegetation

Alternative A:

The new Commons and Healthcare Building would be landscaped with vegetation in accordance with the Master Plan. Invasive plant species would be removed on a regular basis to prevent damaging overgrowth. The New Commons and Healthcare Building would provide an increase in permeable, landscaped site area. The landscape would continue the more formal plantings of the quadrangle along its northern façade and then transition to the less formal plantings appropriate to the southern side of the proposed project site facing the Meadow and golf course. Several planted roof gardens would be are part of the new facility. While not listed as contributing trees, several existing mature specimen trees on the proposed project site would be protected and maintained during construction. Trees and their root zones to be protected would be marked with high visibility tape/flagging or fencing to reduce the possibility of inadvertent removal or damage. These are located along Scott Drive and to the west of the existing dining hall extending in a line to Arnold Drive. Small trees would be moved and re-used on AFRH-W where possible. Permanent impacts to vegetation are anticipated to be minor, beneficial and long-term.

A new on-grade cooling tower for the Sheridan Building's relocated chillers would be located east of the Sheridan Building within the Sheridan parking lot. Impacts to vegetation during construction and operation are anticipated to be negligible, beneficial and short-term in regards to the preferred cooling tower location.

The relocation of the IT center to the Sherman Building would have no impact.

Alternative B:

The design plan for Alternative B would create a larger building footprint in relation to Alternative A, therefore less landscaping would result. The New Commons and Healthcare

Building would be landscaped with vegetation in accordance with the Master Plan. Invasive plant species would be removed on a regular basis to prevent damaging overgrowth. The New Commons and Healthcare Building would provide an increase in permeable, landscaped site area. The landscape would continue the more formal plantings of the quadrangle along its northern façade and then transition to the less formal plantings appropriate to the southern side of the proposed project site facing the savannah and golf course. Several planted roof gardens would be part of the new facility. While not listed as contributing trees, several existing mature specimen trees on the proposed project site would be protected and maintained during construction. Trees and their root zones to be protected would be marked with high visibility tape, flagging or fencing to reduce the possibility of inadvertent removal or damage. These are located along Scott Drive and to the west of the existing dining hall extending in a line to Arnold Drive. Small trees would be moved and re-used on AFRH-W where possible Permanent impacts to vegetation are anticipated to be minor, beneficial, and long-term.

A new on-grade cooling tower for the Sheridan Building's relocated chillers would be located east of the Sheridan Building within the Sheridan parking lot. Impacts to vegetation during construction and operation are anticipated to be negligible, beneficial and long-term in regards to the preferred cooling tower location.

The relocation of the IT center to the Sherman Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to vegetation.

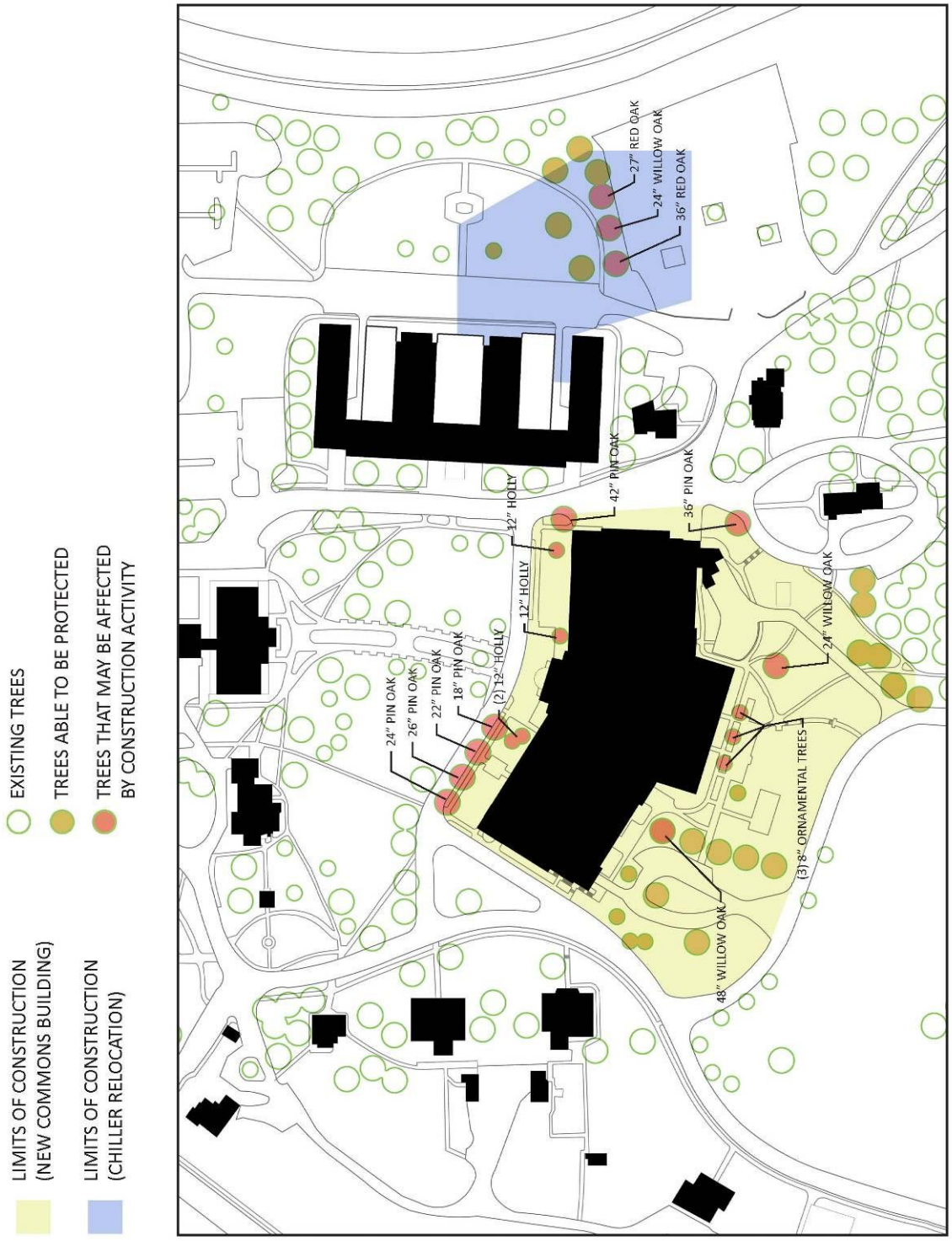


Figure 4-2: Tree Preservation Map (Adapted from DiMella Shaffer)

4.3.3 Water Resources

Alternative A:

Surface water resources are not anticipated to be impacted by the development of the New Commons and Healthcare Building. New construction is not located near the fishing ponds on the southwest portion of AFRH-W. Minor, short-term adverse impacts to surface water and concrete storm water channels may occur during construction activities. Potential impacts would be mitigated by adherence to the District Department of the Environment Watershed Protection Division's stormwater management and sediment and erosion control regulations for construction sites as stated in the Stormwater Guidebook.

As a sustainability goal, the landscape design of the New Commons and Healthcare Building is aiming for a zero-run-off site by utilizing water absorbing materials and installation of green roofs. Reduction of stormwater runoff from existing conditions and increase in pervious surfaces would result in operational minor long-term, indirect beneficial impacts to surface water resource.

There would be no direct impacts to groundwater hydrology or quality. Furthermore, groundwater at AFRH-W is not used for potable or industrial purposes. According to the District of Columbia Department of Health Water Quality division, groundwater in the District of Columbia is currently impaired due to sewer overflows, urban runoff, and storm sewers. The proposed project site is located within an urban area; however demolition of the existing Scott Building and Construction of the new commons and Healthcare building would result in a decrease in impervious surfaces. Short-term and long-term impacts to groundwater and groundwater or recharge would be minor and beneficial because of the decrease in impervious surfaces. Impacts to water resources would be minor, adverse, and short term during construction. Operational impacts would be, minor, beneficial, and long term.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

Surface water resources are not anticipated to be impacted by the development of the New Commons and Healthcare Building. New construction is not located near the fishing ponds on the southwest portion of AFRH-W. Temporary impacts to surface water and concrete storm water channels may occur during construction activities. However these impacts are short-term and are not anticipated to have long-term effects on the surface water resources at the site.

Potential impacts would be mitigated by adherence to the District Department of the Environment Watershed Protection Division's stormwater management and sediment and erosion control regulations for construction sites as stated in the Stormwater Guidebook. As a sustainability goal, the landscape design of the New Commons and Healthcare Building is aiming for a zero-run-off site by utilizing water absorbing materials.

There would be no direct impacts to groundwater hydrology or quality. Furthermore, groundwater at AFRH-W is not used for potable or industrial purposes. According to the District of Columbia Department of Health Water Quality division, groundwater in the District of Columbia is currently impaired due to sewer overflows, urban runoff, and storm sewers. The proposed project site is located within an urban area; however demolition of the existing Scott Building and Construction of the new commons and Healthcare building would result in a decrease in impervious surfaces. there would be no Impact to ground water or the recharge of groundwater aquifers. Impacts to water resources would be minor, adverse, and short term during construction. Operational impacts would be, minor, beneficial, and long term.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to current conditions.

4.4 TRANSPORTATION

Transportation impacts as they relate to vehicles, parking, public transportation, as well as pedestrian and bicycle circulation are discussed in the following sections. Transportation flow and use was looked at in terms of getting to and from AFRH-W as well as to and from on-site buildings.

4.4.1 Vehicular Circulation

Alternative A:

The movement of construction materials, equipment, and workers would likely impact roadways in the immediate area, specifically North Capitol Street. Construction traffic would enter from a temporarily re-activated North Capitol Street gate and trucks would be routed on Marshall/Arnold drive to access the site. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours. Impacts could be mitigated further by restricting deliveries and construction traffic to non-rush hour times if needed. This should minimize the construction traffic impact on the existing residents of Sheridan and the surrounding area. There would be no impact to visitors traveling to /from the Lincoln Cottage. Overall, construction-related impacts would be moderate, adverse, short-term.

Specific roadway improvements have not been identified in association with this project, nor would the proposed action result in additional parking at AFRH-W. There would be no long-term impacts to traffic related to the operations of the proposed project.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

The movement of construction materials, equipment, and workers would likely impact roadways in the immediate area specifically North Capitol Street. Construction traffic would enter from a temporarily re-activated North Capitol Street gate and trucks would be routed on Marshall/Arnold drive to access the site. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours. Impacts could be mitigated further by restricting deliveries and construction traffic to non-rush hour times if needed. This should minimize the construction traffic impact on the existing residents of Sheridan and the surrounding area. There would be no impact to visitors traveling to /from the Lincoln Cottage. Overall, construction-related impact would be moderate, adverse, short-term.

Specific roadway improvements have not been identified in association with this project. There would be no long-term operational impacts to traffic.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, no impact would occur because construction activities would not be undertaken.

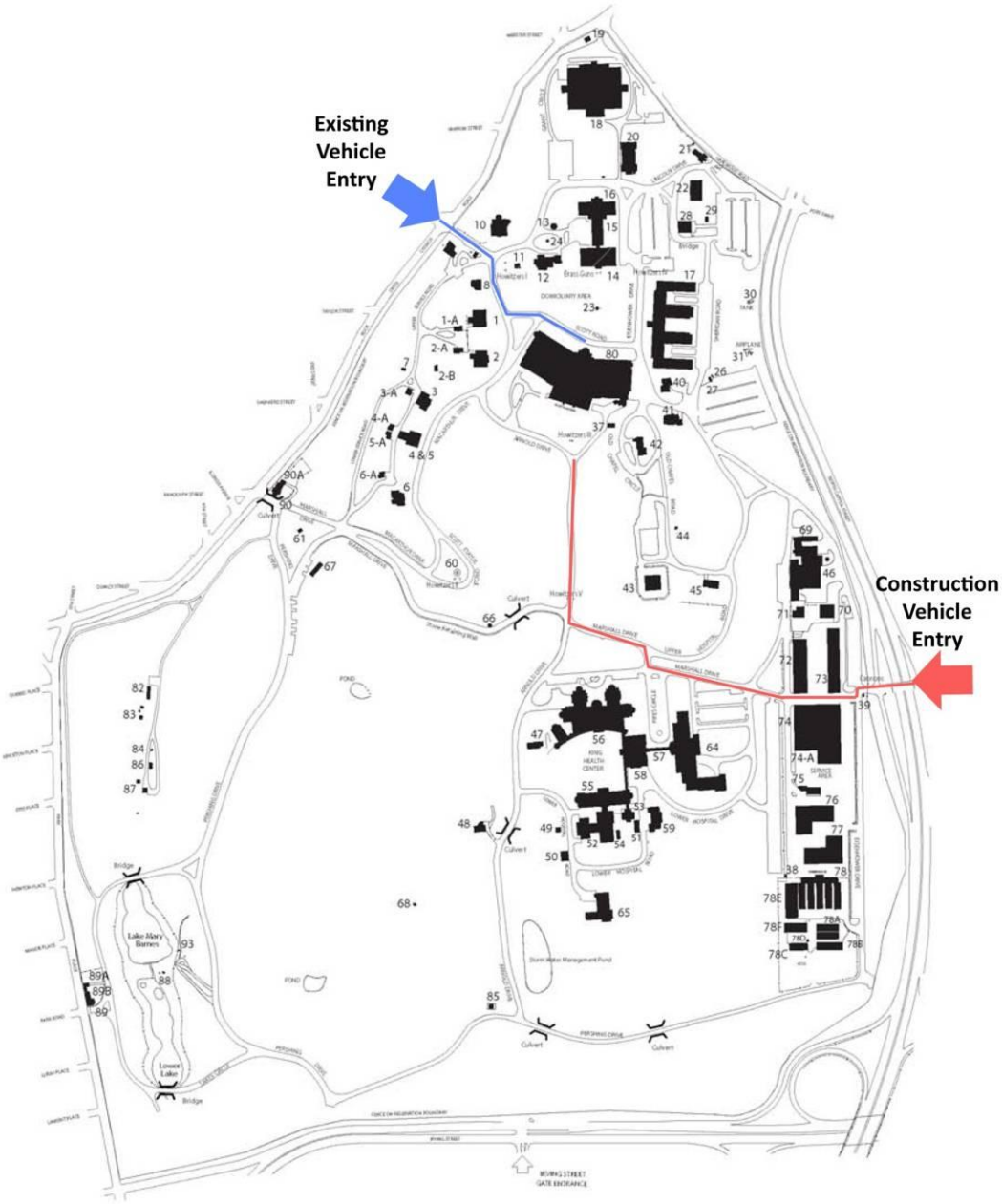


Figure 4-3: Proposed Construction Vehicle Entry (Adapted from DiMella Schaffer)

4.4.2 Parking

Alternative A:

Alternative A would result in a net loss of seventeen (17) parking spaces; five (5) of the one hundred and sixty five (165) spaces from the Sheridan lot would be lost to the new cooling tower and twelve (12) of the remaining 32 spaces surrounding the existing Scott Building would be lost. Therefore the impact to parking during operation would be negligible, long-term and adverse. However, the AFRH-W is currently in compliance with the master plan parking ratio shown below. The AFRH would remain in compliance because the loss in parking spaces together with the reduction in gross square footage maintains the master plan parking ratio.

- 0.75 spaces per thousand square feet of assisted living;
- 1.00 space per thousand square feet of residential;

Construction would cause minor, short term, adverse impacts due to all or some of the lots being closed for construction vehicles, equipment, and staging. Parking spaces for the Lincoln Cottage would not be impacted.

The fourteen (14) existing parallel parking spaces located on MacArthur Drive adjacent to the existing Scott Building would be temporarily impacted during the construction phase. These spaces are for visitors to the existing Scott Building, so their need during construction is diminished. These spaces would be open after construction with no loss of spaces.

Currently, there are two (2) parking spaces at the existing loading dock and eight (8) spaces at the circular drive south of the Scott Building. The new Commons and Healthcare building would not have spaces at the new loading dock or along the circular drive south of the Scott Building resulting in a loss of ten (10) spaces.

Eight (8) existing parking spaces on Eisenhower Drive at the east side of the Scott Building would be impacted during construction. These spaces are currently used by staff and would not be needed during construction. During operation of the new Commons and Healthcare Building, there would be six (6) new parallel spaces along Eisenhower Drive for ADA visitor and staff parking resulting in a loss of two (2) spaces compared to existing conditions. All other visitor and staff parking would be assigned to the existing Sheridan lot between Sheridan Road and North Capitol Street, which is currently underutilized.

In total, there would be a net loss of seventeen (17) existing parking spaces, however, the new parking ratio would comply with the master plan parking ratio.

The preferred cooling tower location is in the northeast corner of the existing lot located between Sheridan Road and North Capitol Street. This lot currently is marked for 165 spaces. The preferred cooling tower location would occupy five (5) parking spaces in this parking lot. During construction of the cooling towers, there would be minor to moderate, short-term, adverse impact to parking. During the operation of the cooling towers, there would be a minor, long-term, adverse impact to parking.

Relocating the IT center to the Sherman Building would have no impact on parking.

Alternative B:

Alternative B would result in a net loss of twenty-eight (28) parking spaces; five (5) of the one hundred and sixty eight (168) spaces from the Sheridan lot would be lost to the new cooling tower and twenty three (23) of the remain 48 spaces surrounding the existing Scott Building would also be lost. The impact to parking during operation would be negligible, long-term and adverse. However, the AFRH-W is currently in compliance with the master plan parking ratio shown below. The AFRH would remain in compliance because the loss in parking spaces together with the reduction in gross square footage maintains the master plan parking ratio.

- 0.75 spaces per thousand square feet of assisted living;
- 1.00 space per thousand square feet of residential;

Construction would cause minor, short term, adverse impacts due to all or some of the lots being closed for construction vehicles, equipment, and staging. Parking spaces for the Lincoln Cottage would not be impacted.

The fourteen (14) existing parallel parking spaces located on MacArthur Drive adjacent to the existing Scott Building would be temporarily impacted during the construction phase. These spaces are for visitors to the existing Scott Building, so their need during construction is diminished. These spaces would be open after construction with no loss of spaces.

Currently, there are four (4) parking spaces at the existing loading dock and ten (10) spaces at the circular drive south of the Scott Building. The new Commons and Healthcare building would not have spaces at the new loading dock or along the circular drive south of the Scott Building.

Fifteen (15) existing parking spaces on Eisenhower Drive at the east side of the Scott Building would be impacted during construction. These spaces are currently used by staff and would not be needed during construction. During operation of the new Commons and Healthcare Building, there would be six (6) new parallel spaces along Eisenhower Drive for ADA visitor and staff parking resulting in a loss of nine (9) spaces compared to existing conditions. All other visitor and staff parking would be assigned to the existing Sheridan lot between Sheridan Road and North Capitol Street, which is currently underutilized.

In total, there would be a net loss of twenty-eight (28) existing parking spaces, however, the new parking ratio would comply with the master plan parking ratio.

The preferred cooling tower location is in the northeast corner of the existing lot located between Sheridan Road and North Capitol Street. This lot currently is marked for 168 spaces. The preferred cooling tower location would occupy five (5) parking spaces in this parking lot. During construction of the cooling towers, there would be minor to moderate, short-term, adverse impact to parking. During the operation of the cooling towers, there would be a minor, long-term, adverse impact to parking.

Relocating the IT center to the Sherman Building would have no impact on parking.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to parking.

4.4.3 Public Transportation

Alternative A:

AFRH-W is currently accessible via WMATA Metro at the Georgia Ave-Petworth station and by Metrobus lines H8 and 60 which service the main entrance gate on Rock Creek Church Road. There would be no impacts with regards to public transportation use.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

AFRH-W is currently accessible via WMATA Metro at the Georgia Ave-Petworth station and by Metrobus lines H8 and 60 which service the main entrance gate on Rock Creek Church Road. There would be no impacts with regards to public transportation use.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken therefore there would be no impact to public transportation.

4.4.4 Pedestrian/Bicycle Circulation

Alternative A:

The existing Scott Building is currently accessible via pedestrian and bicycle circulation for AFRH-W residents and employees only. In accordance with the Master Plan, pedestrian and bicycle circulation would continue to be available in order to access the New Commons and Healthcare Building. There would be no long-term impacts to pedestrian and bicycle circulation.

However, there may be short periods of time when new construction requires temporary rerouting or lane closures. Impacts could by mitigated by requiring advanced notice of disruptions in circulation. Advance notice requirements would be developed and enforced through a construction management plan. Impacts to pedestrian and bicycle circulation during construction would be minor, adverse and short term.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative B:

The existing Scott Building is currently accessible via pedestrian and bicycle circulation for AFRH-W residents and employees only. In accordance with the Master Plan, pedestrian and bicycle circulation would continue to be available in order to access the New Commons and Healthcare Building. There would be no impacts to operational pedestrian and bicycle circulation.

However, there may be short periods of time when new construction requires temporary rerouting or lane closures. Impacts would be mitigating by requiring advanced notice of disruptions in circulation. Advance notice requirements would be developed and enforced through a construction management plan. Impacts to pedestrian and bicycle circulation during construction would be minor, adverse and short term.

The relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location of the parking lot located to the south east of the Sheridan Building would have no impact.

Alternative C: No Action

Under the No Action Alternative, site development would not be undertaken thus there would be no impact to pedestrian and bicycle circulation.

4.5 UTILITIES AND INFRASTRUCTURE

This section deals with impacts to existing infrastructure, energy and environmental performance, stormwater and hazardous waste/contamination. Utilities include steam, electric, natural gas, water and sewer lines, an underground reservoir and Information and technology (IT) communication lines.

4.5.1 Utilities

Alternative A:

Utilities to the existing Scott Building would be disconnected during demolition and reconnected to the New Commons and Healthcare Facility during construction. The existing Scott Building is served by primary steam from the power plant, primary electrical from high voltage distribution, municipal natural gas, water, and sewer lines. IT Infrastructure for the community also originates in the existing Scott Building.

The steam connection for the existing Scott Building approaches both the Scott and Sheridan Buildings from a point between the two and does not run through the existing Scott Building to serve Sheridan or other buildings. The steam connection to the existing Scott Building would be shut off for construction without disrupting service to the Sheridan Building. There would be no impact to the steam line.

Electrical service is sufficient for the New Commons and Healthcare Building and a new main would be relocated for the new construction. Electrical service would not be disrupted for the surrounding buildings. There would be no impact to electrical service.

Currently, chilled water is generated from electricity in the existing Scott Building and serves both the Scott and Sheridan Buildings. A permanent new chiller plant would be necessary prior to demolition of the existing Scott Building and would therefore not disrupt service to the Sheridan Building. This new chiller plant would be located in the existing Sheridan Building and would require a new cooling tower structure that would be located on-grade southeast of the Sheridan Building between the Sheridan Grounds and the north central edge of an existing parking lot. Impacts to the generation of chilled water would be negligible, long-term, and adverse.

Natural gas lines enter the existing Scott Building from the west and may need to be extended to the east for the new construction, see Figure 3-15: Gas and Heating Lines AFRH-W (AFRH EIS, 2007). The size of the service should take into account future intention to provide stand alone boilers which would be located inside the new Commons and Healthcare Building. Natural gas service would not be disrupted for the surrounding buildings. There would be no impact to natural gas lines.

Data and communication lines would be relocated to the Sherman Building in order to continue to provide service for the Sheridan, LaGarde and Sherman Buildings. Impacts to data and communications lines would be negligible, beneficial and long-term.

Alternative B:

Utilities to the existing Scott Building would be disconnected during demolition and reconnected to the New Commons and Healthcare Facility during construction. The existing Scott Building is served by primary steam from the power plant, primary electrical from high voltage distribution, municipal natural gas, water, and sewer lines. IT Infrastructure for the community also originates in the existing Scott Building.

The steam connection for the existing Scott Building approaches both the Scott and Sheridan Buildings from a point between the two and does not run through the Scott Building to serve Sheridan or other buildings. The steam connection to the existing Scott Building would be shut off for construction without disrupting service to the Sheridan Building. There would be no impact to the steam line.

Electrical service is sufficient for the New Commons and Healthcare Building and a new main would be relocated for the new construction. Electrical service would not be disrupted for the surrounding buildings. There would be no impact to electrical service.

Currently, chilled water is generated from electricity in the existing Scott Building and serves both the Scott and Sheridan Buildings. A permanent new chiller plant would be necessary prior to demolition of the Scott Building and would therefore not disrupt service to the Sheridan Building. This new chiller plant would be located in the existing Sheridan Building and would require a new cooling tower structure that would be located on-grade southeast of the Sheridan Building between the Sheridan Grounds and an the north central edge of an existing parking lot. Impacts to the generation of chilled water would be negligible, long-term, and adverse.

Natural gas lines enter the existing Scott Building from the west and may need to be extended to the east for the new construction, see Figure 3-15: Gas and Heating Lines AFRH-W (AFRH EIS, 2007). The size of the service should take into account future intention to provide stand alone boilers. Natural gas service would not be disrupted for the surrounding buildings. There would be no impact to natural gas lines.

Data and communication lines would be relocated to the Sherman Building in order to continue to provide service for the Sheridan, LaGarde and Sherman Buildings. Impacts to data and communications lines would be negligible, beneficial, and long-term.

