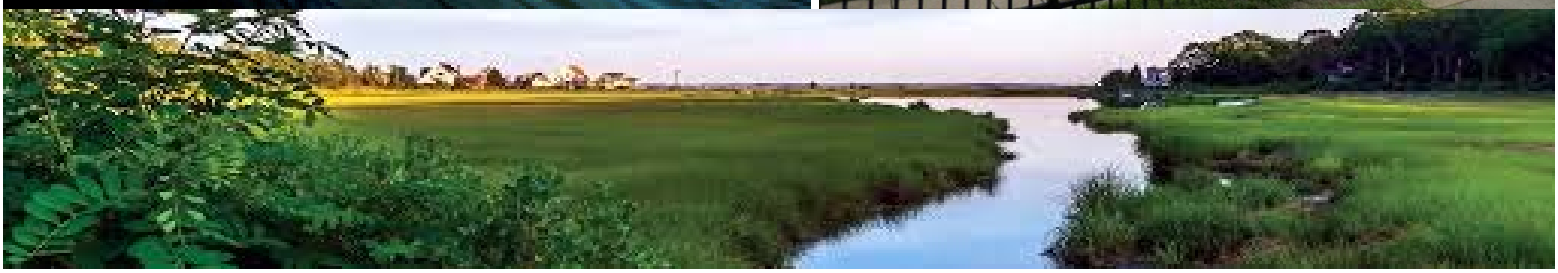
RAMSEY HOMES
ENVIRONMENTAL REVIEW
699 N PATRICK STREET, ALEXANDRIA, VA 22314



Ramsey Homes Environmental Review

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Environmental Review Steps and Process

Orientation to Environmental Reviews

Use this website to learn about the components of the environmental review process.

Overview

Part 50 and Part 58

Timing the Review

Project Description

Level of Review

Part 58 Flowchart

Environmental Analysis (Part 58)

Environmental