Alternative C: No Action

Under the No Action Alternative, site development would not occur therefore utilities would remain in place and unchanged, thus there would be no impact to utilities from current conditions.

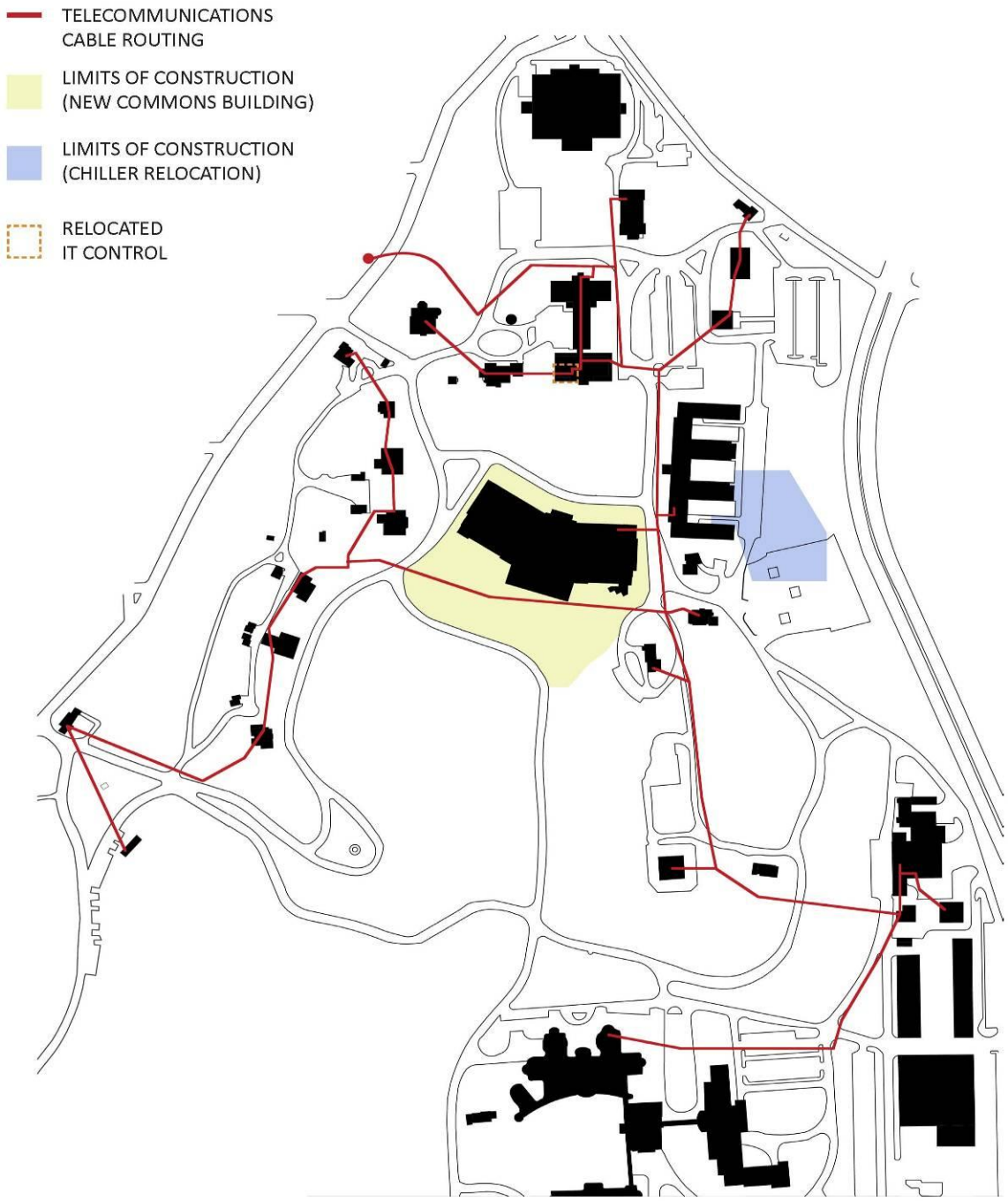


Figure 4-4: Proposed Telecommunications Routing Map (Adapted from DiMella Shaffer)

4.5.2 Energy and Environmental Performance

Alternative A: Alternative A would result in a moderate improvement in the on-going energy efficiency and environmental performance of the facility. The development and procurement process of the proposed action would incorporate energy, environmental, and sustainability concepts. Alternative renewable energy sources are being considered such as solar hydronic roof panels to reduce hot water generation for the third floor roof area

The new Commons and Healthcare Building would include energy efficient heating and cooling systems, water efficient plumbing fixtures, proper building insulation, energy efficient lighting, and the inclusion of native plant species in landscaping.

In addition the new construction included in Alternative A would comply with the requirements of Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance. The proposed action includes the replacement of a large, out-dated, inefficient structure that would lower the costs and environmental impacts associated with operation of this facility. Equipment utilized in the new facility would be ENERGYSTAR or Federal Energy Management Program (FEMP) designated where possible.

The proposed new Commons and Healthcare facility would be designed to take advantage of preexisting site conditions, such as retaining mature trees to derive the passive solar shading they provide. In addition, a greywater system is included in the proposed design, which would collect wastewater from sinks and showers and use it for on-site irrigation. This system would reduce the water usage of the facility and the volume of water discharged to the municipal sanitary sewer. Impacts to energy and environmental performance would be moderate, beneficial and long-term.

The energy and environmental performance impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Alternative B:

Alternative B would result in a moderate improvement in the on-going energy efficiency and environmental performance of the facility. The development and procurement process of the proposed action would incorporate the energy, environmental, and sustainability concepts

The new Commons and Healthcare facility would include energy efficient heating and cooling systems, water efficient plumbing fixtures, proper building insulation, energy efficient lighting, and the inclusion of native plant species in landscaping.

In addition the new construction included in Alternative B would comply with the requirements of Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance. The proposed action includes the replacement of a large, out-dated, inefficient structure that would lower the costs and environmental impacts associated with operation of this facility.

Equipment utilized in the new Commons and Healthcare facility would be ENERGYSTAR or Federal Energy Management Program (FEMP) designated where possible. The proposed new facility would be designed to take advantage of preexisting site conditions, such as retaining mature trees to derive the passive solar shading they provide. In addition, a greywater system is included in the proposed design, which would collect wastewater from sinks and showers and use it for on-site irrigation. This system would reduce the water usage of the facility and the volume of water discharged to the municipal sanitary sewer. Impacts to energy and environmental performance would be moderate, beneficial and long-term.

The energy and environmental performance impacts for Alternative B also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Alternative C: No Action

The no-action alternative would result in no impact on the on-going energy efficiency of the existing Scott Building. However, the no-action alternative would forgo the opportunity for the sponsor agency to increase their compliance with several goals set forth in Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance. These goals include the reduction in energy intensity in federal buildings and improving water use-efficiency and management.

4.5.3 Stormwater Management

Alternative A:

EPA has issued *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy independence and Security Act [EISA] (Dec 2009).* The guidance states: "

> Implementation of Section 438 of the EISA can be achieved through the use of the green infrastructure/low impact development (GI/LID) infrastructure tools described in this guidance. The intention of the statute is to maintain or restore the pre-development site hydrology during the development or redevelopment process. To be more specific, this requirement is intended to ensure that receiving waters are not negatively impacted by changes in runoff temperature volumes, durations and rates resulting from federal projects".

Alternative A would provide an increase in permeable surface on the site compared to Alternative C. This Alternative would be in compliance with the Technical Guidance through the reduction of stormwater volume and an increase in stormwater quality with the goal of a zero-runoff site. Alternative A would reduce the footprint from the existing Scott Building by 31,357

square feet, and would result in a smaller area of impervious surface than Alternative B or Alternative C. Roof gardens incorporated into the design would reduce the volume and slow the rate of runoff. In addition, innovative bioretention areas would be utilized in the design in place of standard stormwater ponds. Alternative A provides the best opportunity to achieve zero-runoff due its compact design.

Construction activities would abide by the District Department of the Environment Watershed Protection Division's stormwater management and sediment and erosion control regulations for construction sites as stated in the Stormwater Guidebook. Construction of Alternative A would result in a minor, adverse, short-term impact on stormwater quality.

In addition, the U.S. Environmental Protection Agency (EPA) published effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites on December 1, 2009. The proposed area of disturbance is six acres; therefore the stormwater quality monitoring portion of the EPA regulations are not applicable to the proposed project site. Operational impacts to stormwater would be minor to moderate, beneficial and long-term.

The storm water management impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Alternative B:

Alternative B would also be in compliance with the Technical Guidance through increased permeable surface area and zero run off compared to Alternative C. Roof gardens incorporated into the design would reduce the volume and slow the rate of runoff. In addition, innovative bioretention areas would be utilized in the design in place of standard stormwater ponds further improving the existing stormwater runoff conditions. However, Alternative B would provide 7,751 square feet more impermeable surface area than Alternative A.

Construction activities would abide by the District Department of the Environment Watershed Protection Division's stormwater management and sediment and erosion control regulations for construction sites as stated in the Stormwater Guidebook. Impacts to stormwater management are not anticipated. Construction of Alternative B would result in a minor, adverse, short-term impact on stormwater quality.

In addition, the U.S. Environmental Protection Agency (EPA) published effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites on December 1, 2009. The proposed area of disturbance is six acres; therefore the stormwater quality monitoring portion of the EPA regulations are not applicable to the proposed project site. Operational impacts to stormwater would be minor, beneficial and long-term.

The storm water management impacts for Alternative B also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred

cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Alternative C: No Action

Under the No Action Alternative, site development would not occur resulting in no change to existing stormwater management conditions. The no action alternative would not include the stormwater improvements included in Alternative A or B, and would result in no impact.

4.5.4 Hazardous Waste/Contamination

Alternative A:

F&R's *Limited Hazardous Survey Report* dated October 23, 2009 (included in Appendix) identifies hazardous materials within the existing Scott Building. The survey identified the presence of asbestos containing building materials, lead based paint, mercury-containing components and PCB's within the existing Scott Building. Hazardous materials would be properly removed and disposed of in accordance with current environmental practices. The removal of these materials would create a minor, beneficial, long term impact.

The hazardous waste/contamination impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Alternative B:

F&R's *Limited Hazardous Survey Report* dated October 23, 2009 (included in Appendix) identifies hazardous materials within the existing Scott Building. The survey identified the presence of asbestos containing building materials, lead based paint, mercury-containing components and PCB's within the existing Scott Building. Hazardous materials would be properly removed and disposed of in accordance with current environmental practices. The removal of these materials would create a minor, beneficial, long term impact.

The hazardous waste/contamination impacts for Alternative B also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Alternative C: No Action

Under the No Action Alternative, site development would not occur resulting in no impact to existing hazardous materials identified in the existing Scott Building.

4.6 AIR QUALITY

The air quality of an area can be affected in three ways by new development: 1) through airborne dust generated by the demolition/construction process; 2) on-site operations; and 3) through increasing vehicular traffic to the proposed project site, which raises vehicle emission levels near the proposed project site, and possibly in the region.

Alternative A:

Controlled Demolition:

US EPA National Emission Standards for Hazardous Air Pollutants (40 CFR 61) require that visible emissions from the site not be generated as a result of demolition. General demolition activities and debris removal would generate nuisance dust related to disturbance of non-hazardous materials such as concrete, wood, gypsum, and soil. Dust from the demolition of the structures and resulting debris would be mitigated during the demolition process through proper use of water cannons, elevated spray hoses, dust boss sprayers, and other wet methods.

A second concern is the potential disturbance of hazardous materials during the demolition of the structure. A Hazardous Materials Survey has been performed and specifications for the proper segregation and removal of identified hazardous materials would be prepared prior to or concurrent with demolition to the structure.

The extent and severity of the impact would depend upon the characteristics of the demolition equipment in use and the time of day that demolition takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major demolition project, areas around the demolition site are likely to experience varied periods and degrees of impact. The following demolition air quality mitigation measures would be developed and enforced through a demolition management plan to limit impacts.

- All demolition equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- New demolition equipment would be used as much as possible since it is generally more efficient than old equipment.

Air quality impacts from demolition would be minor, adverse, and short term.

The existing IT center and the existing chillers are located within the existing Scott Building. Therefore controlled demolition impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Construction:

Emissions would be generated form from construction equipment, soil excavation, site disturbance, and from construction worker vehicles commuting to the site. Emissions produced during construction would vary daily depending upon site activities. The extent and severity of the impact would depend upon the characteristics of the construction equipment in use and the time of day that construction takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of impact. The following construction air quality mitigation measures would be developed and enforced through a construction management plan to limit impacts.

- All construction equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- New construction equipment would be used as much as possible since it is generally more efficient than old equipment.

Air quality impacts from construction would be minor, adverse, and short term.

Construction air quality impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Operational Air Quality:

The New Commons and Healthcare Building would replace the existing Scott Building and would not induce additional air quality impacts. There would be no impact to air quality during operation.

Relocation of the IT center to the Sherman Building would have no impact on operational air quality.

Relocation of the cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building would have minor, long-term and adverse impacts on operational air quality.

The main source for potential air quality impacts is the demolition and construction process.

Alterative B:

Controlled Demolition:

US EPA National Emission Standards for Hazardous Air Pollutants (40 CFR 61) require that visible emissions from the site not be generated as a result of demolition. General demolition activities and debris removal would generate nuisance dust related to disturbance of non-hazardous materials such as concrete, wood, gypsum, and soil. Dust from the demolition of the structures and resulting debris would be mitigated during the demolition process through proper use of water cannons, elevated spray hoses, dust boss sprayers, and other wet methods.

A second concern is the potential disturbance of hazardous materials during the demolition of the structure. A Hazardous Materials Survey has been performed and specifications for the proper segregation and removal of identified hazardous materials would be prepared prior to or concurrent with demolition to the structure.

The extent and severity of the impact would depend upon the characteristics of the demolition equipment in use and the time of day that demolition takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major demolition project, areas around the demolition site are likely to experience varied periods and degrees of impact. The following demolition air quality mitigation measures would be developed and enforced through a demolition management plan to limit impacts.

- All demolition equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- New demolition equipment would be used as much as possible since it is generally more efficient than old equipment.

Air quality impacts from demolition would be minor, adverse, and short term.

The existing IT center and the existing chillers are located within the existing Scott Building. Therefore controlled demolition impacts for Alternative B also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Construction:

Emissions would be generated form from construction equipment, soil excavation, site disturbance, and from construction worker vehicles commuting to the site. Emissions produced during construction would vary daily depending upon site activities. The extent and severity of the impact would depend upon the characteristics of the construction equipment in use and the time of day that construction takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of impact. The following construction air quality mitigation measures would be developed and enforced through a construction management plan to limit impacts.

- All construction equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- New construction equipment would be used as much as possible since it is generally more efficient than old equipment.

Air quality impacts from construction would be minor, adverse, and short term.

Relocation of the IT center to the Sherman Building would have no impact on operational air quality.

Relocation of the cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building would have minor, short-term and adverse impacts on air quality during construction.

Operational Air Quality:

The New Commons and Healthcare Building would replace the existing Scott Building and would not induce additional air quality impacts. There would be no impact to air quality during operation.

Relocation of the IT center to the Sherman Building would have no impact on operational air quality.

Relocation of the cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building would have minor, long-term and adverse impacts on operational air quality.

The main source for potential air quality impacts is the demolition and construction process.

Alternative C: No Action

Under the No Action Alternative, site development would not occur therefore there would be no impact to air quality.

4.7 NOISE LEVELS

Alternative A:

Controlled Demolition:

During controlled demolition, noise and vibration would be generated from physical destruction/dismantling of the existing Scott Building, vehicle noise, and machine noise. The current noise ordinance for Washington DC (Title 20 Section 2701) requires the maximum sound level (Lmax) be less than 60 dBA (daytime) and 55 dBA (nighttime). Permitted construction sites in the District of Columbia are required to restrict maximum sound levels to less than 80 dBA (Lmax) as measured at the property boundaries from 0700 to 1900.

The extent and severity of the noise and vibration impact would depend upon the noise characteristics of the construction equipment in use and the time of day that construction takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major demolition project, areas around the demolition site are likely to experience varied periods and degrees of impact. Therefore, demolition associated with development of Alternative A would have direct, moderate, adverse, short-term impacts on noise levels.

The following controlled demolition noise and vibration mitigation measures would be developed and enforced through a controlled demolition management plan to limit noise at the sensitive noise receptors of the existing healthcare facility, residences, and national monument.

- All demolition equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- Air compressors would meet current US EPA noise emission standards.
- New demolition equipment would be used as much as possible since it is generally quieter than old equipment.
- Noise barriers around stationary noise sources would be established.
- Tools and equipment would be selected to minimize noise.
- Vibration levels would be specified and monitored to mitigate impact on historic structures.

The existing IT center and the existing chillers are located within the existing Scott Building. Therefore controlled demolition impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller's cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Construction Noise:

During construction, noise and vibration would be generated from physical manufacturing of the new Commons and Healthcare Building, vehicle noise, and machine noise. The current noise ordinance for Washington DC (Title 20 Section 2701) requires the maximum sound level (Lmax) be less than 60 dBA (daytime) and 55 dBA (nighttime). Permitted construction sites in the District of Columbia are required to restrict maximum sound levels to less than 80 dBA (Lmax) as measured at the property boundaries from 0700 to 1900.

The extent and severity of the noise and vibration impact would depend upon the noise characteristics of the construction equipment in use and the time of day that construction takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of impact. Therefore, construction associated with development of Alternative A would have direct, moderate, adverse, short-term impact on noise levels.

The following construction noise and vibration mitigation measures would be developed and enforced through a construction management plan to limit impacts at the sensitive receptors of the existing healthcare facility, residences, and national monument.

- All construction equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- Air compressors would meet current US EPA noise emission standards.
- New construction equipment would be used as much as possible since it is generally quieter than old equipment.
- Noise barriers around stationary noise sources would be established.
- Tools and equipment would be selected to minimize noise.
- Vibration levels would be specified and monitored to mitigate impact on historic structures.

Construction noise impacts for Alternative A also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller's cooling towers to the preferred cooling tower location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Operational Noise:

The New Commons and Healthcare Building would replace the existing Scott Building and would not induce additional noise though general operation and/or increased traffic volumes.

According to noise level results, decibel levels would increase one or two decibels above the No Action Alternative due mainly to predicted general growth in the community. The noise level increase associated with predicted general growth is not a direct result of Alternative A. (Reference Fig. 4-22 EIS). There would be no impact to noise from operations related to the proposed action.

Relocation of the IT center to the Sherman Building would have no impact on noise levels during operation.

Noise levels associated with the relocation of the cooling towers to the north-central edge of the parking lot located to the south east of the Sheridan Building would be mitigated though the placement of sound reducing landscaping. The cooling towers relocation would have a minor, adverse, long-term impact from operations.

Alternative B:

Controlled Demolition:

During controlled demolition, noise and vibration would be generated from physical destruction/dismantling of the existing Scott Building, vehicle noise, and machine noise. The current noise ordinance for Washington DC (Title 20 Section 2701) requires the maximum sound level (Lmax) be less than 60 dBA (daytime) and 55 dBA (nighttime). Permitted construction sites in the District of Columbia are required to restrict maximum sound levels to less than 80 dBA (Lmax) as measured at the property boundaries from 0700 to 1900.

The extent and severity of the noise and vibration impact would depend upon the noise characteristics of the construction equipment in use and the time of day that construction takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major demolition project, areas around the demolition site are likely to experience varied periods and degrees of impact. Therefore, demolition associated with development of Alternative B would have direct, moderate, adverse, short-term impacts on noise levels.

The following controlled demolition noise and vibration mitigation measures would be developed and enforced through a controlled demolition management plan to limit impacts at the sensitive noise receptors of the existing healthcare facility, residences, and national monument.

- All demolition equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- Air compressors would meet current US EPA noise emission standards.
- New demolition equipment would be used as much as possible since it is generally quieter than old equipment.
- Noise barriers around stationary noise sources would be established.

- Tools and equipment would be selected to minimize noise.
- Vibration levels would be specified and monitored to mitigate impact on historic structures.

The existing IT center and the existing chillers are located within the existing Scott Building. Therefore controlled demolition impacts for Alternative B also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers preferred cooling tower locations along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Construction Noise:

During construction, noise and vibration would be generated from physical manufacturing of the new Commons and Healthcare Building, vehicle noise, and machine noise. The current noise ordinance for Washington DC (Title 20 Section 2701) requires the maximum sound level (Lmax) be less than 60 dBA (daytime) and 55 dBA (nighttime). Permitted construction sites in the District of Columbia are required to restrict maximum sound levels to less than 80 dBA (Lmax) as measured at the property boundaries from 0700 to 1900.

The extent and severity of the noise and vibration impact would depend upon the noise characteristics of the construction equipment in use and the time of day that construction takes place. Contractor working hours at AFRH-W have been designated as 07:00 to 18:00 hours by AFRH. As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of impact. Therefore, construction associated with development of Alternative B would have direct, moderate, adverse, short-term impact on noise levels.

The following construction noise and vibration mitigation measures would be developed and enforced through a construction management plan to limit impacts at the sensitive receptors of the existing healthcare facility, residences, and national monument.

- All construction equipment powered by an internal combustion engine would be equipped with a properly maintained muffler.
- Air compressors would meet current US EPA noise emission standards.
- New construction equipment would be used as much as possible since it is generally quieter than old equipment.
- Noise barriers around stationary noise sources would be established.
- Tools and equipment would be selected to minimize noise.
- Vibration levels would be specified and monitored to mitigate impact on historic structures.

Construction noise impacts for Alternative B also apply to the relocation of the IT center to the Sherman Building and the relocation of the chiller cooling towers preferred cooling tower

location along the north-central edge of the parking lot located to the south east of the Sheridan Building.

Operational Noise:

The New Commons and Healthcare Building would replace the existing Scott Building and would not induce additional noise though general operation and/or increased traffic volumes. According to noise level results, decibel levels would increase one or two decibels above the No Action Alternative due mainly to predicted general growth in the community. The noise level increase associated with predicted general growth is not a direct result of Alternative B. (Reference Fig. 4-22 EIS). There would be no impact to noise from operation of the proposed project.

Relocation of the IT center to the Sherman Building would have no impact on noise during operations.

The cooling towers relocation would have a minor, adverse, long-term impact on operational noise. Noise levels associated with the relocation of the cooling towers to the north-central edge of the parking lot located to the south east of the Sheridan Building would be mitigated though the placement of sound reducing landscaping.

Alternative C: No Action

Under the No Action Alternative, demolition would not occur therefore there would be no impact to noise and vibration levels.

4.8 CUMULATIVE IMPACTS

Alternatives A & B:

Development of the New Commons and Healthcare Building would not result in cumulative impacts to the AFRH-W or surrounding area. The development would replace the existing Scott Building and serve the same purpose.

Eisenhower road may become one-way travel (north) to facilitate a one-way counterclockwise loop around the quadrangle from MacArthur Drive on the west to Lincoln Road on the north. All other vehicular traffic would be two-way and would occur on the outside perimeter of the quadrangle behind Sherman, Sheridan and the proposed New Commons and Healthcare Building. This potential change in circulation would simplify the traffic flow in front of the Sheridan and allow for a more easily managed pedestrian crossing between Sheridan and the New Commons and Healthcare Building. If this change occurs the impact to pedestrian and vehicular traffic would be minor, beneficial, and long term.

The new Commons and Healthcare Building would not induce additional traffic volumes or noise levels. According to Noise Level Results, decibel levels would increase one or two decibels above the No Action Alternative due mainly to predicted general growth in the community. As long-term operations under Alternative A has been determined to not have impact to noise, it would not cumulatively add to the noise level increase associated with predicted general growth is not a direct result of Alternative A. (Reference Fig. 4-22 EIS).

New development on AFRH-W would be concentrated on the eastern portion of AFRH-W. New development on the eastern portion of AFRH-W does have the potential to create cumulative impacts to traffic, noise, and air quality from construction.

Alternative C: No Action

Under the No Action Alternative, site development would not occur therefore there would be no cumulative impacts. However, maintaining the status quo would not improve the existing Scott Buildings' height, massing, formal relationship with the Sherman Building; operational cost; maintenance cost; horizontal travel distance, or vertical circulation. The Lincoln Cottage viewshed would remain obstructed. The building would remain energy inefficient.

Eisenhower road may become one-way travel (north) to facilitate a one-way counterclockwise loop around the quadrangle from MacArthur Drive on the west to Lincoln road on the north. this potential change in circulation would simplify the traffic flow in front of the Sheridan and allow for a more easily managed pedestrian crossing between Sheridan and the Scott Building. If this change occurs the impact to pedestrian and vehicular traffic would be minor, beneficial, and long term.

5.0

SOURCES

5.0 SOURCES

- AFRH Final Master Plan - 7 Aug 2008
- Armed Forces Retirement Home – Washington Master Plan *Final Environmental Impact Statement* dated November 2007 prepared by Armed Forces Retirement Home
- USGS 7.5 minute Topographic Map "Washington West, DC," dated 1983
- National Wetlands Inventory database accessed February 23, 2010
- National Resources Conservation Service Aerial Photography dated 2008
- District of Columbia Inventory of Historic Sites
- National Register of Historic Places
- District of Columbia Office of Planning, *Planning Map* dated January 2002
- United Stated Department of Agriculture, National Resources Conservation Service Soil Survey of District of Columbia dated 1975
- National Capital Planning Commission, *Comprehensive Plan for the National Capital: Federal Element,* dated 2004
- US EPA National Emission Standards for Hazardous Air Pollutants (40 CFR 61)

6.0

PREPARERS

6.0 PREPARERS:

ARMED FORCES RETIREMENT HOME

Joseph Woo, *Project Manager*
Federal Preservation Officer
Armed Forces Retirement Home
3700 North Capitol Street
Washington, DC 20011-8400

Carrie Barton, *Cultural Resources Manager*
EHT Traceries, Inc.
1121 Fifth Street, NW
Washington, DC 20001

U.S. GENERAL SERVICES ADMINISTRATION, NATIONAL CAPITAL REGION

Amanda Murphy, *NEPA Specialist*
Portfolio Management Division
Public Buildings Service
U.S. General Services Administration – National Capital Region
301 7th Street, SW, Room 7600
Washington, DC 20470

Tim Sheckler, *Project Manager*
Real Property Utilization and Disposal Division
Public Buildings Service
U.S. General Services Administration – National Capital Region
301 7th Street, SW, Room 7709
Washington, DC 20407

Richard Hamilton, *PE*
Design and Construction
Public Buildings Service
U.S. General Services Administration - National Capital Region
301 7th Street, SW, Room 2130
Washington, DC 20407

DIMELLA SHAFFER

Alex Adkins, *Architect*
DiMella Shaffer
281 Summer Street
Boston, MA 02210

FROEHLING AND ROBERTSON INC

Stefan W. Buck, *Environmental Scientist*
310 Hubert Street
Raleigh, NC 27603

Zachary Parker, *Environmental Scientist*
3015 Dumbarton Road
Richmond, VA 23228

Christopher J. Burkhardt, *Environmental Department Manager*
310 Hubert Street
Raleigh, NC 27603

Christy Slaw, *Senior Project Manager*
3015 Dumbarton Road
Richmond, VA 23228

Kelly Clawson, *Branch Manager*
7798 Waterloo Road
Jessup, MD 20794

Jeffrey M. Hudson, *Vice President*
Environmental Services
FROEHLING & ROBERTSON, INC.
3015 Dumbarton Road, Richmond, VA 23228

ROBINSON & ASSOCIATES, INC

Judith Robinson, *Principal*
1909 Q Street, N.W.
Washington, D.C. 20009

Tim Kerr
1909 Q Street, N.W.
Washington, D.C. 20009

Daria Gasparini
1909 Q Street, N.W.
Washington, D.C. 20009

7.0

SCOPING LETTER and EA DISTRIBUTION LIST

AFRH
The Premier Retirement Community for America's Veterans

Armed Forces Retirement Home
Chief Operating Officer
3700 N. Capitol Street, NW
P. O. Box 1303
Washington, DC 20011-8400

November 12, 2009

Dear Interested Party:

Please be advised that the Armed Forces Retirement Home (AFRH-W) in cooperation with the U.S. General Services Administration, National Capital Region (GSA) and the National Capital Planning Commission (NCPC) is preparing an Environmental Assessment (EA) for the modernization and consolidation of residential and medical facilities on the AFRH-W campus located at 3700 North Capitol Street in Washington, DC.

The EA will be prepared in accordance with the National Environmental Policy Act (NEPA). NEPA requires a Federal agency to provide the public with an opportunity to participate in the process of analyzing the impact of Federal actions on the human environment. The purpose of this letter is to notify members of the community and other stakeholders of the opportunity to assist in identifying alternatives, potential impacts that may occur as a result of the proposed action, and other environmental concerns. AFRH-W is accepting comments regarding the scope of the EA for 30 calendar days from the date on this letter. Your participation in this process is greatly appreciated.

The purpose of this project is to consolidate AFRH-W residential and medical operations in the campus core and to provide facilities that meet modern senior living standards.

(1) **Consolidate AFRH-W operations in the northern section of the campus (campus core) by accommodating Memory Support (MS), Long Term Care (LTC), and Assisted Living (AL) functions.** Currently MS, LTC, and AL reside in the southern section of the campus. Independent Living (IL) currently resides in the Scott and Sheridan Buildings in the northern section of the campus (campus core). AFRH-W seeks to increase operational and programmatic efficiency by consolidating all current residential operations in the campus core and eliminating duplicative functions that are currently distributed throughout the campus. Consolidation of these functions will create a more unified residential community by moving all residents to the core of the campus.

(2) **Improve and modernize campus facilities to meet the changing needs of the Home's current and future residents.** The Scott Building, which was constructed in 1954, currently houses resident rooms, as well as the Home's primary 'common' areas. These facilities are outdated and do not sufficiently accommodate the needs and interests of the residents. Further, AFRH-W must initiate steps to accommodate future residents. These recent veterans will have different medical and accessibility needs

than current residents. Therefore, AFRH-W seeks to modernize its facilities to address the changing needs of veterans and provide facilities designed to maximize energy efficiency, meet current building codes, and reflect the latest standards and practices in senior housing and healthcare.

As such, this project must address several needs:

- Improved consistency with contemporary philosophies in senior living, particularly the concept of "small house" design for skilled nursing care.
- Programmatic and spatial adjacencies should be minimized to facilitate a more unified residential community and to create ease of mobility from room to room, rooms to commons, and within the commons area itself.
- Increased energy and operational efficiency.
- Accommodate complex and extensive building infrastructure systems required for modern medical and residential needs.
- Efficient and modern common spaces that accommodate the needs of all residents.
- Application of modern gerontologic design principles to support physical, sensory, and cognitive challenges faced by the residents.
- Provide in-house medical care that promotes the concept of aging-in-place.
- Contextual design and compatibility with the historic character of the surrounding AFRH-W Historic District and the immediately adjacent National Historic Landmark.

While meeting the overall purpose and need of the project, AFRH-W must emphasize that the residents of the Home are the primary beneficiaries of all modernization and consolidation efforts. AFRH must also ensure that the project furthers the agency's mission of fulfilling our nation's commitment to its veterans by providing a premier retirement community with exceptional residential care and extensive support services on its historic Washington, DC, Campus.

AFRH-W and GSA have initiated planning for the modernization and consolidation of residential and medical facilities in the core of the AFRH campus. The EA will assess the impacts to the human environment that may occur from the proposed action. The EA will be a supplement to the Environmental Impact Statement (EIS) that was prepared for the AFRH - Master Plan. The Final EIS was completed in November 2007 and the Record of Decision (ROD) was signed February 26, 2008.

Comments received during the scoping period will be used to refine alternatives and issues to be analyzed in the EA. Preliminary alternatives to be analyzed in the EA include demolition of the Scott Building and construction of a new building on that site; renovation of the existing Scott Building; and a no action alternative. AFRH-W identified cultural resources, noise, utilities/infrastructure, air quality, stormwater management, visual quality, pedestrian and bike circulation, and hazardous materials as preliminary issues to be analyzed in the EA. Impacts to wetlands, transportation, parking, floodplains,

threatened and/or endangered species, water resources, vegetation, and socio-economic resources are not anticipated to occur.

Upon completion, the Final EA will be made available to the public for review and comments for a period of 30 days. The Final EA is scheduled for availability in winter 2010.

AFRH-W is now accepting comments regarding the scope of the EA for 30 calendars days from the date of this letter. Comments received during the scoping period will be used to refine alternatives and issues to be analyzed in the EA.

Written comments concerning the scope should be submitted to AFRH's Environmental Assessment consultant:

Mr. Christopher J. Burkhardt
Froehling & Robertson, Inc.
Environmental Department Manager
310 Hubert Street
Raleigh, NC 27603 | USA
T 919.828.3441 | F 919.582.0304 | M 919.630.1369
cburkhardt@fandr.com

Sincerely,

TIMOTHY C. COX
Chief Operating Officer

Armed Forces Retirement Home
Office of the Chief Operating Officer
3700 N. Capitol Street, P.O. Box 1303
Washington, DC 20011-8400

RESIDENTIAL AND MEDICAL FACILITIES CONSOLIDATION AND MODERNIZATION
ENVIRONMENTAL ASSESSMENT DISTRIBUTION LIST

April 14, 2010

Mr. David Levy
Director, Urban Design & Plan Review
National Capital Planning Commission
401 9th Street, NW, North Lobby, Suite 500
Washington, DC 20004
david.levy@ncpc.gov

Mr. Tom Luebke, Secretary
U.S. Commission of Fine Arts
401 F Street NW, Suite 312
Washington, DC 20001-2728
tluebke@cfa.gov

Mr. Timothy Denee
Senior Historic Preservation Specialist
DC Historic Preservation Office
2000 14th Street, NW, Suite 401
Washington, DC 20009
timothy.denee@dc.gov

Ms. Geraldine Gardner,
Assoc. Director of Neighborhood Planning
DC Office of Planning
2000 14th Street, NW, Suite 401
Washington, DC 20009
geraldine.gardner@dc.gov

Ms. Deborah Crain Kemp
Neighborhood Planner
District of Columbia Office of Planning
2000 14th Street, NW, 4th Floor
Washington, DC 20009

Mr. Tom Mayes
Deputy General Counsel
National Trust for Historic Preservation (NTHP)
1785 Massachusetts Avenue, NW
Washington, District of Columbia 20036-2117 tom_mayes@NTHP.org

Mr. William O. Howland, Jr., Director
DC Department of Public Works
2000 14th Street, NW, Suite 401
Washington, DC 20009
william.howland@dc.gov

Mr. David McLaughlin, Director
DC Water and Sewer Authority
5000 Overlook Avenue, SW
Washington, DC 20032
david.mclaughlin@dc.gov

Ms. Jessica Demoise, Civil Engineer
DC Water and Sewer Authority
5000 Overlook Avenue, SW
Washington, DC 20032
Jessica.demoise@dcwasa.com

Mr. George S. Hawkins, Director
DC Department of the Environment
Government of the District of Columbia
51 N Street NE
Washington, DC 20002
george.Hawkins@dc.gov

Mr. Rob Nieweg, Southern Field Office
National Trust for Historic Preservation
1785 Massachusetts Ave., NW
Washington, DC 20036
preservation@nthp.org

Ms. Katharine Kerr
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue, NW, Suite 803
Washington, DC 20004
KKerr@achp.gov

Mr. Gottlieb Simon
Office of Advisory Neighborhood Commissions
John A. Wilson Building, Room 8
1350 Pennsylvania Avenue, NW
Washington, DC, 20004
gottlieb.simon@dc.gov

Ms. Rebecca Miller, Executive Director
DC Preservation League
401 F Street, NW, Room 324
Washington, DC 20001
info@dcpreservation.org

Mr. Gary Scott, Historian
U.S. National Park Service
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240
gary_scott@nps.gov

Mr. Jim Graham, Councilmember – Ward 1
The Council of the District of Columbia
John A. Wilson Building, Suite 105
1350 Pennsylvania Avenue NW
Washington, DC 20004
jgraham@dccouncil.us

Ms. Muriel Bowser, Councilmember – Ward 4
The Council of the District of Columbia
John A. Wilson Building, Suite 110
1350 Pennsylvania Avenue NW
Washington, DC 20004
mbowser@dccouncil.us

Mr. Harry Thomas, Jr., Councilmember – Ward 5
The Council of the District of Columbia
John A. Wilson Building, Suite 107
1350 Pennsylvania Avenue NW
Washington, DC 20004
hthomas@dccouncil.us

Ms. Harriett Tregoning, Director
DC Office of Planning
2000 14th Street, NW, Suite 401
Washington, DC 20009
harriett.tregoning@dc.gov

Mr. David Maloney
State Historic Preservation Officer
DC Historic Preservation Office
2000 14th Street, NW, Suite 401
Washington, DC 20009
david.maloney@dc.gov

Mr. Fred Lindstrom, Assistant Secretary
US Commission of Fine Arts
401 F Street NW, Suite 312
Washington, DC 20001-2728
flindstrom@cfa.gov

Mr. Marcel Acosta
Executive Director
National Capital Planning Commission
401 9th Street, NW, North Lobby, Suite 500
Washington, DC 20004
marcel.acosta@ncpc.gov

Mr. Faisal Hameed, Project Manager
DC Department of Transportation
2000 14th Street, NW, 6th Floor
Washington, DC 20009
Faisal.hameed@dc.gov

Ms. Valerie Santos
Deputy Mayor for Planning & Economic Development
Government of the District of Columbia
John A. Wilson Building
1350 Pennsylvania Avenue NW, Suite 317
Washington, DC 20004
dmped.eom@dc.gov

The Honorable Vincent C. Gray, Chair
Council of the District of Columbia
John A. Wilson Building, Suite 504
1350 Pennsylvania Avenue, NW
Washington, DC 20004
vgray@dccouncil.us

The Honorable Bob Filner
Chairman, Committee on Veterans' Affairs
U.S. House of Representatives
335 Cannon House Office Building
Washington, DC 20515-3765

The Honorable Carl Levin
Chairman, Committee on Armed Services
U.S. Senate
Room SR-228, Russell Senate Office Building
Washington, DC 20510-6050

Mr. Gary Guzy, General Counsel
Council on Environmental Quality
U.S. Environmental Protection Agency
Office of Federal Activities
722 Jackson Place, NW
Washington, DC 20503

Dr. Willie R. Taylor, Director
Office of Environmental Policy & Compliance
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240
Willie_Taylor@ios.doi.gov

The Honorable Chet Edwards, Chairman
Subcommittee on Military Construction, Veterans Affairs, and Related Agencies
U.S. House of Representatives
Room H-143 The Capitol
Washington, DC 20515-6026

Ms. Leila Finucane Edmonds, Director
Dept. of Housing & Community Development
Government of the District of Columbia
Anacostia Gateway Government Center
1800 Martin Luther King, Jr. Avenue, SE
Washington, DC 20020
Leila.edmonds@dc.gov

Mr. David Robertson, Executive Director
Metropolitan Washington Council of Governments
777 North Capitol Street, NE
Washington, DC 20002

Ms. Millicent Williams, Director
DC Homeland Security & Emergency Management Agency
2720 Martin Luther King Jr. Avenue, SE
Washington, DC 20032

Mr. Dennis L. Rubin, Chief
DC Fire and Emergency Medical Services Department
1923 Vermont Ave, NW, Suite 102
Washington, DC 20001
Dennis.rubin@dc.gov

The Honorable Eleanor Holmes Norton
Delegate, District of Columbia
U.S. House of Representatives
2136 Rayburn House Office Building
Washington, D.C. 20515-5100
Attn: Legistrative Assistant,
alexandria.tindall@email.house.gov

The Honorable Robert Andrews, Chairman
Subcommittee on Health, Employment, Labor, & Pensions
U.S. House of Representatives
2265 Rayburn House Office Building
Washington, D.C. 20515-3001

The Honorable Tom Harkin, Chairman
Committee on Health, Education, Labor, & Pensions
U.S. Senate
428 Senate Dirksen Office Building
Washington, DC 20510

Ms. Gail McGinn
Principal Deputy Under Secretary of Defense for Personnel and Readiness
4000 Defense Pentagon
Washington, DC 20301-4000

Mr. Mark Kehrli, Division Administrator
FHWA District of Columbia Division Office
1990 K Street, NW, Ste 510
Washington, DC 20006
Mark.kehrli@fhwa.dot.gov

Mr. William Abadie
Planning Division, CENAB-PL-P
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

Ms. Patricia G. Arcuri, Acting Regional Director
Federal Emergency Management Agency
615 Chestnut Street
One Independence Mall, Sixth Floor
Philadelphia, PA 19106-4404

Mr. Richard A. White, General Manager/CEO
Washington Metropolitan Area Transit Authority
District of Columbia
600 5th Street, NW
Washington, DC 20001

Ms. Marie Sansone
DC Department of Health
Environmental Health Administration
51 N Street NE
Washington, DC 20002
Marie.sansone@dc.gov

Dr. Robert Hamilton, Program Manager
Department of Health
Environmental Health Administration
Bureau of Hazardous Material & Toxic Substances
51 N Street, NE 3rd Floor
Washington, DC 20002
Robert.hamilton@dc.gov

Ms. Linda Argo, Director
DC Department of Consumer & Regulatory Affairs
941 North Capitol Street, NE, Suite 2000
Washington, DC 20002
Linda.argo@dc.gov

Mr. George Kucik, Commander
MPDC Third District
1620 V Street, NW
Washington, DC 20009
George.kucik@dc.gov

Ms. Linda Brown, Commander
MPDC Fourth District
6001 Georgia Avenue, NW
Washington, DC 20011
Linda.brown@dc.gov

Mr. Lamar Greene, Commander
MPDC Fifth District
1805 Bladensburg Road, NE
Washington, DC 20002
Lamar.greene@dc.gov

Ms. Kerri Briggs
State Superintendent of Education
DC Public Schools
825 North Capitol St., NE
Washington, DC 20002
Kerri.briggs@dc.gov

Mr. Robert Fraga
Smithsonian Institution
Office Contracting & Property Management
750 9th Street, NW, Suite 6200
Washington, DC 20560

Mr. Mike Goodno, Bicycle Program Specialist
DC Department of Transportation
2000 14th Street, NW7th Floor
Washington, DC 20009
Mike.goodno@dc.gov

The Honorable Adrian Fenty
Mayor of the District of Columbia
John A. Wilson Building
1350 Pennsylvania Avenue, NW, Suite 600
Washington, DC 20004
mayor@dc.gov

Advisory Neighborhood Commission 1A
2905 11th Street, NW
Washington, DC 20001
1a@anc.dc.gov

Advisory Neighborhood Commission 1B
P.O. Box 73710
Washington, DC 20056
1b@anc.dc.gov

Advisory Neighborhood Commission 1C
PO Box 21009
Washington, DC 20009
1c@anc.dc.gov

Advisory Neighborhood Commission 1D
1380 Monroe St NW, #117
Washington, DC 20010
1d@anc.dc.gov

Advisory Neighborhood Commission 4A
7600 Georgia Avenue, NW, Suite 404
Washington, DC 20012
4a@anc.dc.gov

Advisory Neighborhood Commission 4B
6856 Eastern Avenue, NW #314
Washington, DC 20012
4b@anc.dc.gov

Advisory Neighborhood Commission 4C
P.O. Box 60847
Washington, DC 20039-0847
4c@anc.dc.gov

Advisory Neighborhood Commission 4D
143 Kennedy Street, NW
Washington, DC 20011
4d@anc.dc.gov

Advisory Neighborhood Commission 5A
1322 Irving Street, NE
Washington, DC 20017
5a@anc.dc.gov

Advisory Neighborhood Commission 5B
2100 New York Ave, NE
Washington, DC 20002
5b@anc.dc.gov

Advisory Neighborhood Commission 5C
P.O. Box 77761
Washington, DC 20013
5c@anc.dc.gov

DC Armed Forces Retirement Home
3700 N. Capitol St. NW
Washington, DC 20011-8400

Mr. Robert I. Artisst, Sr.
Brookland Neighborhood Civic Association
1353 Otis Street, NE
Washington, DC 20001

Ms. Joan Hill
Pleasant Hills Civic Association
50 Varnum Street, NE
Washington, DC 20011

Ms. Grace J. Lewis
North Michigan Park Civic Association
4945 Sargent Road, NE
Washington, DC 20017

Mr. Yancy Pitts, Jr.
Lamond Riggs Civic Association
14 Underwood Street, NW
Washington, DC 20012

Ms. Barbara Lang, President & CEO
DC Chamber of Commerce
1213 K Street NW
Washington, DC 20005

Ms. Donna Farris Jenkins
Metropolis View Civic Association
618 Girard Street, NE
Washington, DC 20002

Ms. Gail Edwards, Executive Vice President
DC Building Industry Association
5100 Wisconsin Ave, NW, Ste 301
Washington, DC 20016

Mr. John W. Hill, Chief Executive Officer
The Federal City Council
1156 15th Street, NW, Suite 600
Washington, DC 20005

Mr. James C. Dinegar, President & CEO
The Greater Washington Board of Trade
SunTrust Conference Center
1725 I Street, NW, Suite 200
Washington, DC 20006

Ms. Laura M. Richards, Esq., Chair
Committee of 100 on the Federal City
1317 G Street, NW
Washington, DC 20005

Mr. Wesley Warren, Director of Programs
Natural Resources Defense Council
1200 New York Avenue, NW
Washington, DC 20005

Mr. Michael Stevens, President
D.C. Marketing Center
1495 F Street
Washington, DC 20004

Mr. Stewart Schwartz, Executive Director
Coalition for Smarter Growth
4000 Albemarle Street, NW, Suite 310
Washington, DC 20036

Mr. Harrison J. Rider III, President
Washington Hospital Center
110 Irving Street, NW
Washington, DC 20010
Harry.J.Rider@medstar.net

Mr. Fernando O. Rivera
Medical Center Director
VA Medical Center – DC
50 Irving Street, NW
Washington, DC 20422

Ms. Cheryl Cort, Executive Director
Washington Regional Network for Livable Communities
4000 Albemarle Street, NW, Suite 305
Washington, DC 20016
ccort@washingtonregion.net

Ms. Jody Burdell, Chief Operating Officer
Children's Hospital
111 Michigan Avenue, NW
Washington, DC 20010

Mr. Enrique Brown, Priest in Charge
Rock Creek Church
Webster St & Rock Creek Church Rd, NW
Washington, DC 20011
ENRIQUERB@aol.com

David M. O'Connell, President
The Catholic University of America
Nugent Hall
620 Michigan Avenue, NE
Washington, DC 20064

Mr. James P. Mumford, Principal
Archbishop Carroll High School
4300 Harewood Road, NE
Washington, DC 20017

Mr. H. Patrick Swygert, President
Howard University
2400 6th Street, NW, Suite 402
Washington, DC 20059

Mr. John T. Butler, President
Archbishop Carroll High School
4300 Harewood Road, NE
Washington, DC 20017

Ms. Patricia A. McGuire, President
Trinity College
125 Michigan Avenue, NE
Washington, DC 20017

Mr. David Moshier, Superintendent
Soldiers' & Airmen's Home National Cemetery
21 Harewood Road, NW
Washington, DC 20011

Mr. Don L. Peterson, Chief Executive Officer
Air Force Association
1501 Lee Highway
Arlington, VA 22209-1198
dpeterson@afa.org

Mr. Ronald K. Anderson, Chief Executive Officer
Army Aviation Association of America
4201 Pickering Place
Alexandria, VA 22309-2820

Mr. Rick Dean, Executive Director
Air Force Sergeants Association
P.O. Box 50
Temple Hills, MD 20757-0050

Ms. Patricia M. Murphy, President & CEO
Air Force Women Officers Associated
P.O. Box 780155
San Antonio, TX 78278-0155
PatriciaMurphy@afwoa.org

Mr. Gerard Farrell, Chief Executive Officer
Commissioned Officers Association of the U.S.
Public Health Service, Inc
8201 Corporate Drive, Suite 560
Landover, MD 20785

Mr. Alan Burton, President
American Logistics Association
1133 15th Street, NW, Suite 640
Washington, DC 20005-2701

Mr. Michael V. Maher, Chief Executive Officer
CWO & WO Association US Coast Guard
c/o James Creek Marina
200 V Street, SW
Washington, D.C. 20024

Mr. James B. King, Executive Director
AMVETS (American Veterans)
4647 Forbes Boulevard
Lanham, MD 20706
jking@amvets.org

Mr. Michael Cline, Executive Director
Enlisted Association of the National Guard of the U.S.
3133 Mt. Vernon Avenue
Alexandria, VA 22305

Mr. Joe Barnes (NES)
Fleet Reserve Association
125 North West Street
Alexandria, VA 22314

Mr. Dave White
Military Chaplains Association of the USA
P.O. Box 7056
Arlington, VA 22207-7056

Ms. Rachel Clinkscale
Chief Executive Officer
Gold Star Wives of America, Inc
5510 Columbia Pike, Suite 205
Arlington, VA 22204

Mr. Norbert Ryan Jr., Chief Executive Officer
Military Officers Association of America
201 N. Washington Street
Alexandria, VA 22314

Mr. Robert Zweiman, Chief Executive Officer
Jewish War Veterans of the USA
1811 R Street, NW
Washington, D.C. 20009-1659

Mr. Al Silvano, National Commander
Military Order of the Purple Heart
5413 Backlick Road, Suite B
Springfield, VA 22151-3960

Ms. Helen F. Hicks, Chief Executive Officer
Marine Corps League
P.O. Box 3070
Merrifield, VA 22116-3070

Mr. Dick Murray, President
National Association for Uniformed Services
5535 Hempstead Way
Springfield, VA 22151-4094

Mr. Tom Green, Deputy Director
Marine Corps Reserve Association
337 Potomac Ave.
Quantico, VA 22134

Brig. Gen. Stephen M. Koper, President
National Guard Association of the U.S.
One Massachusetts Ave., NW
Washington, D.C 20001

Ms. Candace A. Wheeler, Chief Executive Officer
National Military Family Association
2500 North Van Dorn St., Suite 102
Alexandria, VA 22302
cwheeler@militaryfamily.org

Maj. Gen. David Bockel, Executive Director
Reserve Officers Association
One Constitution Ave., NE
Washington, D.C. 20002
dbockel@roa.org

Mr. Robert C. Evans, National Commander
National Order of Battlefield Commissions
2506 King Street
Alexandria, VA 22301
rcevans@mmm.com

Ms. Margo Cabrero, Executive Director
Society of Medical Consultants to the Armed Forces
5 Southern Way
Fredericksburg, VA 22406
smcaf@usuhs.mil

Mr. Stephen R. Sandy, Executive Director
Naval Enlisted Reserve Association
6703 Farragut Ave.
Falls Church, VA 22042

Mr. Charlie Flowers, President
The Retired Enlisted Association
909 N. Washington Street, Suite 301
Alexandria, VA 22314

Capt. G. Mark Hardy, National President
Naval Reserve Association
1619 King Street
Alexandria, VA 22314
g.mark.hardy@ausn.org

Mr. Bob Walker, Chief Executive Officer
United Armed Forces Association
2329 Shore Sands Ct. Apt. 201
Virginia Beach, VA 23451-7309

Mr. Michael D. Ford, Executive Director
Navy League of the U.S.
2300 Wilson Blvd.
Arlington, VA 22201
mford@navyleague.org

Mr. Timothy Trimble, Chief Executive Officer
USCG Chief Petty Officers Association
5520-G Hempstead Way
Springfield, VA 22151-4009
cgcpoa@aol.com

Mr. Donald E. Hess, Acting Executive Director
US Army Warrant Officers Association
462 Herndon Pkwy., #207
Herndon, VA 20170-5235

Ms. Edmee J. Hills, National Chair
Veterans' Widows International Network, Inc
3657 E. South Laredo Street
Aurora, CO 80013
Vwin95@aol.com

Mr. Dennis Cullinan
Director, National Legislative Service
Veterans of Foreign Wars
200 Maryland Ave., NE
Washington, D.C 20002

Ms. Cynthia Dawkins
Veterans' Widows International Network
710 Carlough Street
Landover, MD 20785

Mr. Gordon Sullivan, Chief Executive Officer
Association of the U.S. Army
2425 Wilson Boulevard
Arlington, VA 22201-3326

Frank McCabe
3700 N. Capitol St., NW
Scott Bldg. #6313
Washington, DC 20011

Mark Ewert
401 Rock Creek Church Road, NW
Washington, DC 20011

Donald Pence
AFRH-W Resident
3700 N. Capitol St., NW #731
Washington, DC 20011

William D. Woods
AFRH-W Resident
3700 N. Capitol St., NW #1236
Washington, DC 20011

William Jentarra
AFRH-W Resident
3700 N. Capitol St., NW #588
Washington, DC 20011

John Hughes
3656 Park Place, NW
Washington, DC 20010

8.0

SCOPING COMMENT LETTERS

From: "Moshier, David I Mr CIV USA MDW" <david.moshier@us.army.mil>
Date: Tue, 24 Nov 2009 10:58:43
To: <timothy.cox@afrh.gov>
Subject: ENVIRONMENTAL ASSESSMENT

Dear Tim,

I have your letter of 11 November 2009 announcing the environmental assessment relating to modernizing the Home. I know of no issue to be raised on our part and give concurrence at this point.

As with the Master Plan, if there is anyway I can be of support to you, please let me know.

Bonnie joins me in wishing you and yours a happy Thanksgiving.

Sincerely,
Dave

DAVID I. MOSHIER, YA-02
Department of the Army Civilian
Superintendent
United States Soldiers' and Airmen's Home National Cemetery
21 Harewood Road, N.W.
Washington, DC 20011-4902
Voice (202) 829-1829/FAX (202) 356-0186

Donald M. Pence
AFRH-W731
3700 N. CAPITOL ST. NW
WASHINGTON, DC 20011-8400

November 30, 2009

Mr. Christopher J, Burkhardt
Froehling & Robertson, Inc.
Environmental Department Manager
310 Hubert Street
Raleigh, NC 27603

Dear Mr. Burkhardt,

This is in response to the letter from the Chief Operating Officer, Armed Forces Retirement Home, Washington DC, dated November 11, 2009, soliciting comments from stakeholders regarding proposed modernization and consolidation of medical and residential facilities at the Washington Campus.

Of the options offered, I am a strong advocate of retaining and modernizing the existing Scott Building. Granted this building is 55 years old, but is structurally sound. Our sister facility Chelsea Hospital near London, England is housed in some buildings 300 years old, the interiors of which have been updated to meet the needs of residents in the 21st Century. Since 2004 there has been substantial upgrades to the Scott Building, these are: installation of 3 new cooling towers atop the building, a total new roof with expected life of approximately 50 years, new heating equipment, modernizing and upgrading to create a new Wellness Center, Dental Clinic and Eye Clinic, plus a new modern space for a business office.

I am in general agreement with the proposal to consolidate and modernize the housing, common areas and medical facilities. I feel this should be done within the structure of the Scott Building, similar to the modernizing that was done to the Sheridan Building. This would negate most of concerns about impacting the environment. Upgrades and modernization should begin in the existing common areas on the ground floor. If additional open spaces are required, this would be available by acquiring the excess space in present dining area as Gulfport residents return to their new facility. In this same vein the first floor common areas could also be altered to meet future needs and desires.

Beginning with the second floor and above, desired alterations to be made to accommodate the Assisted Living and Long Term Care Residents. Those floors not needed could be left untouched until such time as there may be a need, such as that trust upon the Home by the Hurricane Katrina event. The cost of maintaining these spaces would be the heat to keep temperatures above freezing to protect the water pipes. The exterior of the Scott building could be enhanced by high pressure washing, most notably the North facing front of the structure, to remove the dark staining fungus thereon.

If the Scott Building were to be demolished, there would be a great impact on the environment. The impact would appear in all the areas listed in the paragraph at the bottom of page 2, above referenced letter. There would be dust in the air, scattered debris, the intrusion on campus of demolition equipment, debris recovery and removal equipment. These equipments would impede the movement of pedestrians and all forms of vehicular traffic not only on campus but adjacent neighborhoods.

My concern of greatest significance is the effect this prolonged project will have on the human environment of the fragile Residents in Independent living. Many, if not most of these Residents are in varying stages of deterioration, be it emotional, mental or physical. The disruption and altering of their activities of daily living will cause an unpredictable influence on their behavior and wellness. This I believe will not reach the level seen in those Gulfport Residents who were relocated to Washington in emergency conditions, but will cause undue upset, which may be avoided.

My closing comments are not environmental but addresses the Home's Heritage. Our founder General Winfield Scott who expressly wanted a home for his soldiers. This place was established as such in the 19th Century and has remained in this theme. The management team should not forget this intent, this purpose, this mission always. Any and all tenants hereon must be made keenly aware of this.

Most sincerely,

Donald M. Pence
Resident, AFRH-W

December 10, 2009

Christopher J. Burkhardt
Forehling & Robertson, Inc.
Environmental Department Manager
310 Hubert Street
Raleigh, NC 27603

Re: Environmental Assessment of Armed Forces Retirement Home Campus

Dear Mr. Burkhardt:

This correspondence regards the Armed Forces Retirement Home's (AFRH-W's) notification that it will be preparing an Environmental Assessment (EA) for the renovation of facilities on the AFRH-W campus located at 3700 North Capitol Street.

The DC Water and Sewer Authority wishes to draw attention to areas of potential concern within the space related to future proposed action alternatives, with particular concern directed towards the impact that construction would have on existing DC WASA infrastructure. A 48-inch water transmission line runs south from a buried concrete water storage reservoir located on the AFRH-W site.

A past issue of concern at the AFRH-W site has been the impact that increased impermeable area would have on the exacerbation of flooding downstream. Per past discussions, DC WASA requires that further development at this site include mitigation efforts that would return or exceed pre-development flood-protection conditions.

Additionally, where any permanent security barriers are proposed for installation, provisions for permanent access and adequate working space must be made between AFRH-W and DC WASA so that we may continue to access and maintain structures. In some cases, this would require AFRH-W to relocate water and/or sewer infrastructure to make this possible.

Following AFRH-W's selection of a design alternative, DC WASA is available to discuss our comments and recommendations in greater detail. For review and approval of the Environmental Assessment, I have been designated as the DC WASA point of contact for the proposed project and can be reached at 202-787-2699 or by email at jessica.demoise@dcwasa.com.

Sincerely,

Jessica Demoise
Civil Engineer

District of Columbia Office of Planning

Office of the Director

Mr. Christopher J. Burkhardt
Froehling & Robertson, Inc.
310 Hubert Street
Raleigh, NC 27603

RE: Comments on the Armed Forces Retirement Home Consolidation and Modernization – NEPA Assessment

Dear Mr. Burkhardt:

Thank you for the opportunity to provide comments on the Environmental Assessment for the Armed Forces Retirement Home (AFRH Consolidation and Modernization project. As you are aware, the AFRH has been an institution of national importance for over 150 years, and is both a D.C. Historic Landmark and a National Register of Historic Places landmark. The 272-acre campus is located in a prominent area of the city surrounded by other institutions, health care related uses (employment concentration), and the McMillan Sand Filtration site.

Several citywide elements of the Comprehensive Plan for the District of Columbia include policies that are applicable to the consolidation and modernization of the AFRH. These policies address the District's goals for urban design, sustainability, historic preservation and land use. The Comprehensive Plan also includes an Area Element for Rock Creek West, which is the planning area where the AFRH is located. Having reviewed the initial Residential and Medical Facility Consolidation and Modernization Environmental Assessment, the Office of Planning (OP) is writing to provide the following.

Land Use and Design and Sustainable Development

AFRH proposes to consolidate residential and medical operations in the northern section of the campus. As presented affected buildings include Sherman, Sheridan, and Scott. The Scott building will be renovated and/or replaced. If replaced, the new facility could be designed to restore the historic views from the Lincoln Cottage. Every effort should be made to also restore the historic views to the Capitol from this site. Further, new facilities should be designed to meet current environmental and sustainability standards and prescribed by District regulations. We encourage the AFRH to achieve the highest possible LEED standards with any new construction. Additionally, the underutilized Grant building at the northern most point of the

campus should be included in future consolidation and modernization plans for the campus. The following Comprehensive Plan policies are applicable to the consolidation and modernization:

Policy LU-1.2.3: Federal Sites
Work closely with the federal government on re-use planning for those federal lands where a change of use may take place in the future. Even where such properties will remain in federal use, the impacts of new activities on adjacent District neighborhoods should be acknowledged and proactively addressed by federal parties.

Policy LU-1.2.7: Protecting Existing Assets on Large Sites
Identify and protect existing assets such as historic buildings, historic site plan elements, important vistas and major landscape elements as large sites are redeveloped.

Policy UD-1.2.4: View Protection
Recognize and protect major views in the city, particularly characteristic views of city landmarks, and views from important vantage points. Recognize the importance of views to the quality of life in the city and the identity of Washington and its neighborhoods.

Policy E-2.2.5: Energy Efficient Building and Site Planning
Include provision for energy efficiency and for the use of alternative energy sources in the District's planning, zoning, and building standards. The planning and design of new development should contribute to energy efficiency goals.

Historic Preservation

The Section 106 Review Process will be conducted separately from NEPA and will be conducted in coordination with the State Historic Preservation Office. This will provide a comprehensive review of historic preservation issues, as well as planning and design recommendations being proposed for the site. The Comprehensive plan provides the following guidance for historic preservation.

Policy HP-2.1.4: Coordination with the Federal Government
Coordinate District historic preservation plans and programs with those of the federal government through processes established under the National Historic Preservation Act, and through close coordination with federal landholders and key agencies like the National Capital Planning Commission, Commission of Fine Arts, and the National Park Service.

Policy HP-2.4.1: Rehabilitation of Historic Structures
Promote appropriate preservation of historic buildings through an effective design review process. Apply design guidelines without stifling creativity, and strive for an appropriate balance between restoration and adaptation as suitable for the particular historic environment.

Policy RCE-2.5.3: Resource Protection
To the greatest extent possible, require the protection of panoramic views, historic landmarks, and important historic landscapes on the Armed Forces Retirement Home site. The historic links between this site and the adjacent land at the McMillan Sand Filtration site and the 49 acre property acquired by Catholic University should be reflected in its design and planning.

Transportation

The Office of Planning recently completed the North Capitol Street Cloverleaf Feasibility Study. The study identifies three options to reconfigure the North Capitol Street cloverleaf into a more efficient and productive multi-modal hub. The study also recommends short and medium term improvements that will enhance the functionality of the North Capitol Street Corridor for all users. These enhancements range from targeted intersection improvements to small scale interventions such as adding speed cameras to North Capitol to help calm traffic speeds.

The District Department of Transportation is moving forward with the findings of the DC's Transit Future Study. The study yielded short-term and long-term surface transit improvements for the city, potentially including additional limited-stop bus services, bus rapid transit (BRT) and streetcar services. The proposed streetcar network includes 37 miles of streetcar lines Construction on two streetcar lines is already underway, and it is anticipated that the system will be built in three phases. The system will connect District neighborhoods and retail corridors and serve activity centers throughout the city.

A major challenge in the upper northeast-northwest area of the city where AFRH is located is the limited east-west connections and the lack of connections between neighborhoods, particularly the development/transportation hubs between the Brookland neighborhood and the Columbia Heights Neighborhoods. While the AFRH Consolidation and Modernization project will not yield significant transportation impacts, it is important to note that anticipated pressure from proposed and approved developments in the area will exacerbate the existing traffic issues while also creating extra demand on the limited transit and alternative transportation options. Therefore, providing new transit options and implementing Transportation Demand Management are critical components to improving the transportation network in this area of the city.

Community Engagement

Although it is anticipated that there will be minimum negative impacts during the consolidation and modernization of these three buildings on the AFRH campus, sharing information with affected Advisory Neighborhood Commissioners, neighborhood organizations and other stakeholders is encouraged. During the master plan process for the redevelopment of AFRH, many community stakeholders actively participated and provided input and comments.

The Office of Planning appreciates the opportunity to comment on the AFRH Consolidation and Modernization EA. We look forward to your consideration of these comments and collaborating with you throughout the process. Should you have any questions, please contact Deborah Crain Kemp of my staff at (202) 442-7615.

Sincerely,

Harriet Tregoning
Director, DC Office of Planning

HT/dc/cgb

Deleted: ¶

National Capital Planning Commission

401 9th Street, NW North Lobby, Suite 500 Washington, DC 20004 Tel 202.482.7200 Fax 202.482.7272 www.ncpc.gov

IN REPLY REFER TO:
NCPC File No. 7024 / MP060

December 11, 2009

Mr. Christopher J. Burkhardt
Froehling & Robertson, Inc.
Environmental Department Manager
310 Hubert Street
Raleigh, NC 27603

Re: Environmental Assessment for Modernization and Consolidation of Residential and Medical Facilities at the Armed Forces Retirement Home (AFRH-W)

Dear Mr. Burkhardt:

In response to your letter regarding the preparation of an Environmental Assessment (EA) for the modernization and consolidation of residential and medical facilities on the Armed Forces Retirement Home (AFRH-W) campus, located at 3700 North Capitol Street, NW in Washington, DC, the National Capital Planning Commission (NCPC), a cooperating agency, submits the following scoping comments. These comments supplement those provided at our meeting on December 9, 2009.

According to your letter, the general purpose of the project is to consolidate AFRH-W residential and medical operations in the campus core; eliminate duplicate functions that are currently distributed throughout the campus; meet the changing healthcare needs of veterans; and provide facilities that reflect the latest standards and practices in senior housing. According to NCPC's recent site visit to the AFRH-W, and discussions with AFRH-W representatives, these improvements will be generally located on the site of the existing Scott Building. In anticipation of NCPC's review of the project, we request that the following information be included in the scope of the EA.

Alternatives:

In addition to a No Action Alternative, NCPC requests that the EA include the following alternatives:

- Renovation of the existing Scott Building.
- More than one alternative to demolish the Scott Building and construct a new building on that site.

This request is consistent with the comments NCPC provided at the December 9th meeting.

At the December 9th meeting, representatives from AFRH-W, and their design team, described three scenarios for the redevelopment of the Scott Building. In general, these scenarios showed variations of building arrangement, footprint, and height. At the conclusion of the meeting, NCPC indicated a preference for the scenario that did not extend into the viewshed of the Lincoln Cottage, and recommended that this scenario be explored further. In addition to views from the Lincoln Cottage, it was also recommended that in furtherance of this scenario, certain design principles be taken into consideration, including:

- The scale and architectural design of the surrounding buildings;
- Historic alignments of roads and pedestrian pathways; and
- Arrangement of existing buildings on the AFRH-W campus along a north-south axis.

NCPC recommends that AFRH-W incorporate these design principles into each of the redevelopment scenarios that will ultimately be analyzed in the EA.

Analysis:

For each of the alternatives, NCPC requests that the EA analyze the potential direct, indirect, and cumulative impacts of the project on the following topic areas.

- Historic and cultural resources, including impacts on the U.S. Soldiers' and Airmens' Home National Historic Landmark and Historic District, AFRH-W Historic District, and the Lincoln Cottage.
- Land use, including impacts on public access to the Lincoln Cottage during construction.
- Pedestrian and bicycle access and circulation.
- Transportation, including impacts to traffic and parking on the campus and the surrounding neighborhood, both during and at the completion of construction.
- Natural features, including impacts to vegetation, steep slopes, soil erosion, and water resources.
- Views and vistas, with a particular focus on impacts to the views identified in the AFRH-W Master Plan.

These comments have been prepared in accordance with NCPC's Environmental and Historic Policies and Procedures, and reflect the information that NCPC will require to take a final action on the project. According to your letter, the EA "will be a supplement to the Environmental Impact Statement (EIS) that was prepared for the AFRH – Master Plan." To the extent the EA relies upon information contained in the EIS, NCPC requests that this information be included, or concisely referenced, in the EA.

To ensure a full and proper analysis of the proposed project, NCPC requests that the preparation of the EA be coordinated with the following: Advisory Neighborhood Commissions 1A, 4C, and 5C, Councilmember Jim Graham (Ward 1), Councilmember Muriel Bowser (Ward 4), Councilmember Harry Thomas, Jr. (Ward 5), District of Columbia Office of Planning (DCOP), District Department of Transportation (DDOT), District of Columbia State Historic Preservation Office (DC SHPO), U.S. Commission of Fine Arts (CFA), Department of Veterans Affairs Medical Center(VA), and Washington Central Parks.

As a cooperating agency, NCPC appreciates the opportunity to participate in this phase of the EA, and looks forward to continued involvement in the preparation of this document and of the project. If you have any questions about these comments please contact Shane L. Dettman at (202) 482-7267 or shane.dettman@ncpc.gov.

Sincerely,

David W. Levy, RA, AICP
Director, Urban Design and Plan Review Division

cc: Advisory Neighborhood Commission 1A
Advisory Neighborhood Commission 4C
Advisory Neighborhood Commission 5C
Councilmember Jim Graham (Ward 1)
Councilmember Muriel Bowser (Ward 4)
Councilmember Harry Thomas, Jr. (Ward 5)
Thomas Luebke, Secretary, CFA
David Maloney, State Historic Preservation Officer, DC SHPO
Amanda Murphy, NEPA Specialist, GSA-NCR
Karina Ricks, Associate Director (TPPA), DDOT
Harriet Tregoning, Director, DCOP
Mike Dunfee, Assistant Director, VA
Joseph Woo, Architect, AFRH-W
Reyn Anderson, Washington Central Parks

APPENDIX

LIST OF ACRONYMS
HAZARDOUS MATERIALS SURVEY

LIST OF ACRONYMS

• AFRH	Armed Forces Retirement Home (Agency)
• AFRH-W	Armed Forces Retirement Home – Washington (Campus)
• AL	Assisted Living
• BPV	Battery Powered Vehicle
• CAA	Clean Air Act
• CEQ	Council on Environmental Quality
• CFA	Commission of Fine Arts (US)
• CFR	Code of Federal Regulations
• CO	Carbon Monoxide
• dBA	Decibel
• DC	District of Columbia
• DC HPO	District of Columbia Historic Preservation Office
• DCMR	District of Columbia Municipal Regulation
• DCOP	District of Columbia Office of Planning
• EA	Environmental Assessment
• EIS	Environmental Impact Statement
• EISA	Energy Independence and Security Act of 2007
• ELGs	Effluent Limitations Guidelines
• EMC	Environmental Management Commission
• EO	Executive Order
• EPA	Environmental Protection Agency
• F&R	Froehling & Robertson, Inc.
• FEMP	Federal Energy Management Program
• FEMA	Federal Emergency Management Agency
• FHWA	Federal Highway Administration
• FIRM	Flood Insurance Rate Map
• FONSI	Finding of No Significant Impact
• GI/LID	Green Infrastructure/Low Impact Development
• GSA	General Services Administration
• IT	Information Technology
• Leq	Equivalent Sound Level
• Lmax	Maximum Sound Level
• LTC	Long Term Care
• MP	Master Plan
• MS	Memory Support
• NAAQS	National Ambient Air Quality Standards
• NAC	Noise Abatement Criteria
• NCPC	National Capital Planning Commission
• NEPA	National Environmental Policy Act

- NHL National Historic Landmark
- NHPA National Historic Preservation Act
- NO_2 Nitrogen Dioxide
- NPS National Park Service
- NRCS Natural Resources Conservation Service
- NSPS New Source Performance Standards
- NTHP National Trust for Historic Preservation
- NWI National Wetlands Inventory
- O_3 Ozone
- PA Programmatic Agreement
- Pb Lead
- PEPCO Potomac Electric Power Company, Inc.
- PM Particulate Matter
- ROC Record of Conversation
- ROD Record of Decision
- SCS Soil Conservation Service
- SHPO State Historic Preservation Office
- SO_2 Sulfur Dioxide
- US United States (of America)
- USACE US Army Corps of Engineers
- USC US Code
- USDA US Department of Agriculture
- USFWS US Fish and Wildlife Service
- USGS US Geological Survey
- WMATA Washington Metropolitan Area Transit Authority

SINCE 1881

FROEHLING & ROBERTSON, INC.

ENGINEERING • ENVIRONMENTAL • GEOTECHNICAL

7798 WATERLOO ROAD, JESSUP MD 20794 USA

T 443.733.1011 F 443.733.1015

LIMITED HAZARDOUS MATERIALS SURVEY REPORT

The Armed Forces Retirement Home
Scott Building
3700 North Capitol Street
Washington, D.C., 20011

Prepared For:
DiMella Shaffer
Architecture/Interior Design/Planning
281 Summer Street
Boston, MA 02210

Prepared By:
Froehling & Robertson, Inc.
7798 Waterloo Road
Jessup, Maryland 20794

F&R Project Number 68L-0083

October 23, 2009

Prepared By:		Reviewed By:
		
Ousman Auber	Alan Lederman, CHMM	Chris Chapman, CIH
EPA-AHERA Inspector	Group Manager	Senior Project Manager
Environmental Services	Environmental Services	Environmental Services

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APPENDICES

Appendix A – Asbestos Documentation, Laboratory Reports

Appendix B – XRF Data Table
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Appendix C – Site Diagrams

Appendix D – Site Photographs

1.0 Introduction

Froehling and Robertson (F&R) was contracted by DiMella Shaffer to perform a limited, non-destructive hazardous materials survey of the Armed Forces Retirement Home, Scott Building, located at 3700 North Capitol Street, Washington, D.C. The survey was performed by Environmental Protection Agency-Asbestos Hazard Emergency Response Act (EPA-AHERA)-trained asbestos building inspectors, Alan Lederman and Ousman Auber, between October 6th and October 22nd, 2009.

The Scott Building is used as a residential retirement facility. The building contains eight above-grade levels and two subterranean levels (the ground floor and basement) encompassing approximately 357,000 square feet. The basement level contains mechanical equipment such as hot water tanks and air handling units and storage space. The ground floor consists of the dining hall, auditorium and the health center. The main floor (or 1st Floor) contains residential units and the library. The 2nd through 7th floors contain residential units. The 8th floor contains mechanical spaces including the elevator equipment room and air handling units as well as residential units.

Typical interior finishes consist of marble and plaster walls in the hallways, lobby areas, and common areas; 12"x12" vinyl floor tiles in hallways, residential units and common areas; ceramic floor and wall tiles in restrooms, hallways and common areas; carpeting in administrative offices and common areas; sheetrock walls within the residential units and 2'x4' drop ceiling tiles in the hallways. The exterior structure is made of concrete and limestone with a flat roof.

The scope of the hazardous materials survey for the Scott Building consisted of the following items only:

- Non-invasive survey for suspect asbestos-containing materials (ACMs)
- Screening of surface coatings that may contain lead-based paint (LBP)
- Non-invasive Inventory of suspect PCB-containing light ballasts and mercury-containing components

2.0 Asbestos-Containing Material (ACM)

2.1 Methodology

For this project, a non-invasive visual survey and sampling for suspect ACM was conducted at the above referenced site. All samples were collected in general accordance with EPA-AHERA protocols and submitted under chain of custody to EMSL Analytical, Inc. (EMSL) located in Beltsville, Maryland, for analysis. EMSL is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) to analyze suspect asbestos-containing bulk materials. A total of one hundred forty-six (146) bulk samples were collected and analyzed using Polarized Light Microscopy (PLM) via EPA Method 600/R-93/116.

2.2 Results (Refer also to Appendix A for Laboratory Reports)

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
01	**Basement-Hot Water Tank #1**	**Tank Insulation**	**40% Chrysotile**
02	**Basement-Hot Water Tank #1**	**Tank Insulation**	**40% Chrysotile**
03	**Basement-Hot Water Tank #1**	**Tank Insulation**	**40% Chrysotile 35% Amosite**
04	**Basement- Domestic Water Pipes**	**Pipe Insulation**	**30% Amosite**
05	**Basement- Domestic Water Pipes**	**Pipe Insulation**	**30% Amosite**
06	**Basement- Domestic Water Pipes**	**Pipe Insulation**	**30% Amosite**
07	Basement-HVAC Duct	HVAC Mastic	No Asbestos Detected
08	Basement-HVAC Duct	HVAC Mastic	No Asbestos Detected
09	Basement-HVAC Duct	HVAC Mastic	No Asbestos Detected
10	Basement-Water Pipe	Cork Insulation/Mastic Composite	No Asbestos Detected
11	**Basement-AHU #8**	**HVAC Insulation**	**40% Chrysotile**
12	**Basement-AHU #8**	**HVAC Insulation**	**40% Chrysotile**
13	**Basement-AHU #8**	**HVAC Insulation**	**40% Chrysotile**
14	**Basement Wall Adjacent to Chillers**	**Troweled-On Surfacing**	**40% Chrysotile**
15	**Basement-HVAC Duct**	**Cork Insulation/Mastic Composite**	**20% Chrysotile**
16	**Basement-HVAC Duct**	**Cork Insulation/Mastic Composite**	**20% Chrysotile**
17	**Basement-HVAC Duct**	**Cork Insulation/Mastic Composite**	**20% Chrysotile**
18	Basement Wall	Brick Mortar	No Asbestos Detected
19	Basement-Back Tunnel Area	Brown HVAC Insulation	No Asbestos Detected
20	Basement-Back Tunnel Area	Brown HVAC Insulation	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
21	Basement-Back Tunnel Area	Brown HVAC Insulation	No Asbestos Detected
22	Basement-HVAC Duct	Red Seam Sealant	No Asbestos Detected
23	Basement-HVAC Duct	Red Seam Sealant	No Asbestos Detected
24	**Basement-Domestic Water Pipe**	**Pipe Insulation**	**10% Chrysotile**
25	**Basement- Domestic Water Pipe**	**Pipe Insulation**	**10% Chrysotile**
26	**Basement- Domestic Water Pipe**	**Pipe Insulation**	**10% Chrysotile**
27	**Basement-Vault**	**Paperboard Ceiling**	**8% Chrysotile**
28	**Basement- Storm Water Pipe**	**Black Pipe Wrap**	**5% Chrysotile**
29	**Basement- Storm Water Pipe**	**Black Pipe Wrap**	**5% Chrysotile**
30	Basement-HVAC Duct	Yellow Seam Sealant/Wrap-	No Asbestos Detected
31	**Basement-Steam Pipes**	**Calcium-Magnesia Pipe Insulation**	**35% Amosite**
32	**Basement-Steam Pipes**	**Calcium-Magnesia Pipe Insulation**	**35% Amosite**
33	**Basement-Steam Pipes**	**Calcium- Magnesia Pipe Insulation**	**35% Amosite**
34	**Basement-Access Panel Door**	**White Door Insulation**	**35% Chrysotile**
35	Basement-Between Wall & Columns	Black Waterproofing Paper	No Asbestos Detected
36	Basement-Between Wall & Columns	Black Waterproofing Paper	No Asbestos Detected
37	Basement-Storm Water Pipes w/Black Wrapping	Pipe Insulation	No Asbestos Detected
38	Basement-Storm Water Pipes w/Black Wrapping	Pipe Insulation	No Asbestos Detected
39	Basement-Storm Water Pipes w/Black Wrapping Paper	Pipe Insulation	No Asbestos Detected
40	Basement-HVAC Duct	White Duct Seam Sealant	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
41	Basement-HVAC Duct	Black Vibration Dampener Cloth	No Asbestos Detected
42	Basement-HVAC Duct	Brick Mortar	No Asbestos Detected
43	Main Floor-Room 1014	12”x12” Ceiling Tile-Textured	No Asbestos Detected
44	Main Floor-Room 1014	12”X12” Ceiling Tile-Fissured w/Holes	No Asbestos Detected
45	Main Floor-Room 1014	12”x12” Floor Tile-Cream w/Grey Streaks	No Asbestos Detected
45A	Main Floor-Room 1014	Black Vinyl Floor Tile Mastic	No Asbestos Detected
46	Main Floor-Room 1014	12”x12” Floor Tile-Cream w/Grey Streaks	No Asbestos Detected
46A	Main Floor-Room 1014	Black Vinyl Floor Tile Mastic	No Asbestos Detected
47	Main Floor-Room 1014	12”x12” Floor Tile-Cream w/Grey Streaks	No Asbestos Detected
47A	Main Floor-Room 1014	Black Vinyl Floor Tile Mastic	No Asbestos Detected
48	Main Floor Hallway	Covebase Mastic	No Asbestos Detected
49	Main Floor-Room 1014	Ceiling Tile Glue Dots	No Asbestos Detected
50	**Exterior Wall**	**White Caulk**	**3% Chrysotile**
51	**Exterior Wall**	**White Caulk**	**5% Chrysotile**
52	Exterior Wall	Grey Caulk	No Asbestos Detected
53	Ground Floor Roof	Black Roofing Tar	No Asbestos Detected
54	Exterior	Grey Window Caulk	No Asbestos Detected
55	Stairwell Landing- Stairwell #1	Floor Tread-Black w/Silver Dots	No Asbestos Detected
56	Stairwell Landing- East Stairwell	Window Glazing	No Asbestos Detected
57	Auditorium	Sprayed-on Acoustical Surfacing	No Asbestos Detected
58	Auditorium	Sprayed-on Acoustical Surfacing	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
59	Main Floor-Hallway-Zone 1	2'x4' Ceiling Tile-Fissured w/Dots	No Asbestos Detected
60	Main Floor-Hallway-Zone 3	2'x4' Ceiling Tile-Fissured w/Dots	No Asbestos Detected
61	Main Floor-Hallway-Zone 4	2'x4' Ceiling Tile-Fissured w/Dots	No Asbestos Detected
62	Main Floor-Above Drop Ceiling	Ceiling Plaster-Skim Coat	No Asbestos Detected
62A	Main Floor-Above Drop Ceiling	Ceiling Plaster-Scratch Coat	No Asbestos Detected
63	Main Floor-Hallway-Zone 1	2'x4' Ceiling Tile-Dotted	No Asbestos Detected
64	Main Floor-Hallway-Zone 1	Cork HVAC Insulation	No Asbestos Detected
65	Main Floor-Fiberglass Insulated Pipes	Canvas Pipe Wrapping	No Asbestos Detected
66	**7th Floor Elevator Room**	**Vibration Dampener Cloth**	**15% Chrysotile**
67	**7th Floor Hallway-Above Drop Ceiling**	**Pipe Insulation**	**20% Chrysotile**
68	3rd Floor-HVAC Duct	HVAC Seam Sealant	No Asbestos Detected
69	Main Floor-Hallway-Zone 6	12"x12" White Vinyl Floor Tile with Grey Streaks	No Asbestos Detected
69A	Main Floor-Hallway-Zone 6	Black Vinyl Floor Tile Mastic	No Asbestos Detected
70	Main Floor-Hallway-Zone 6	12"x12" White Vinyl Floor Tile with Grey Streaks	No Asbestos Detected
70A	Main Floor-Hallway-Zone 6	Black Vinyl Floor Tile Mastic	No Asbestos Detected
71	Main Floor-Hallway-Zone 6	12"x12" White Vinyl Floor Tile with Grey Streaks	No Asbestos Detected
71A	Main Floor-Hallway-Zone 6	Black Vinyl Floor Tile Mastic	No Asbestos Detected
72	2nd Floor-Hallway-Zone 3	12"x12" Grey Vinyl Floor Tile with White Streaks	No Asbestos Detected
73	4th Floor-Hallway-Zone 5	12"x12" Grey Vinyl Floor Tile with White Streaks	No Asbestos Detected
74	6th Floor-Hallway-Zone 7	12"x12" Grey Vinyl Floor Tile with White Streaks	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
75	Main Floor-Hallway-Zone 4	12”x12” White Vinyl Floor Tile w/Grey and Black Streaks	No Asbestos Detected
75A	Main Floor-Hallway-Zone 4	Black Vinyl Floor Tile Mastic	No Asbestos Detected
76	3rd Floor-Hallway-Zone 5	12”x12” White Vinyl Floor Tile w/Grey and Black Streaks	No Asbestos Detected
76A	3rd Floor-Hallway-Zone 5	Black Vinyl Floor Tile Mastic	No Asbestos Detected
77	5th Floor-Hallway-Zone 7	12”x12” White Vinyl Floor Tile w/Grey & Black Streaks	No Asbestos Detected
77A	5th Floor-Hallway-Zone 7	Black Vinyl Floor Tile Mastic	No Asbestos Detected
78	2nd Floor- Room 2404	12”x12” Green Vinyl Floor Tile with White Streaks	No Asbestos Detected
78A	2nd Floor- Room 2404	Black Vinyl Floor Tile Mastic	No Asbestos Detected
79	2nd Floor- Room 2404	12”x12” Green Vinyl Floor Tile with White Streaks	No Asbestos Detected
79A	2nd Floor- Room 2404	Black Vinyl Floor Tile Mastic	No Asbestos Detected
80	2nd Floor- Room 2404	12”x12” Green Vinyl Floor Tile with White Streaks	No Asbestos Detected
80A	2nd Floor- Room 2404	Black Vinyl Floor Tile Mastic	No Asbestos Detected
81	**Main Floor-Hallway-Zone 2**	**9”x9” Black Vinyl Floor Tile with White Streaks**	**12% Chrysotile**
81A	Main Floor-Hallway-Zone 2	Black Vinyl Floor Tile Mastic	No Asbestos Detected
82	**Main Floor-Hallway-Zone 2**	**9”x9” Black Vinyl Floor Tile with White Streaks**	**12% Chrysotile**
82A	Main Floor-Hallway-Zone 2	Black Vinyl Floor Tile Mastic	No Asbestos Detected
83	**Main Floor-Hallway-Zone 2**	**9”x9” Black Vinyl Floor Tile with White Streaks**	**12% Chrysotile**
83A	Main Floor-Hallway-Zone 2	Black Vinyl Floor Tile Mastic	No Asbestos Detected
84	3rd Floor-Room 3040	12”x12” Brown Vinyl Floor Tile w/Dark Brown Streaks	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
84A	3rd Floor-Room 3040	Black Vinyl Floor Tile Mastic	No Asbestos Detected
85	3rd Floor-Room 3040	12”x12” Brown Vinyl Floor Tile w/Dark Brown Streaks	No Asbestos Detected
85A	3rd Floor-Room 3040	Black Vinyl Floor Tile Mastic	No Asbestos Detected
86	3rd Floor-Room 3040	12”x12” Brown Vinyl Floor Tile w/Dark Brown Streaks	No Asbestos Detected
86A	3rd Floor-Room 3040	Black Vinyl Floor Tile Mastic	No Asbestos Detected
87	2nd Floor-Room 2404	White-Skim Coat Ceiling Plaster	No Asbestos Detected
88	2nd Floor-Room 2404	White-Skim Coat Ceiling Plaster	No Asbestos Detected
89	2nd Floor-Room 2404	White-Skim Coat Ceiling Plaster	No Asbestos Detected
90	Basement-Concrete Column	Black Mastic	No Asbestos Detected
91	Main Floor Hallway	Skim Coat Wall Plaster	No Asbestos Detected
92	Main Floor Hallway	Scratch Coat Wall Plaster	No Asbestos Detected
93	2nd Floor Hallway	Skim Coat Ceiling Plaster	No Asbestos Detected
94	2nd Floor Hallway	Scratch Coat Ceiling Plaster	No Asbestos Detected
95	5th Floor Hallway	Skim Coat Ceiling Plaster	No Asbestos Detected
96	5th Floor Hallway	Scratch Coat Ceiling Plaster	No Asbestos Detected
97	Main Floor-Room 1014	Sheetrock	No Asbestos Detected
98	2nd Floor-Room 2404	Sheetrock	No Asbestos Detected
99	Main Floor-Room 1014	Joint Compound	No Asbestos Detected
100	2nd Floor-Room 2404	Joint Compound	No Asbestos Detected
101	Exterior Front Side	Exterior Window Caulk	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
102	Exterior Front Side	Exterior Window Caulk	No Asbestos Detected
103	Main Floor East Stairwell Landing	Interior Window Caulk	No Asbestos Detected
104	Main Floor East Stairwell Landing	Interior Window Caulk	No Asbestos Detected
105	Main Floor East Stairwell Landing	Interior Window Caulk	No Asbestos Detected
106	1st Floor Hallway	Wall Covering	No Asbestos Detected
107	1st Floor Hallway	Wall Covering	No Asbestos Detected
108	1st Floor Hallway	Wall Covering	No Asbestos Detected
109	Auditorium	Sprayed-on Acoustical Surfacing	No Asbestos Detected
110	Auditorium	Sprayed-on Acoustical Surfacing	No Asbestos Detected
111	Auditorium	Sprayed-on Acoustical Surfacing	No Asbestos Detected
112 (Referred to as Sample #1 in the Laboratory Report #648)	Room 2074	12”x12” Green Vinyl Floor Tile with White Streaks	No Asbestos Detected
113 (Referred to as Sample #2 in the Laboratory Report #648)	Room 2074	Black Floor Tile Mastic	No Asbestos Detected
114 (Referred to as Sample #3 in the Laboratory Report #648)	Room 2074	Joint Compound	No Asbestos Detected
115 (Referred to as Sample #4 in the Laboratory Report)	Room 2074	Vinyl Covebase	No Asbestos Detected
116 (Referred to as Sample #5 in the Laboratory Report #648)	Room 2074	Vinyl Covebase Mastic	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
117 (Referred to as Sample #6 in the Laboratory Report #648)	Room 2074	Skim Coat Ceiling Plaster	No Asbestos Detected
118 (Referred to as Sample #7 in the Laboratory Report #648)	Room 2074	Scratch Coat Ceiling Plaster	No Asbestos Detected
119 (Referred to as Sample #8 in the Laboratory Report #648)	Room 2405	Skim Coat Ceiling Plaster	No Asbestos Detected
120 (Referred to as Sample #9 in the Laboratory Report #648)	Room 2405	Scratch Coat Ceiling Plaster	No Asbestos Detected
121 (Referred to as Sample #10 in the Laboratory Report #648)	Room 2405	Sheetrock	No Asbestos Detected
122 (Referred to as Sample #11 in the Laboratory Report #648)	Room 2405	Joint Compound	No Asbestos Detected
123 (Referred to as Sample #12 in the Laboratory Report #648)	Room 2401	Skim Coat Wall Plaster	No Asbestos Detected
124 (Referred to as Sample #13 in the Laboratory Report #648)	Room 2401	Scratch Coat Wall Plaster	No Asbestos Detected
125 (Referred to as Sample #14 in the Laboratory Report #648)	2nd Floor Hallway	12”x12” Gray Vinyl Floor Tile with White Streaks	No Asbestos Detected
126 (Referred to as Sample #15 in the Laboratory Report #648)	2nd Floor Hallway	Black Floor Tile Mastic	No Asbestos Detected

TABLE 1 ACM LABORATORY RESULTS			
Sample #	**Sample Location**	**Sample Description**	**Analytical Results**
127 (Referred to as Sample #16 in the Laboratory Report #648)	2nd Floor Hallway	2'x4' Ceiling Tile	No Asbestos Detected

2.3 Conclusions and Recommendations

Please see **Table 2** below for a summary of the ACM located within the building.

TABLE 2 ACM SUMMARY					
Sample Description	**Location**	**Estimated Quantity**	**Friable?**	**Condition**	**Asbestos Content**
Hot Water Tank Insulation	Basement Hot Water Tanks	2,000 Square Feet	Yes	Good	40% Chrysotile
Pipe Insulation on Steam Lines and Domestic Water Lines	Throughout Basement, 7th Floor and Vertical Risers Throughout Building	10,000 Linear Feet	Yes	Fair	0-35% Amosite; 0-10% Chrysotile
Air Handling Unit Insulation	Basement and 8th Floor Elevator Room	2,500 Square Feet	Yes	Good	40% Chrysotile
Troweled-On Wall Surfacing Material	Basement	50 Square Feet	Yes	Poor	40% Chrysotile
HVAC Cork Insulation and Mastic	Basement and Main Floor	6,000 Square Feet	No	Good	20% Chrysotile
Paper Board Ceiling	Basement Vault	100 Square Feet	No	Good	8% Chrysotile
Black Pipe Wrap	Basement	200 Linear Feet	No	Good	5% Chrysotile
Fire Door Insulation	Throughout	150 Fire Doors	No	Good	35% Chrysotile
Exterior White Wall Caulk	Exterior Walls	12,000 Linear Feet	No	Good	3-5% Chrysotile
Vibration Dampener Cloth	8th Floor Elevator Room	60 Square Feet	No	Fair	15% Chrysotile
9"x9" Black Vinyl Floor Tile	Main Floor-Zone 2	300 Square Feet	No	Good	12% Chrysotile
Decorative Wall Plaster	Library	5,000 Square Feet	Yes	Good	Presumed ACM
Decorative Ceiling Plaster	Library and Dining Hall	12,500 Square Feet	Yes	Good	Presumed ACM

TABLE 2 ACM SUMMARY					
Sample Description	**Location**	**Estimated Quantity**	**Friable?**	**Condition**	**Asbestos Content**
Roofing Material	Roof	50,000 Square Feet	No	Good	Presumed ACM
Elevator Brake Pads	8th Floor Elevator Room	12 Brake Pads	No	Good	Presumed ACM
Elevator Cab Insulation	Elevators	6 Elevators	No	Unknown	Presumed ACM
Elevator Shaft Wall Panels	Elevator Shafts	Unknown	No	Unknown	Presumed ACM
Pipe Flanges and Gaskets	Throughout	Unknown	No	Unknown	Presumed ACM

F&R offers the following observations in regards to the information presented in **Table 2:**

- Areas behind solid walls and ceilings were inaccessible and could not be visually surveyed for the presence of ACM. ACM including, but not limited to, thermal pipe and pipe fitting insulation is known to exist in those locations, however quantities of materials in these areas could not be verified and as such any quantity given for these materials should be considered an estimate.

- The estimates provided are preliminary and are not meant for contractor bidding purposes. Additional and/or greater quantities of these ACM's may be discovered during renovation/demolition activities. Additional field verification will be needed to confirm these quantities.

- F&R recommends that a more invasive survey be performed prior to the preparation of the project specifications to further identify hidden materials and determine more accurate quantities of the materials identified in this survey.

2.3.1 Non-Friable Asbestos-Containing Materials

Paperboard Ceiling - 8% Chrysotile

Asbestos was detected in a sample of the paperboard ceiling. This material is classified as non-friable asbestos and was generally in poor condition in the areas observed. F&R recommends that all similar material be assumed to be asbestos-containing.

Exterior Wall Caulk – 3-5% Chrysotile

Asbestos was detected in a sample of exterior wall caulk. This material is classified as non-friable asbestos and was generally in good condition in the areas observed. F&R recommends that all exterior wall caulk be assumed to be asbestos-containing.

Vibration Dampener Cloth – 15% Chrysotile

Asbestos was detected in a sample of vibration dampener cloth. This material is classified as non-friable asbestos and was generally in good condition in the areas observed. F&R recommends that all vibration dampener cloth be assumed to be asbestos-containing.

Pipe Wrap – 5% Chrysotile

Asbestos was detected in a sample of black pipe wrap. This material is classified as non-friable asbestos and was generally in good condition in the areas observed. F&R recommends that all black pipe wrap be assumed to be asbestos-containing.

9”x9” Vinyl Floor Tile – 12% Chrysotile

Asbestos was detected in a sample of black 9”x9” floor tile. This material is classified as non-friable asbestos and was generally in good condition in the areas observed. F&R recommends that all 9”x9” vinyl floor tiles be assumed to be asbestos-containing.

2.3.2 Friable Asbestos Containing Materials

Hot Water Tank Insulation - 40% Chrysotile

Asbestos was detected in a sample of hot water tank insulation. This material is classified as friable asbestos and was generally in good condition in the areas observed. F&R recommends that all non-fiberglass tank insulation be assumed to be asbestos-containing.

Hot Water Line Pipe Insulation - 30% Amosite

Asbestos was detected in a sample of pipe insulation on hot water lines. This material is classified as friable asbestos and was generally in fair condition in the areas observed. F&R recommends that all non-fiberglass pipe insulation be assumed to be asbestos-containing.

Air Handling Unit (AHU) Insulation - 40% Chrysotile

Asbestos was detected in a sample of air handling unit (AHU) insulation. This material is classified as friable asbestos and was generally in good condition in the areas observed. F&R recommends that all non-fiberglass AHU insulation be assumed to be asbestos-containing.

Troweled-On Surfacing Material- 40% Chrysotile

Asbestos was detected in a sample of troweled-on surfacing material. This material is classified as friable asbestos and was generally in poor condition in the areas observed. F&R recommends that all similar material be assumed to be asbestos-containing.

Steam Line Pipe insulation - 35% Amosite

Asbestos was detected in a sample of steam line pipe insulation. This material is classified as friable asbestos and was generally in good condition in the areas observed. F&R recommends that all non-fiberglass pipe insulation be assumed to be asbestos-containing.

Air Cell Pipe Insulation - 10% Chrysotile

Asbestos was detected in a sample of air cell pipe insulation on various types of water lines. This material is classified as friable asbestos and was generally in good condition in the areas observed. F&R recommends that all non-fiberglass pipe insulation be assumed to be asbestos-containing.

Fire Door Insulation - 35% Chrysotile

Asbestos was detected in a sample of fire door insulation. The insulation is classified as friable asbestos. The fire doors were generally in good condition in the areas observed. F&R recommends that all fire doors (wood & metal) be assumed to contain asbestos-containing insulation.

2.3.3 Presumed Asbestos-Containing Materials (PACM)

F&R recommends that the decorative wall plaster observed in the Library be assumed to be asbestos-containing until sampling determines otherwise.

F&R recommends that the decorative ceiling plaster observed in the Library and Dining Hall be assumed to be asbestos-containing until sampling determines otherwise.

- F&R recommends that the elevator brake pads, elevator cab insulation and elevator shaft wall panels be assumed to be asbestos-containing until sampling determines otherwise.
- F&R recommends all roofing material/exterior materials be considered to be asbestos-containing until sampling determines otherwise.
- F&R recommends that all pipe/tank/mechanical equipment flanges and gaskets be considered to be asbestos-containing until sampling determines otherwise.

2.4 Applicable Regulations

EPA/NESHAP Regulations for Asbestos-Containing Materials

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

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

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

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

Category II Non-friable ACM – Any non-friable material, excluding Category I Non-friable ACM containing more than 1% asbestos.

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

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

Under NESHAP, the following actions are required:

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

3.0 Lead-Based Paint

3.1 Methodology

A lead-based paint (LBP) screening was performed to test a representative number of painted surfaces for the presence of lead. The testing was conducted by using a Niton XL-309 X-Ray Fluorometer (XRF) Lead Paint Analyzer. The XRF contains a small radioisotopic source and operates on the principle of x-ray fluorescence, whereby lead atoms in paint are stimulated to emit characteristic x-rays, which are then detected by the instrument. The XRF can measure surface or non-surface concentrations of lead with 95% accuracy at the District of Columbia action level of 0.7 mg/cm^2. Levels of lead are reported in units of milligrams per square centimeter (mg/cm^2). The XRF is able to accurately detect as little as 0.1 mg/cm^2 of lead. The XRF classifies painted surfaces as “positive” or “negative” for lead content based

on the District of Columbia action level (0.7 mg/cm^2) and the performance characteristics of the XRF.

Positive: Lead is present at or above the District of Columbia action level of 0.7 mg/cm^2 on *one or more* layers of paint on a specific component.

Negative: Lead is not present at or above the District of Columbia action level of 0.7 mg/cm^2 in any layer of paint on a specific component.

The survey was conducted using the methodology recommended by the U.S. EPA/Department of Housing and Urban Development (HUD). It is important to note that this survey was not a comprehensive, surface-by-surface evaluation, but rather a screening survey of major painted components, which may contain LBP.

3.2 Results

A total of 86 readings were taken as part of this survey. Based on the results of this survey the following surfaces should be assumed to contain LBP or lead-based glazing (defined as having a concentration above the District of Columbia action level of 0.7 milligrams per square centimeter):

Glazing on Ceramic Bath Tubs

Caution Paint on Concrete Floors

Paint on Stairwell Treads

The remainder of the painted surfaces within the building should be assumed to contain lead-containing paint (paint with detectable lead concentrations but below the District of Columbia action level). Reference the attached XRF Data Table for a complete list of sampled components and results.

3.3 Applicable Regulations and Recommendations

OSHA Regulations for Lead Based Paint

Positive and negative results are based on the US Department of Housing and Urban Development Guidelines. It is important to note that even if a component is negative based on the District of Columbia standard, it may still contain concentrations of lead in the paint, which when disturbed, may generate lead dust greater than the Permissible Exposure Limit (PEL) of 50 micrograms per cubic millimeter (ug/m^3) as an 8-hour Time Weighted Average (TWA) 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). Each employer who has an operation covered by this standard shall determine if any employee may be exposed to lead at or above the Action Level of 30 ug/m^3 as an 8-hour TWA through performing a Negative Exposure Assessment (NEA). Exposure above the Action Level is permitted, however the Action Level initiates required medical monitoring.

4.0 PCBs

4.1 Methodology

Light ballasts are the electrical components attached to fluorescent light fixtures usually found under a metal cover plate. Prior to 1978, ballasts were commonly manufactured with polychlorinated biphenyls (PCBs). PCBs were used in fluorescent light ballasts because of their electrical insulating properties. Ballasts made after 1978 are usually marked "Non-PCB." F&R conducted a visual non-invasive survey to identify if the “Non-PCB” label was present on ballasts throughout the building.

4.2 Results

F&R observed fluorescent lighting fixtures throughout the building and inspected a representative number for the “Non-PCB” label. F&R did not observe the “Non-PCB” label on any of the ballasts inspected. During F&R’s inspection, approximately 450 light fixtures containing approximately 900 light ballasts were observed throughout the building. These light ballasts are assumed to be PCB-containing.

4.3 Recommendations

F&R recommends that all fluorescent light ballasts fixtures in the building that do not contain the “Non-PCB” label be assumed to contain PCBs. Ballasts with a clearly marked “Non-PCB” are not regulated and can be disposed of with general construction and demolition debris. The light fixtures without the “Non-PCB” labeling should be removed, disposed of and/or recycled according to Federal and District of Columbia hazardous waste disposal guidelines, by an appropriately licensed/certified contractor.

5.0 Mercury-Containing Components

5.1 Methodology

Mercury is used in several building components including fluorescent lamps, thermostats and thermometers. F&R conducted a visual non-invasive survey to identify mercury-containing components throughout the building.

5.2 Results

During this survey, F&R personnel observed approximately one thousand and fifty (1,050) fluorescent lamps throughout the building and thirty (30) high intensity discharge (HID) lamps in the dining hall, auditorium and other common areas. F&R observed five (5) thermometers associated with the HVAC

equipment in the basement that are suspected to contain mercury. No thermostats suspected to contain mercury were identified during this survey.

5.3 Recommendations

F&R recommends that all fluorescent and HID lamps be presumed to contain mercury. Quantities of mercury-containing thermometers in addition to those observed by F&R may exist within the building. There may also be mercury-containing thermostats within the building that were not observed by F&R. F&R recommends that all non-digital HVAC gauges, thermometers and thermostats within the building be presumed to contain mercury components unless they are specifically labeled otherwise. The mercury-containing building components that are to be impacted as part of renovation/demolition activities should be removed, disposed of and/or recycled according to Federal and District of Columbia hazardous waste disposal guidelines by an appropriately licensed/certified contractor.

6.0 Limitations

This report has been prepared for the exclusive use by DiMella Shaffer and their associates. This service was performed in accordance with Occupational safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) guidelines. No other warranty, expressed or implied, is made.

Our conclusions and recommendations are based, in part, upon information provided to us by others and on our site observations. We have not verified the completeness or accuracy of the information provided by others, unless otherwise noted. 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 non-invasive inspection, accessible areas were visually surveyed for the presence of suspected ACM, LBP, PCB-containing Light Ballasts and Mercury-containing components. Inaccessible areas, such as behind solid walls or above solid ceiling were not surveyed and therefore suspected ACM may be present in those areas. Areas inspected for the above-referenced materials were limited to those designated by the client.

To preserve the integrity of the roof structure, the roof wasn't sampled because sampling may negatively impact the structure and destroys the matrix.

The investigation was based on materials found in building above soil level. Any materials buried underneath the foundation were not accessible and will be considered to be an asbestos containing material until sampling rebuts the assumption.

During this study, suspect material samples were analyzed for asbestos and/or lead. As with any similar survey of this nature, actual conditions exist only at the precise locations from which suspect samples were collected. 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.

Under this scope of services, F&R assumes no responsibility regarding response actions (e.g. O&M Plans, Encapsulation, Abatement, Removal, Notifications, 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 these regulations. Compliance with regulations is the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements, whichever is more stringent. All abatement activities or response actions should be performed by appropriately qualified and licensed-personnel and/or companies, as warranted.

Froehling & Robertson, Inc. by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to 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.

APPENDIX A

ASBESTOS DOCUMENTATION, LABORATORY REPORTS

EMSL Analytical, Inc.
10768 Baltimore Avenue, Beltsville, MD 20705
Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

Attn: **Ousman Auber**
Froehling & Robertson
7798 Waterloo Road
Jessup, MD 20794

Fax: (443) 733-1015 Phone: (443) 733-1011
Project: **ARMED FORCES RETIREMENT HOME - 68L0083**

Customer ID: FROE62
Customer PO:
Received: 10/12/09 4:30 PM
EMSL Order: 190909749

EMSL Proj:
Analysis Date: 10/13/2009

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

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1 *190909749-0001*	BOILER INS	Gray Fibrous Heterogeneous		60% Non-fibrous (other)	**40% Chrysotile**
2 *190909749-0002*	BOILER INS	Brown/Gray Fibrous Heterogeneous		60% Non-fibrous (other)	**40% Chrysotile**
3 *190909749-0003*	BOILER INS	Brown/Gray Fibrous Heterogeneous		55% Non-fibrous (other)	**30% Chrysotile** **15% Amosite**
4 *190909749-0004*	PIPE INS	Fibrous Heterogeneous		70% Non-fibrous (other)	**30% Amosite**
5 *190909749-0005*	PIPE INS	White Fibrous Heterogeneous		70% Non-fibrous (other)	**30% Amosite**
6 *190909749-0006*	PIPE INS	White Fibrous Heterogeneous		70% Non-fibrous (other)	**30% Amosite**
7 *190909749-0007*	HVAC DUCT MSTC	Brown/White Fibrous Heterogeneous	30% Cellulose	70% Non-fibrous (other)	**None Detected**

Analyst(s)

Alexis Turner (42)

Joe Centifonti, Laboratory Manager
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

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Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

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			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
8 *190909749-0008*	HVAC DUCT MSTC	Brown/White Fibrous Heterogeneous	35%	Cellulose	65%	Non-fibrous (other)		**None Detected**
9 *190909749-0009*	HVAC DUCT MSTC	Brown/White Fibrous Heterogeneous	35%	Cellulose	65%	Non-fibrous (other)		**None Detected**
10 *190909749-0010*	CORK INS - ON PIPE	Brown/Black Non-Fibrous Heterogeneous			100%	Non-fibrous (other)		**None Detected**
11 *190909749-0011*	AIR HANDLING UNIT - INS	Gray/White Fibrous Heterogeneous			60%	Non-fibrous (other)	**40%**	**Chrysotile**
12 *190909749-0012*	AIR HANDLING UNIT - INS	Gray/White Fibrous Heterogeneous			60%	Non-fibrous (other)	**40%**	**Chrysotile**
13 *190909749-0013*	AIR HANDLING UNIT - INS	Gray/White Fibrous Heterogeneous			60%	Non-fibrous (other)	**40%**	**Chrysotile**
14 *190909749-0014*	TROWELED-ON PATCH - ON WALL	Gray Fibrous Heterogeneous			60%	Non-fibrous (other)	**40%**	**Chrysotile**

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Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
15 *190909749-0015*	HVAC CORK INS & MSTC	Brown/Black Fibrous Heterogeneous		80% Non-fibrous (other)	**20% Chrysotile**
16 *190909749-0016*	HVAC CORK INS & MSTC	Brown/Black Fibrous Heterogeneous		80% Non-fibrous (other)	**20% Chrysotile**
17 *190909749-0017*	HVAC CORK INS & MSTC	Brown/White Fibrous Heterogeneous		80% Non-fibrous (other)	**20% Chrysotile**
18 *190909749-0018*	BRICK MORTAR - GRAY UNPAINTED BRICKS	Cream Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
19 *190909749-0019*	HVAC DUCT INS - LT BRN	Gray Fibrous Homogeneous	100% Glass	0% Non-fibrous (other)	**None Detected**
20 *190909749-0020*	HVAC DUCT INS - LT BRN	Gray Fibrous Homogeneous	100% Glass	0% Non-fibrous (other)	**None Detected**
21 *190909749-0021*	HVAC DUCT INS - LT BRN	Yellow Fibrous Homogeneous	100% Glass	0% Non-fibrous (other)	**None Detected**

Analyst(s)

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Joe Centifonti, Laboratory Manager
or other approved signatory

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Jessup, MD 20794

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Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
22 *190909749-0022*	HVAC JOINT SEAM SEALANT - RED	Red Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
23 *190909749-0023*	HVAC JOINT SEAM SEALANT - RED	Red Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
24 *190909749-0024*	AIR CELL INS - PIPE - WHT	Gray Fibrous Heterogeneous		90% Non-fibrous (other)	**10% Chrysotile**
25 *190909749-0025*	AIR CELL INS - PIPE - WHT	Gray Fibrous Heterogeneous		90% Non-fibrous (other)	**10% Chrysotile**
26 *190909749-0026*	AIR CELL INS - PIPE - WHT	Gray Fibrous Heterogeneous		90% Non-fibrous (other)	**10% Chrysotile**
27 *190909749-0027*	PAPER BOARD INS - TAR PAPER - BLK/GOLD	Black/Silver Fibrous Heterogeneous		92% Non-fibrous (other)	**8% Chrysotile**
28 *190909749-0028*	PIPE WRAP - BLK	Black Fibrous Heterogeneous		95% Non-fibrous (other)	**5% Chrysotile**

Analyst(s)

Alexis Turner (42)

Joe Centifonti, Laboratory Manager
or other approved signatory

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Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
29 *190909749-0029*	PIPE WRAP - BLK	Black Fibrous Heterogeneous			95%	Non-fibrous (other)	**5%**	**Chrysotile**
30 *190909749-0030*	HVAC SEAM WRAP - YELLOW	Gray Fibrous Heterogeneous	100%	Cellulose	0%	Non-fibrous (other)	**None Detected**	
31 *190909749-0031*	PIPE INS - GRAY STEAM LINES - WHT	White Fibrous Heterogeneous			65%	Non-fibrous (other)	**35%**	**Amosite**
32 *190909749-0032*	PIPE INS - GRAY STEAM LINES - WHT	White Fibrous Heterogeneous			65%	Non-fibrous (other)	**35%**	**Amosite**
33 *190909749-0033*	PIPE INS - GRAY STEAM LINES - WHT	White Fibrous Heterogeneous			65%	Non-fibrous (other)	**35%**	**Amosite**
34 *190909749-0034*	ACCESS PANEL INS - FIRE DOOR	Gray Fibrous Heterogeneous			65%	Non-fibrous (other)	**35%**	**Chrysotile**
35 *190909749-0035*	WATERPROOFING INS - BLK	Black Fibrous Heterogeneous	70%	Cellulose	30%	Non-fibrous (other)	**None Detected**	

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or other approved signatory

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Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

Attn: **Ousman Auber**
Froehling & Robertson
7798 Waterloo Road
Jessup, MD 20794

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
36 *190909749-0036*	WATERPROOFING INS - BLK	Black Fibrous Heterogeneous	70%	Cellulose	30%	Non-fibrous (other)	**None Detected**
37 *190909749-0037*	PIPE INS - STORM WATER LINES - WHT	Gray/Black Fibrous Heterogeneous	45%	Glass	55%	Non-fibrous (other)	**None Detected**
38 *190909749-0038*	PIPE INS - STORM WATER LINES - WHT	Gray/Black Fibrous Heterogeneous	45%	Glass	55%	Non-fibrous (other)	**None Detected**
39 *190909749-0039*	PIPE INS - STORM WATER LINES - WHT	Gray/Black Fibrous Heterogeneous	45%	Glass	55%	Non-fibrous (other)	**None Detected**
40 *190909749-0040*	HVAC DUCT SEAM SEALANT - WHT	Cream Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
41 *190909749-0041*	VIBRATION DAMPENER CLOTH - BLK	White/Black Fibrous Heterogeneous	80%	Glass	20%	Non-fibrous (other)	**None Detected**
42 *190909749-0042*	BRICK MORTAR - PAINTED BRICKS - WHT	Gray Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**

Analyst(s)

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Samples analyzed by EMSL Analytical, Inc. Beltsville 10768 Baltimore Avenue, Beltsville MD NVLAP Lab Code 200293-0

EMSL Analytical, Inc.
10768 Baltimore Avenue, Beltsville, MD 20705
Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

Attn: **Ousman Auber**
Froehling & Robertson
7798 Waterloo Road
Jessup, MD 20794

Fax: (443) 733-1015 Phone: (443) 733-1011
Project: **ARMED FORCES RETIREMENT HOME**

Customer ID: FROE62
Customer PO:
Received: 10/14/09 12:02 PM
EMSL Order: 190909824

EMSL Proj:
Analysis Date: 10/15/2009

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

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
43 *190909824-0001*	12X12 CT - TEXTURED - WHT	White Fibrous Heterogeneous	15%	Glass	85%	Non-fibrous (other)	**None Detected**
44 *190909824-0002*	12X12 CT - FISSURED W/ HOLES - WHT	Beige Fibrous Heterogeneous	40% 50%	Cellulose Glass	10%	Non-fibrous (other)	**None Detected**
45-Floor Tile *190909824-0003*	12X12 FT - CREAM W/ GRAY STREAKS	Beige Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
45-Mastic *190909824-0003A*	12X12 FT - CREAM W/ GRAY STREAKS	Black Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
46-Floor Tile *190909824-0004*	12X12 FT - CREAM W/ GRAY STREAKS	Beige Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
46-Mastic *190909824-0004A*	12X12 FT - CREAM W/ GRAY STREAKS	Black Non-Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
47-Floor Tile *190909824-0005*	12X12 FT - CREAM W/ GRAY STREAKS	Beige Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**

Analyst(s)

Alexis Turner (5)
Emily Baker (25)

Joe Centifonti, Laboratory Manager
or other approved signatory

EMSL Analytical, Inc.
10768 Baltimore Avenue, Beltsville, MD 20705
Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

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			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
47-Mastic *190909824-0005A*	12X12 FT - CREAM W/ GRAY STREAKS	Black Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
48 *190909824-0006*	COVE BASE MASTIC	Yellow/Green Non-Fibrous Heterogeneous	2%	Cellulose	98% Non-fibrous (other)	**None Detected**
49 *190909824-0007*	MASTIC CEIL DOTS - UNDER 12X12 FT	Brown Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
50 *190909824-0008*	EXT WALL CAULK - WHT	White Non-Fibrous Heterogeneous			97% Non-fibrous (other)	**3% Chrysotile**
51 *190909824-0009*	EXT WALL CAULK - WHT	White Non-Fibrous Heterogeneous			95% Non-fibrous (other)	**5% Chrysotile**
52 *190909824-0010*	EXT WALL CAULK - GRAY	Gray Non-Fibrous Heterogeneous	15%	Cellulose	85% Non-fibrous (other)	**None Detected**
53 *190909824-0011*	TAR - ROOFING MAT - BLK	Brown/Black Non-Fibrous Heterogeneous	25%	Cellulose	75% Non-fibrous (other)	**None Detected**

Analyst(s)

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**		**% Type**
54 *190909824-0012*	EXT WINDOW CAULK - CREAM	Brown Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
55 *190909824-0013*	STAIRWELL TREAD - BLK W/ SILVER DOTS	Black/Silver Fibrous Heterogeneous	8% 2%	Synthetic Cellulose	90%	Non-fibrous (other)	**None Detected**
56 *190909824-0014*	WINDOW GLAZING - GRAY	Gray Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
57 *190909824-0015*	SPRAYED-ON MAT - ACOUSTICAL - WHT	White Non-Fibrous Heterogeneous	90%	Cellulose	10%	Non-fibrous (other)	**None Detected**
58 *190909824-0016*	SPRAYED-ON MAT - ACOUSTICAL - WHT	White Fibrous Heterogeneous	90%	Cellulose	10%	Non-fibrous (other)	**None Detected**
59 *190909824-0017*	2X4 CT - FISSURED W/ DOTS (OLD)	Brown/White Fibrous Heterogeneous	50% 10%	Cellulose Glass	10% 30%	Non-fibrous (other) Perlite	**None Detected**
60 *190909824-0018*	2X4 CT - FISSURED W/ DOTS (OLD)	Brown/White Fibrous Heterogeneous	60% 5%	Cellulose Glass	5% 30%	Non-fibrous (other) Perlite	**None Detected**

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10768 Baltimore Avenue, Beltsville, MD 20705
Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

Attn: **Ousman Auber**
Froehling & Robertson
7798 Waterloo Road
Jessup, MD 20794

Fax: (443) 733-1015 Phone: (443) 733-1011
Project: **ARMED FORCES RETIREMENT HOME**

Customer ID: FROE62
Customer PO:
Received: 10/14/09 12:02 PM
EMSL Order: 190909824

EMSL Proj:
Analysis Date: 10/15/2009

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

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
61 *190909824-0019*	2X4 CT - FISSURED W/ DOTS (OLD)	Gray/White Fibrous Heterogeneous	45% 35%	Cellulose Min. Wool	20%	Non-fibrous (other)	**None Detected**
62-Skim Coat *190909824-0020*	CEIL PLSTR - (WHT & BRN) SKIM & ROUGH COATS	White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
62-Base Coat *190909824-0020A*	CEIL PLSTR - (WHT & BRN) SKIM & ROUGH COATS	Brown Fibrous Heterogeneous	8%	Cellulose	52% 40%	Non-fibrous (other) Quartz	**None Detected**
63 *190909824-0021*	2X4 CT - DOTTED - WHT	Brown/White Fibrous Heterogeneous	65% 5%	Cellulose Glass	5% 25%	Non-fibrous (other) Perlite	**None Detected**
64 *190909824-0022*	CORK INS - BRN - ON HVAC	Brown Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
65 *190909824-0023*	CANVAS WRAPPING - WHT	White/Cream Non-Fibrous Heterogeneous	80%	Synthetic	20%	Non-fibrous (other)	**None Detected**
66 *190909824-0024*	VIBRATION DAMPENER CLOTH - BLK	Brown Fibrous Heterogeneous	60%	Cellulose	25%	Non-fibrous (other)	**15% Chrysotile**

Analyst(s)

Alexis Turner (5)
Emily Baker (25)

Joe Centifonti, Laboratory Manager
or other approved signatory

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			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
67 *190909824-0025*	PIPE 9TSI) INS - WHT/BRN	Brown/White Fibrous Heterogeneous	40%	Cellulose	25% 15%	Non-fibrous (other) Mica	**20%**	**Chrysotile**
68 *190909824-0026*	SEAM SEALANT - HVAC DUCT - DK BRN	Brown/Silver Non-Fibrous Heterogeneous	15%	Cellulose	85%	Non-fibrous (other)	**None Detected**	

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Alexis Turner (5)
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or other approved signatory

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10768 Baltimore Avenue, Beltsville, MD 20705
Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
69-Floor Tile *190909944-0001*	12X12 FT - WHT W/ GRAY STREAKS	Gray/White Non-Fibrous Heterogeneous		35% Non-fibrous (other) 65% Ca Carbonate	**None Detected**
69-Mastic *190909944-0001A*	12X12 FT - WHT W/ GRAY STREAKS	Brown/Black Fibrous Heterogeneous	3% Cellulose	97% Non-fibrous (other)	**None Detected**
70-Floor Tile *190909944-0002*	12X12 FT - WHT W/ GRAY STREAKS	Gray/White Non-Fibrous Heterogeneous		35% Non-fibrous (other) 65% Ca Carbonate	**None Detected**
70-Mastic *190909944-0002A*	12X12 FT - WHT W/ GRAY STREAKS	Brown/Black Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	**None Detected**
71-Floor Tile *190909944-0003*	12X12 FT - WHT W/ GRAY STREAKS	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
71-Mastic *190909944-0003A*	12X12 FT - WHT W/ GRAY STREAKS	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
72-Tile Only *190909944-0004*	12X12 FT - GRAY W/ WHT STREAKS	Gray/White Non-Fibrous Heterogeneous		35% Non-fibrous (other) 65% Ca Carbonate	**None Detected**

No Mastic!

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Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
73-Tile Only *190909944-0005*	12X12 FT - GRAY W/ WHT STREAKS	Gray/White Non-Fibrous Heterogeneous	No Mastic!	35% Non-fibrous (other) 65% Ca Carbonate	**None Detected**
74 *190909944-0006*	12X12 FT - GRAY W/ WHT STREAKS	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
75-Floor Tile *190909944-0007*	12X12 FT - WHT W/ GRAY/BLK STREAKS	Gray/White/Black Non-Fibrous Heterogeneous		40% Non-fibrous (other) 60% Ca Carbonate	**None Detected**
75-Mastic *190909944-0007A*	12X12 FT - WHT W/ GRAY/BLK STREAKS	Yellow/Cream Fibrous Heterogeneous	8% Cellulose 3% Synthetic	89% Non-fibrous (other)	**None Detected**
76-Floor Tile *190909944-0008*	12X12 FT - WHT W/ GRAY/BLK STREAKS	Gray/White/Black Non-Fibrous Heterogeneous		40% Non-fibrous (other) 60% Ca Carbonate	**None Detected**
76-Mastic *190909944-0008A*	12X12 FT - WHT W/ GRAY/BLK STREAKS	Yellow/Cream Fibrous Heterogeneous	3% Cellulose 2% Synthetic	95% Non-fibrous (other)	**None Detected**
77-Floor Tile *190909944-0009*	12X12 FT - WHT W/ GRAY/BLK STREAKS	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

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Froehling & Robertson
7798 Waterloo Road
Jessup, MD 20794

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
77-Mastic *190909944-0009A*	12X12 FT - WHT W/ GRAY/BLK STREAKS	Yellow Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
78-Floor Tile *190909944-0010*	12X12 FT - GRN W/ WHT STREAKS	White/Green Non-Fibrous Heterogeneous		35% Non-fibrous (other) 65% Ca Carbonate	**None Detected**
78-Mastic *190909944-0010A*	12X12 FT - GRN W/ WHT STREAKS	Yellow Fibrous Heterogeneous	2% Cellulose 3% Synthetic	95% Non-fibrous (other)	**None Detected**
79-Floor Tile *190909944-0011*	12X12 FT - GRN W/ WHT STREAKS	White/Green Non-Fibrous Heterogeneous		35% Non-fibrous (other) 65% Ca Carbonate	**None Detected**
79-Mastic *190909944-0011A*	12X12 FT - GRN W/ WHT STREAKS	Yellow Fibrous Heterogeneous	2% Cellulose 5% Synthetic	93% Non-fibrous (other)	**None Detected**
80-Floor Tile *190909944-0012*	12X12 FT - GRN W/ WHT STREAKS	Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
80-Mastic *190909944-0012A*	12X12 FT - GRN W/ WHT STREAKS	Yellow Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
81-Floor Tile *190909944-0013*	9X9 FT - BLK W/ WHT STREAKS	White/Black Fibrous Heterogeneous	3% Cellulose	55% Non-fibrous (other) 30% Ca Carbonate	**12% Chrysotile**
81-Mastic *190909944-0013A*	9X9 FT - BLK W/ WHT STREAKS	Brown/Black Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	**None Detected**
82-Floor Tile *190909944-0014*	9X9 FT - BLK W/ WHT STREAKS	White/Black Fibrous Heterogeneous	3% Cellulose	55% Non-fibrous (other) 30% Ca Carbonate	**12% Chrysotile**
82-Mastic *190909944-0014A*	9X9 FT - BLK W/ WHT STREAKS	Brown/Black Fibrous Heterogeneous	10% Cellulose 3% Synthetic	87% Non-fibrous (other)	**None Detected**
83-Floor Tile *190909944-0015*	9X9 FT - BLK W/ WHT STREAKS	Black Non-Fibrous Heterogeneous		88% Non-fibrous (other)	**12% Chrysotile**
83-Mastic *190909944-0015A*	9X9 FT - BLK W/ WHT STREAKS	Black Non-Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	**None Detected**
84-Floor Tile *190909944-0016*	12X12 FT - BRN W/ DK BRN STREAKS	Brown/Orange Non-Fibrous Heterogeneous	2% Cellulose	38% Non-fibrous (other) 60% Ca Carbonate	**None Detected**

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George Malone (25)

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			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
84-Mastic *190909944-0016A*	12X12 FT - BRN W/ DK BRN STREAKS	Gray/Yellow Fibrous Heterogeneous	5% Cellulose 10% Synthetic		85% Non-fibrous (other)	**None Detected**
85-Floor Tile *190909944-0017*	12X12 FT - BRN W/ DK BRN STREAKS	Brown/Orange Fibrous Heterogeneous	3% Cellulose		37% Non-fibrous (other) 60% Ca Carbonate	**None Detected**
85-Mastic *190909944-0017A*	12X12 FT - BRN W/ DK BRN STREAKS	Gray/Yellow Fibrous Heterogeneous	2% Cellulose 5% Synthetic		93% Non-fibrous (other)	**None Detected**
86-Floor Tile *190909944-0018*	12X12 FT - BRN W/ DK BRN STREAKS	Brown Non-Fibrous Heterogeneous	4% Cellulose		96% Non-fibrous (other)	**None Detected**
86-Mastic *190909944-0018A*	12X12 FT - BRN W/ DK BRN STREAKS	Brown Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
87 *190909944-0019*	CEIL PLSTR - WHT - SKIM COAT	White/Cream Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
88 *190909944-0020*	CEIL PLSTR - WHT - SKIM COAT	White Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
89 *190909944-0021*	CEIL PLSTR - WHT - SKIM COAT	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
90 *190909944-0022*	MSTC - BLK - ON CORK	Brown/Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

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Froehling & Robertson
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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
91 *190910093-0001*	SKIM COAT PLASTER	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
92 *190910093-0002*	SCRATCH COAT PLASTER	Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
93 *190910093-0003*	SKIM COAT PLASTER	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
94 *190910093-0004*	SCRATCH COAT PLASTER	Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
95 *190910093-0005*	SKIM COAT PLASTER	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
96 *190910093-0006*	SCRATCH COAT PLASTER	Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
97 *190910093-0007*	DRYWALL	Brown/Gray Fibrous Heterogeneous	30% Cellulose	70% Non-fibrous (other)	**None Detected**

Analyst(s)

Alexis Turner (21)

Joe Centifonti, Laboratory Manager
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			Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous		% Non-Fibrous	% Type
98 *190910093-0008*	DRYWALL	Brown/Gray Fibrous Heterogeneous	30%	Cellulose	70% Non-fibrous (other)	**None Detected**
99 *190910093-0009*	JOINT COMPOUND	White Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
100 *190910093-0010*	JOINT COMPOUND	White Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
101 *190910093-0011*	EXT WINDOW CAULK	Brown/White Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
102 *190910093-0012*	EXT WINDOW CAULK	Brown/White Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
103 *190910093-0013*	INT WINDOW CAULK	Gray Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
104 *190910093-0014*	INT WINDOW CAULK	Gray Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous		% Non-Fibrous	% Type
105 *190910093-0015*	INT WINDOW CAULK	Gray Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
106 *190910093-0016*	WALL PAPER/CANVAS	White Fibrous Heterogeneous	70%	Cellulose	30% Non-fibrous (other)	**None Detected**
107 *190910093-0017*	WALL PAPER/CANVAS	White Fibrous Heterogeneous	70%	Cellulose	30% Non-fibrous (other)	**None Detected**
108 *190910093-0018*	WALL PAPER/CANVAS	White Fibrous Heterogeneous	70%	Cellulose	30% Non-fibrous (other)	**None Detected**
109 *190910093-0019*	SPRAY-ON ACOUSTICAL MAT	White Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**
110 *190910093-0020*	SPRAY-ON ACOUSTICAL MAT	White Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**
111 *190910093-0021*	SPRAY-ON ACOUSTICAL MAT	White Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**

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EMSL Analytical, Inc.
10768 Baltimore Avenue, Beltsville, MD 20705
Phone: (301) 937-5700 Fax: (301) 937-5701 Email: beltsvillelab@emsl.com

Attn: **Alan Lederman**
Froehling & Robertson
7798 Waterloo Road
Jessup, MD 20794

Fax: (443) 733-1015 Phone: (443) 733-1011
Project: **ARMED FORCES RETIREMENT HOME**

Customer ID: FROE62
Customer PO:
Received: 10/08/09 9:50 AM
EMSL Order: 190909648

EMSL Proj:
Analysis Date: 10/8/2009

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

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
01 *190909648-0001*	12X12 FT W/ WHT STREAKS-RM 2074	Blue Non-Fibrous Heterogeneous	5%	Cellulose	95%	Non-fibrous (other)	**None Detected**
02 *190909648-0002*	MSTC - BLK - RM 2074	Black Non-Fibrous Heterogeneous	5%	Cellulose	95%	Non-fibrous (other)	**None Detected**
03 *190909648-0003*	JOINT COMPOUND - RM 2074	Cream Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
04 *190909648-0004*	VINYL COVE BASE - RM 2074	Gray/Black Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
05 *190909648-0005*	COVE BASE MSTC - RM 2074	Beige Fibrous Heterogeneous	20%	Cellulose	80%	Non-fibrous (other)	**None Detected**
06 *190909648-0006*	SKIM COAT CEIL PLSTR - RM 2074	Cream Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
07 *190909648-0007*	SCRATCH COAT CEIL PLSTR - RM 2074	Tan Non-Fibrous Heterogeneous			45% 55%	Non-fibrous (other) Quartz	**None Detected**

Analyst(s)

Emily Baker (16)

Joe Centifonti, Laboratory Manager
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

Samples analyzed by EMSL Analytical, Inc. Beltsville 10768 Baltimore Avenue, Beltsville MD NVLAP Lab Code 200293-0

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
08 *190909648-0008*	SKIM COAT CEIL PLSTR - RM 2405	White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
09 *190909648-0009*	SCRATCH COAT CEIL PLSTR - RM 2405	Tan Non-Fibrous Heterogeneous	2%	Cellulose	28% 70%	Non-fibrous (other) Quartz	**None Detected**
10 *190909648-0010*	DRYWALL - RM 2405	Tan/Beige Fibrous Heterogeneous	30%	Cellulose	10% 60%	Non-fibrous (other) Gypsum	**None Detected**
11 *190909648-0011*	JOINT COMPOUND - RM 2405	Cream Non-Fibrous Heterogeneous	25%	Cellulose	75%	Non-fibrous (other)	**None Detected**
12 *190909648-0012*	SKIM COAT WALL PLSTR - RM 2401	White/Green Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
13 *190909648-0013*	SCRATCH COAT WALL PLSTR - RM 2401	Tan Non-Fibrous Heterogeneous			30% 70%	Non-fibrous (other) Quartz	**None Detected**
14 *190909648-0014*	12X12 FT - GRAY/WHT STREAKS - 2ND FL HALLWAY	Gray Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**

Analyst(s)

Emily Baker (16)

Joe Centifonti, Laboratory Manager
or other approved signatory

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

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
15 *190909648-0015*	MSTC - 2ND FL HALLWAY	Brown/Black Non-Fibrous Heterogeneous	3% 5%	Cellulose Synthetic	92%	Non-fibrous (other)	**None Detected**
16 *190909648-0016*	2X4 CT - 2ND FL HALLWAY	Brown/White Fibrous Heterogeneous	65% 10%	Cellulose Glass	5% 20%	Non-fibrous (other) Perlite	**None Detected**

Analyst(s)

Emily Baker (16)

Joe Centifonti, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Beltsville 10768 Baltimore Avenue, Beltsville MD NVLAP Lab Code 200293-0

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APPENDIX B

XRF DATA TABLES
EXPLANATION OF XRF DATA

THE ARMED FORCES RETIREMENT HOME

Reading No	Area	Component	Substrate	Condition	Color	Unit	Action Level	PbC	PbC Error	Lead Based Paint Y/N
1		CALIBRATE				mg/cm^2	0.7	0	0.4	N/A
2		CALIBRATE				mg/cm^2	0.7	1.2	0.3	N/A
3		CALIBRATE				mg/cm^2	0.7	1.3	0.4	N/A
4	Basement	Wall	Concrete	Good	White	mg/cm^2	0.7	0	0.02	NO
5	Basement	Centrifugal Chiller-chsc1	Metal	Good	Green	mg/cm^2	0.7	2	1	NO
6	Basement	Centrifugal Chiller-chsc3	Metal	Good	Green	mg/cm^2	0.7	0	0.02	NO
7	Basement	Centrifugal Chiller-chsc2	Metal	Good	Green	mg/cm^2	0.7	0	0.02	NO
8	Basement	Centrifugal Chiller-chsc1	Metal	Good	Green	mg/cm^2	0.7	2.1	1	NO
9	Basement	Sprinkler Valves	Metal	Good	Red	mg/cm^2	0.7	0.1	0.14	NO
10	Basement	Condition Supply Valves	Metal	Good	Blue	mg/cm^2	0.7	0	0.02	NO
11	Basement	Water Pumps-sc01	Metal	Good	Green	mg/cm^2	0.7	0.03	0.07	NO
12	Basement	Condition Supply Valves	Metal	Good	Black	mg/cm^2	0.7	0	0.02	NO
13	Basement	Water Pumps-sc03	Metal	Good	Blue	mg/cm^2	0.7	2.1	1.1	NO
14	Basement	Water Pumps-sc01	Metal	Good	Blue	mg/cm^2	0.7	0.02	0.06	NO
15	Basement	Door	Metal	Good	Black	mg/cm^2	0.7	0	0.02	NO
16	Basement	Column	Concrete	Good	White	mg/cm^2	0.7	0	0.02	NO
17	Basement	Column	Concrete	Good	Grey	mg/cm^2	0.7	0.03	0.07	NO
18	Basement	Elevator Frame	Metal	Good	Orange	mg/cm^2	0.7	0.3	0.36	NO
19	Basement	Fire door	Metal	Good	Grey	mg/cm^2	0.7	0.04	0.07	NO
20	Basement	Fire door frame	Metal	Good	Grey	mg/cm^2	0.7	0.03	0.08	NO
21	**Basement**	**HVAC metal duct**	**Metal**	**Fair**	**Yellow**	**mg/cm^2**	**0.7**	**2.1**	**1.3**	**YES**
22	**Basement**	**HVAC metal duct**	**Metal**	**Fair**	**Black**	**mg/cm^2**	**0.7**	**4.8**	**3.7**	**YES**
23	Basement	Hand rail	Metal	Good	Yellow	mg/cm^2	0.7	0.6	0.1	NO
24	Basement	Overhead Pipes	Metal	Good	Grey	mg/cm^2	0.7	0.03	0.06	NO
25	Basement	Elevator	Metal	Good	Brown	mg/cm^2	0.7	0.16	0.21	NO
26	Ground Floor	Stairwell rail	Metal	Good	Grey	mg/cm^2	0.7	0.12	0.18	NO
27	Ground Floor	Stairwell riser	Metal	Good	Grey	mg/cm^2	0.7	0.02	0.04	NO
28	Ground Floor	Window Frame	Metal	Good	Grey	mg/cm^2	0.7	0.06	0.11	NO
29	Ground Floor	Door	Wood	Good	White	mg/cm^2	0.7	0.4	0.2	NO
30	Ground Floor	Columns	Plaster	Good	Yellow	mg/cm^2	0.7	0.4	0.2	NO
31	Ground Floor	Wall	Plaster	Good	Yellow	mg/cm^2	0.7	0	0.02	NO
32	Ground Floor	Wall	Plaster	Good	Red	mg/cm^2	0.7	0.3	0.12	NO
33	1st Floor	Door	Wood	Good	White	mg/cm^2	0.7	0.03	0.16	NO

THE ARMED FORCES RETIREMENT HOME

Reading No	Area	Component	Substrate	Condition	Color	Unit	Action Level	PbC	PbC Error	Lead Based Paint Y/N
34	1st Floor	Door	Wood	Good	Grey	mg/cm^2	0.7	0.5	0.2	NO
35	**1st Floor**	**Stairwell tread**	**Metal**	**Good**	**Orange**	**mg/cm^2**	**0.7**	**3.9**	**3.1**	**YES**
36	1st Floor	Stairwell riser	Metal	Good	Grey	mg/cm^2	0.7	0.03	0.14	NO
37	2nd Floor	Window frame	Wood	Good	White	mg/cm^2	0.7	0	0.02	NO
38	2nd Floor	Radiator	Metal	Good	White	mg/cm^2	0.7	0.08	0.19	NO
39	Room 2074	Door Frame	Wood	Good	White	mg/cm^2	0.7	0.03	0.03	NO
40	Room 2074	Wall	Plaster	Good	White	mg/cm^2	0.7	0	0.03	NO
41	Room 2074-RR	Wall	Plaster	Good	White	mg/cm^2	0.7	0.01	0.03	NO
42	Room 2074-RR	Wall	Ceramic	Good	Green	mg/cm^2	0.7	0.5	0.01	NO
43	Room 2074-RR	Window Frame	Wood	Good	White	mg/cm^2	0.7	0.02	0.03	NO
44	Room 2074-RR	Radiator cover	Metal	Good	Cream	mg/cm^2	0.7	0	0.03	NO
45	Room 2074-RR	Toilet Bowl	Ceramic	Good	White	mg/cm^2	0.7	0.06	0.02	NO
46	Room 2074-RR	Access Panel	Metal	Good	Grey	mg/cm^2	0.7	0	0.03	NO
47	Room 2074-RR	Ceiling	Drywall	Good	White	mg/cm^2	0.7	0.01	0.03	NO
48	Room 2074-LR	Window Sill	Wood	Good	Cream	mg/cm^2	0.7	0	0.03	NO
49	Room 2074-LR	Window Frame	Wood	Good	Cream	mg/cm^2	0.7	0.02	0.01	NO
50	Room 2074-LR	Sink	Ceramic	Good	Grey	mg/cm^2	0.7	0.01	0.03	NO
51	Room 2074-LR	Ceiling	Drywall	Good	White	mg/cm^2	0.7	0.02	0.07	NO
52	Room 2402	Door	Metal	Good	Grey	mg/cm^2	0.7	0	0.03	NO
53	Room 2402	Door Frame	Metal	Good	Grey	mg/cm^2	0.7	0.02	0.01	NO
54	Room 2400	Wall	Ceramic	Good	Cream	mg/cm^2	0.7	0.16	0.02	NO
55	Room 2400	Floor tread	Cement	Good	Black	mg/cm^2	0.7	0.01	0.03	NO
56	**Room 2400**	**Tub**	**Ceramic**	**Good**	**White**	**mg/cm^2**	**0.7**	**5.3**	**0.03**	**YES**
57	Room 2400	Toilet Bowl	Ceramic	Good	White	mg/cm^2	0.7	0.26	0.02	NO
58	Room 2400	Sink	Ceramic	Good	White	mg/cm^2	0.7	0.02	0.02	NO
59	Room 2401	Door Frame	Metal	Good	Green	mg/cm^2	0.7	0.03	0.01	NO
60	Room 2401	Wall	Plaster	Good	Green	mg/cm^2	0.7	0.04	0.01	NO
61	Room 2401	Baseboard	Ceramic	Good	Green	mg/cm^2	0.7	0.02	0.01	NO
62	2nd Floor	Wall	Plaster	Good	White	mg/cm^2	0.7	0.03	0.01	NO
63	Room 2400	Floor tile	Ceramic	Good	Brown	mg/cm^2	0.7	0.01	0.03	NO
64	Room 2405	Wall	Plastic	Good	Grey	mg/cm^2	0.7	0.01	0.02	NO
65	Room 2405	Door Frame	Grey	Good	Grey	mg/cm^2	0.7	0.03	0.03	NO
66	Room 2405	Door Frame	White	Good	White	mg/cm^2	0.7	0.13	0.02	NO

THE ARMED FORCES RETIREMENT HOME

Reading No	Area	Component	Substrate	Condition	Color	Unit	Action Level	PbC	PbC Error	Lead Based Paint Y/N
67	Room 2407	Window Frame	Cream	Good	Cream	mg/cm^2	0.7	0	0.03	NO
68	Room 2407	Wall	Green	Good	Green	mg/cm^2	0.7	0.4	0.03	NO
69	2nd Floor-RR	Wall	Cream	Good	Cream	mg/cm^2	0.7	0.05	0.01	NO
70	**2nd Floor-RR**	**Tub**	**White**	**Good**	**White**	**mg/cm^2**	**0.7**	**7.3**	**0.01**	**YES**
71	2nd Floor	Door(firedoor)	Grey	Good	Grey	mg/cm^2	0.7	0.05	0.02	NO
72	2nd Floor	Door Frame(firedoor)	Grey	Good	Grey	mg/cm^2	0.7	0.04	0.02	NO
73	2nd Floor	Glazed tile	Yellow	Good	Black	mg/cm^2	0.7	0.03	0.04	NO
74	3rd Floor	Glazed tile	Ceramic	Good	Yellow	mg/cm^2	0.7	0.01	0.03	NO
75	3rd Floor	Glazed tile	Ceramic	Good	Yellow	mg/cm^2	0.7	0.03	0.07	NO
76	3rd Floor	Glazed tile	Ceramic	Good	Yellow	mg/cm^2	0.7	0	0.02	NO
77	3rd Floor	Wall	Plaster	Good	White	mg/cm^2	0.7	0.02	0.05	NO
78	3rd Floor	Door	Metal	Good	Tan	mg/cm^2	0.7	0.03	0.08	NO
79	4th Floor	Wall	Plaster	Good	White	mg/cm^2	0.7	0.05	0.18	NO
80	4th Floor	Glazed tile (3"x3")	Ceramic	Good	Cream	mg/cm^2	0.7	0.2	0.33	NO
81	7th Floor	Door	Metal	Good	Pink	mg/cm^2	0.7	0.09	0.2	NO
82	7th Floor	Door	Metal	Good	Grey	mg/cm^2	0.7	0.16	0.31	NO
83	8th floor	Wall	Plaster	Good	White	mg/cm^2	0.7	0.05	0.07	NO
84		CALIBRATE				mg/cm^2	0.7			N/A
85		CALIBRATE				mg/cm^2	0.7			N/A
86		CALIBRATE				mg/cm^2	0.7			N/A

EXPLANATION OF XRF DATA

The table header displays Inspector's name and license number, XL-309 serial number, the job site location, and sampling date.

Column	Description
Reading No	Consecutive sample numbers assigned by the instrument at testing time.
Site	Testing site location(s).
Component	The major building component being tested.
Substrate	The type of material underlying the painted coating.
Color	Color of the painted or varnished surface.
Result	Result of the test: NEG = negative POS = positive NULL = incomplete test / reading error *There is no inconclusive range for the Niton XL-309.*
Action Level	Concentration of lead defined as lead-based paint.
Pbc	Combined L and K-Shell x-ray readings of lead level.

APPENDIX C

SITE DIAGRAMS

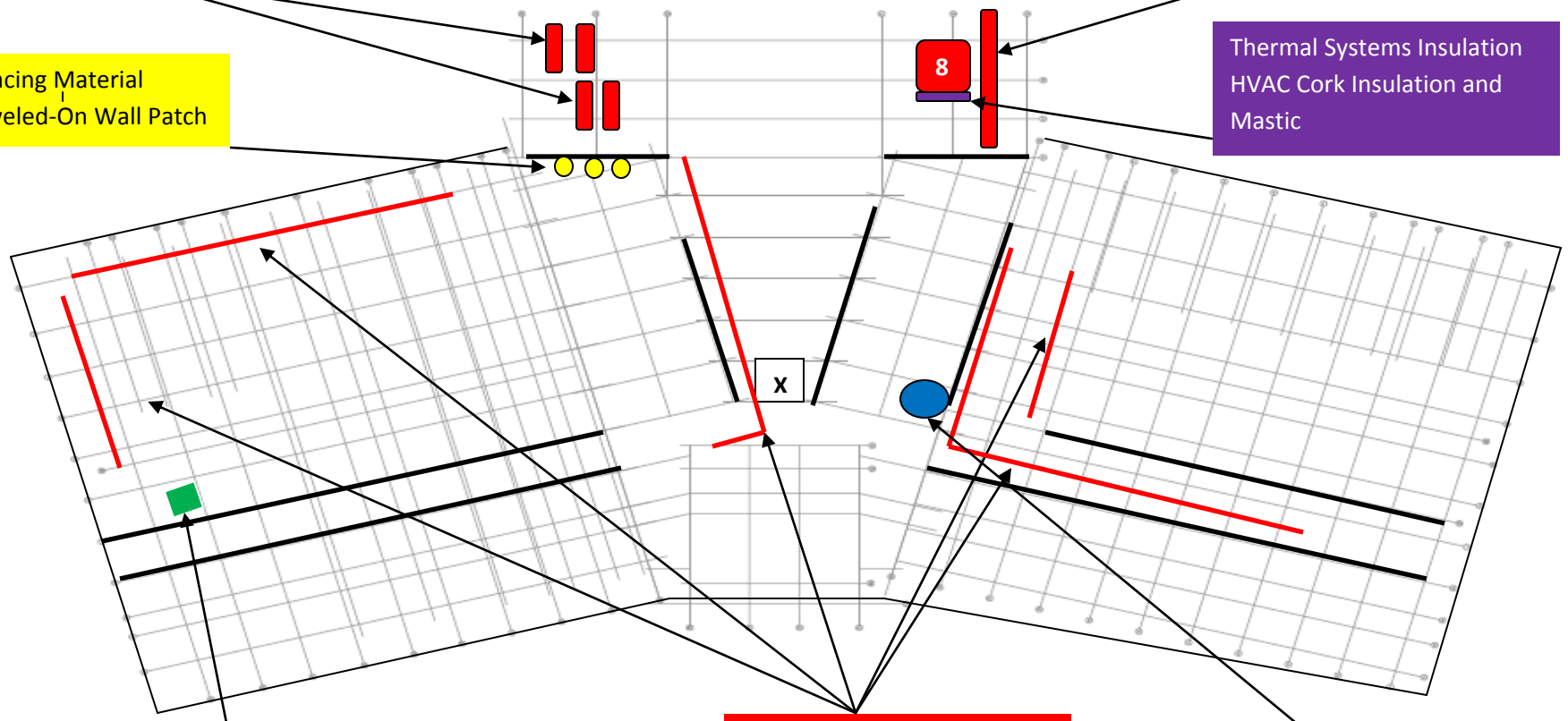
Scott Building – Basement
ACM Locations

Thermal Systems Insulation
Calcium Magnesia
Hot Water Tanks

Thermal Systems Insulation
Calcium Magnesia
Air Handling Unit #8 & Duct

Surfacing Material
Troweled-On Wall Patch

Thermal Systems Insulation
HVAC Cork Insulation and
Mastic



Access Panel Insulation

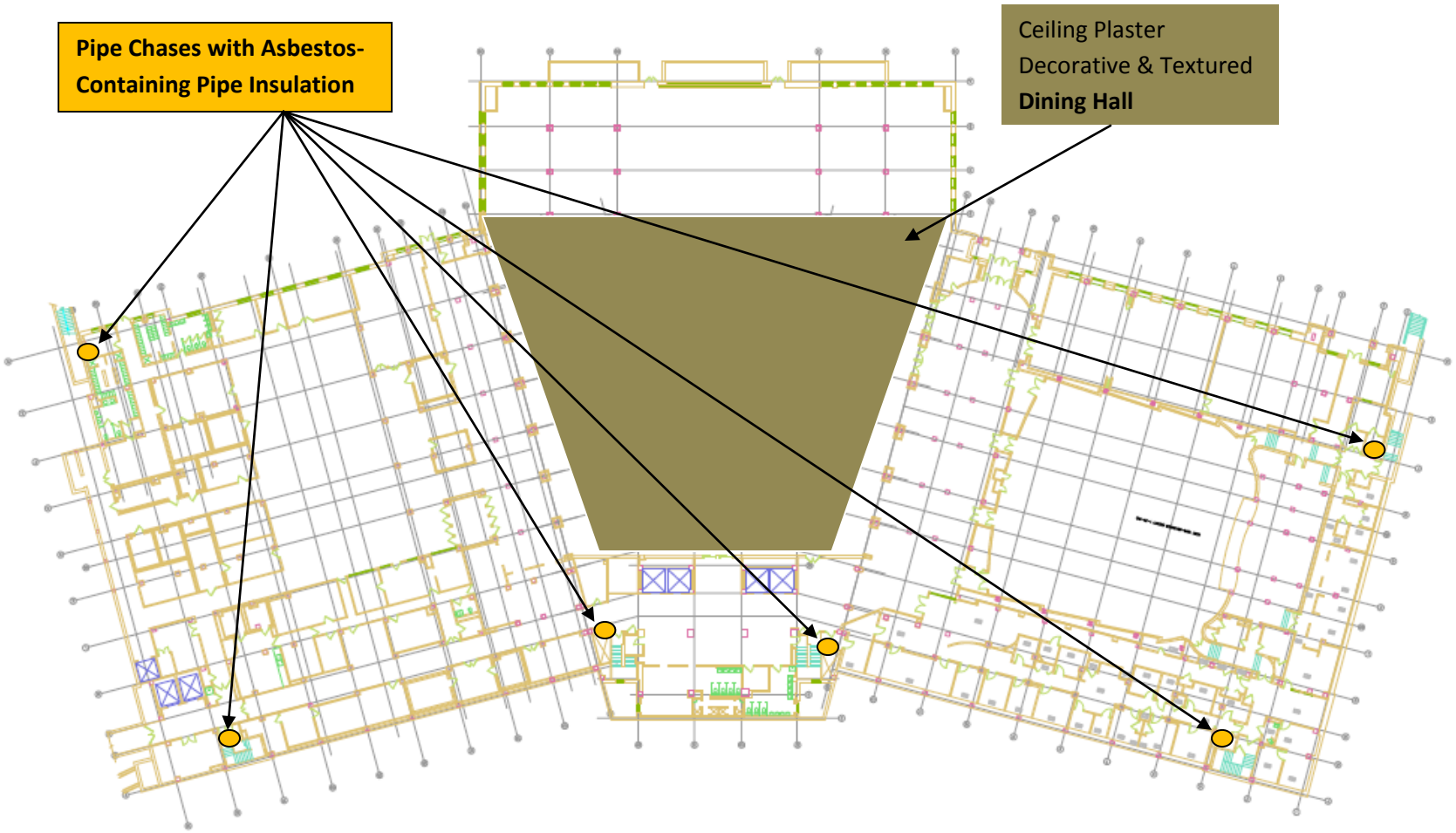
Thermal Systems Insulation:
Air cell, Calcium Magnesia,
Mudded Fittings, Pipe Wraps
and Cork Pipe Insulation

Paper Board Ceiling with Mastic

Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

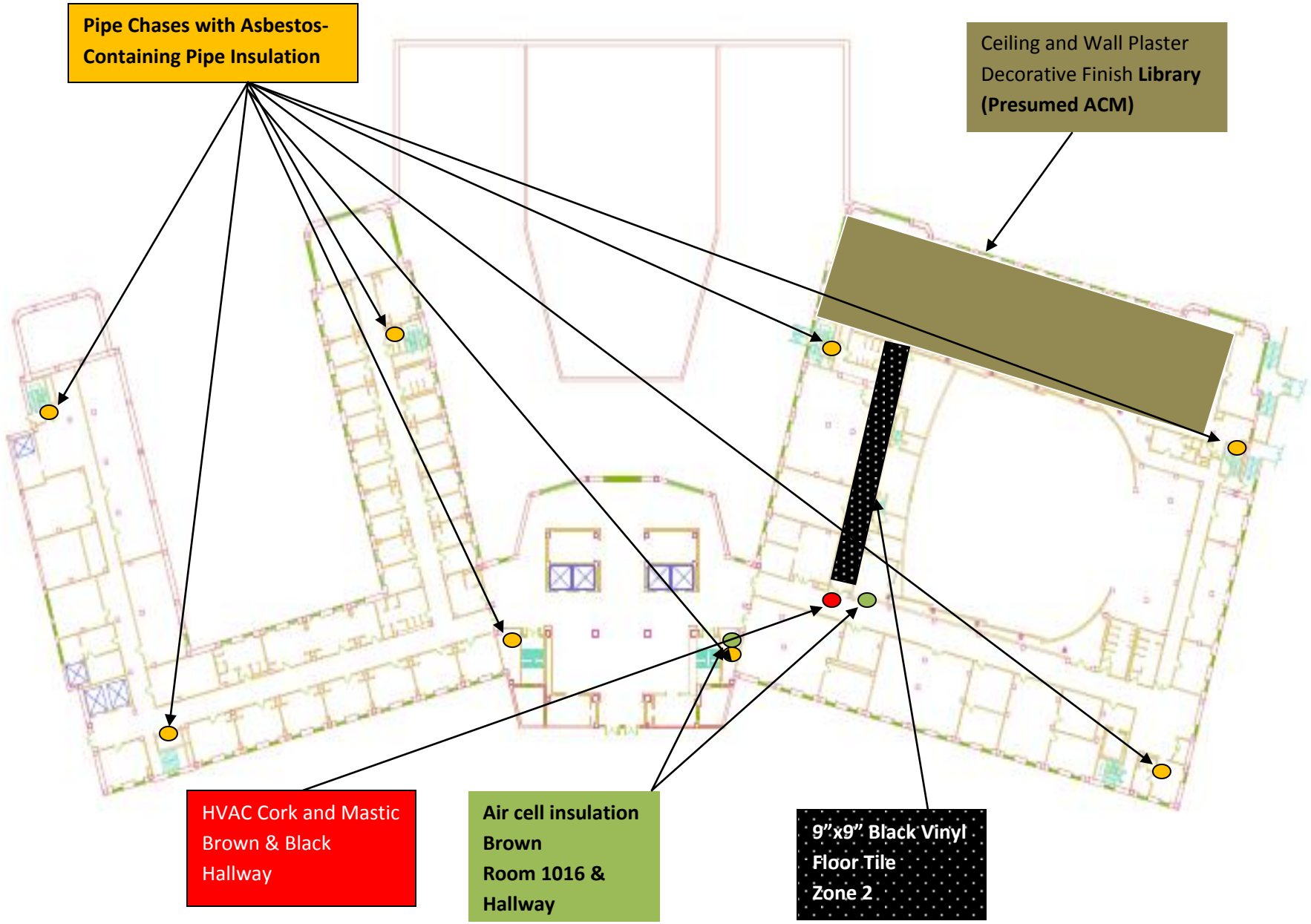
Scott Building – Ground Floor
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

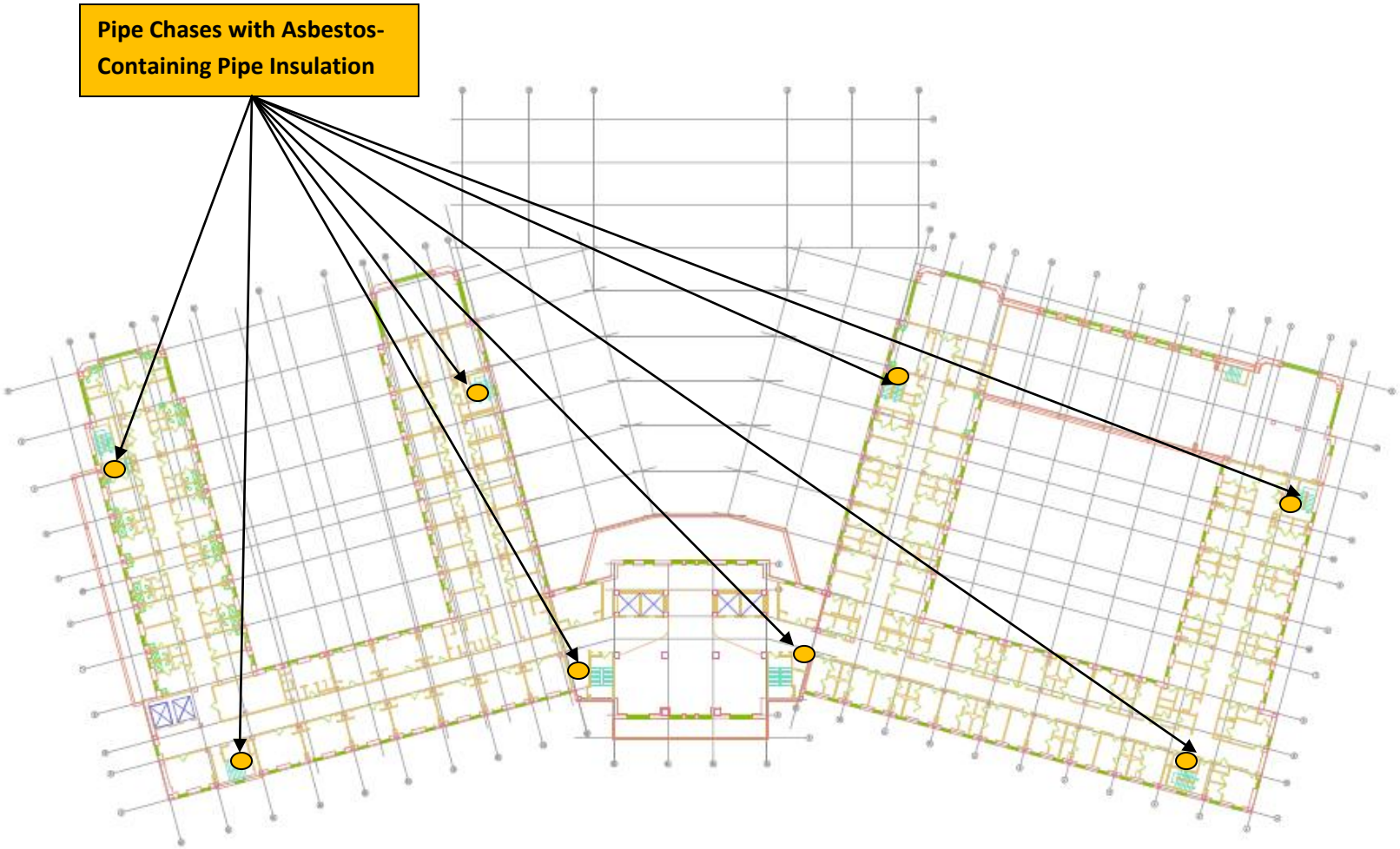
Scott Building – Main Floor
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

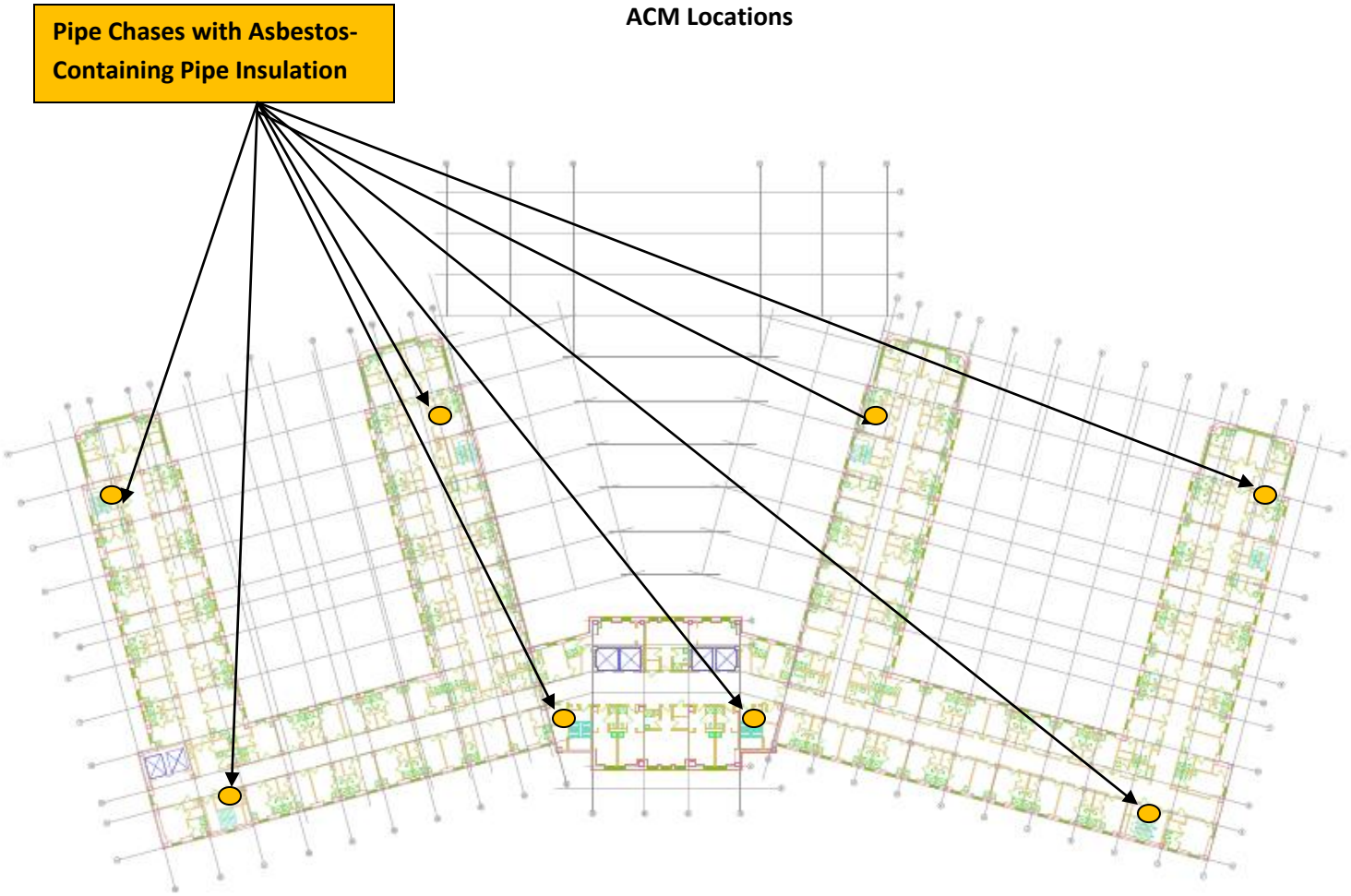
Scott Building – 2nd Floor
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

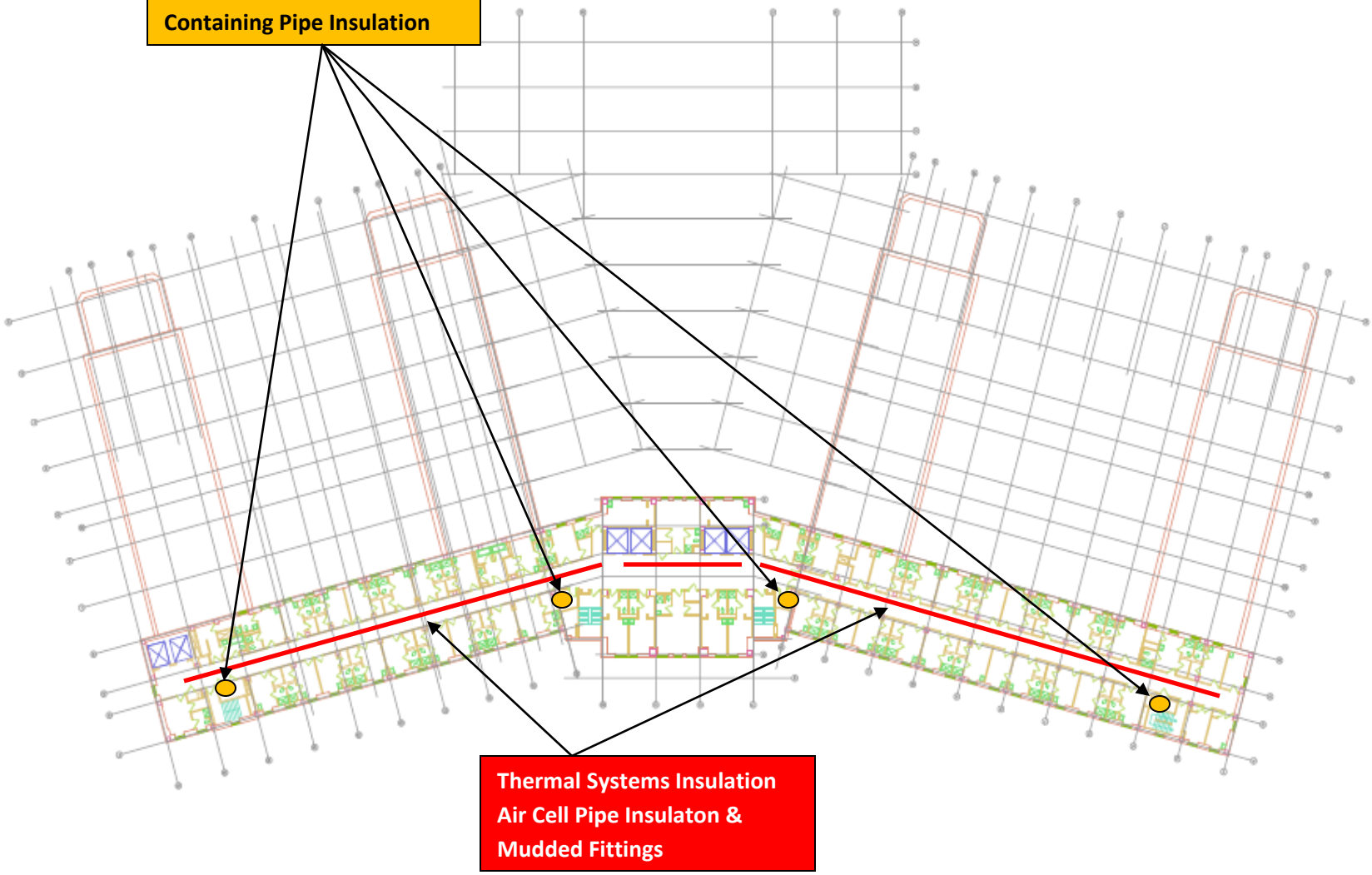
Scott Building – 3rd to 6th Floor
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

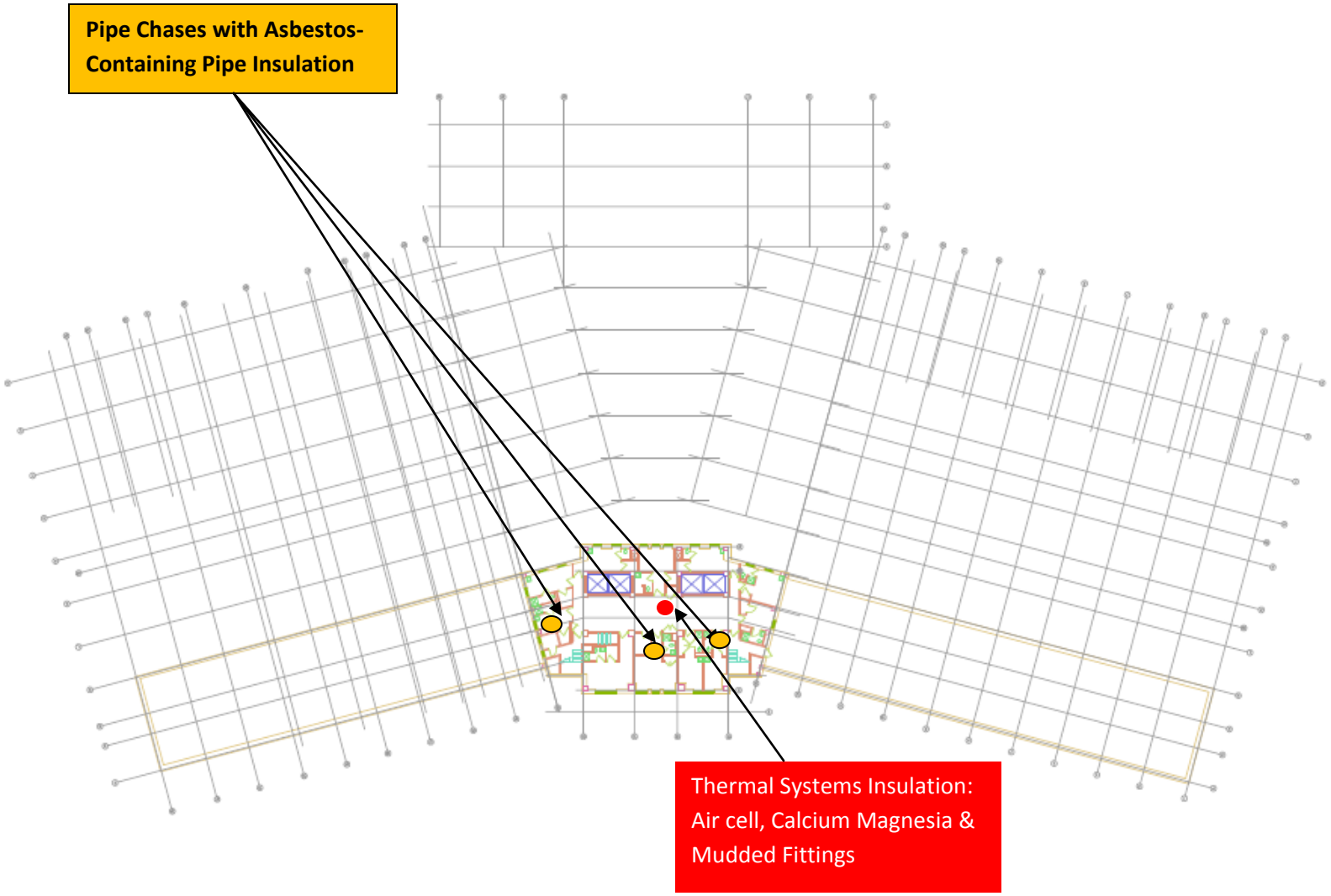
Scott Building - 7th Floor
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

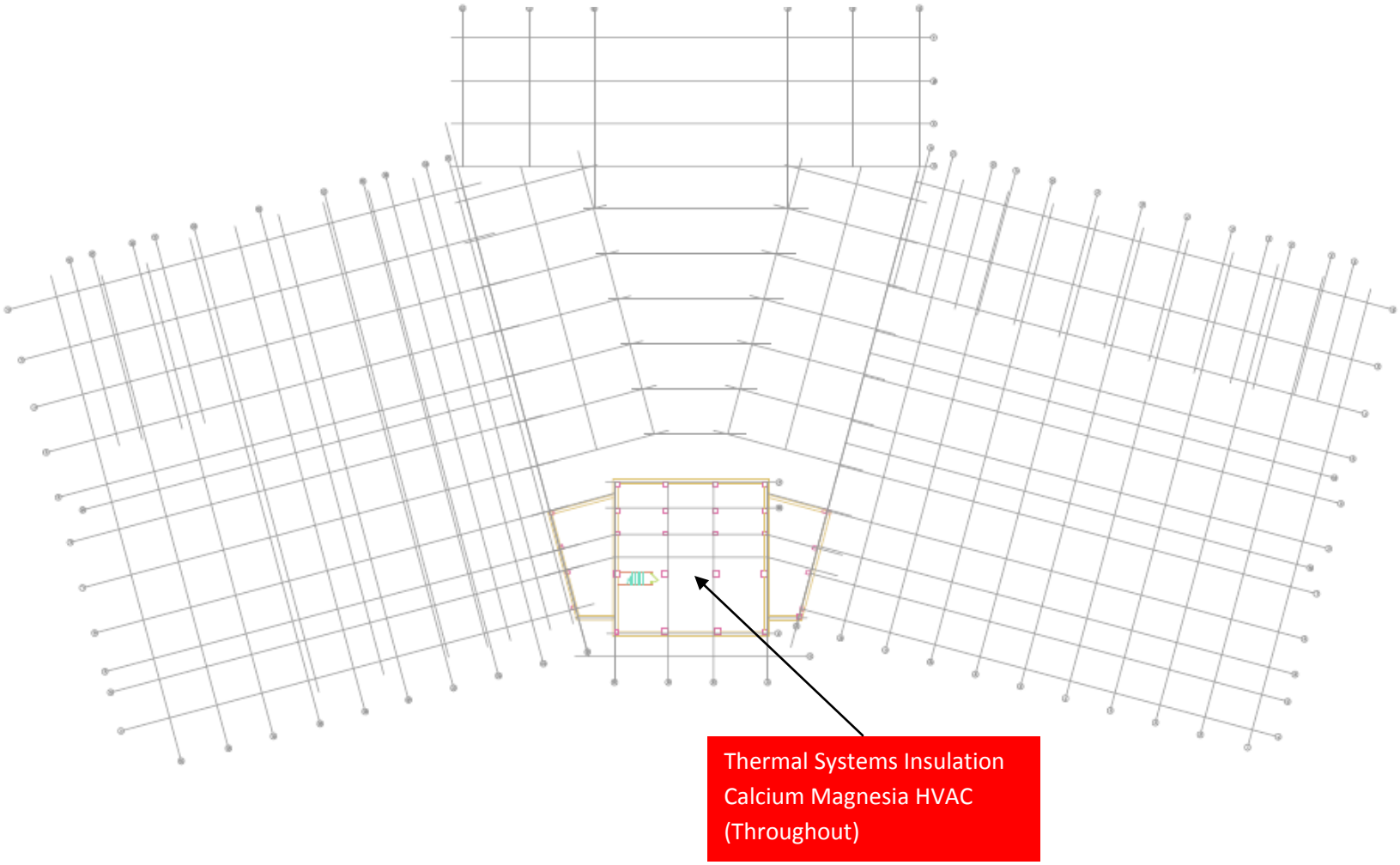
Scott Building – 8th Floor Residences
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

Scott Building –8th Floor Penthouse
ACM Locations



Note:

Fire Doors and Exterior Wall Caulk located throughout the building are asbestos-containing. Elevator Components, Roofing Materials and Pipe/Tank/Mechanical Equipment Flanges and Gaskets throughout the building should be considered to be asbestos-containing until sampling determines otherwise.

APPENDIX D

SITE PHOTOGRAPHS

1. View of asbestos-containing steam pipe insulation.


2. View of asbestos-containing paperboard ceiling.

3. View of asbestos-containing hot water tank insulation.

4. View of asbestos-containing troweled-on wall surfacing material.

5. View of asbestos-containing Air Handling Unit #8 insulation.

6. View of fire doors with asbestos-containing insulation.

7. View of asbestos-containing exterior wall caulk.

8. View of asbestos-containing HVAC duct insulation.

9. View of asbestos-containing black pipe wrap.

10. View of presumed asbestos-containing decorative ceiling plaster in the dining hall.

11. View of asbestos-containing air-cell and mudded pipe fitting insulation.

12. View of access panel door with asbestos-containing insulation.

13. View of mercury-containing High Intensity Discharge (HID) lamps.

14. View of mercury-containing fluorescent lamps with PCB-containing ballasts.

15. View of mercury-containing fluorescent lamps with PCB-containing ballasts.

16. View of mercury-containing fluorescent lamps with PCB-containing ballasts.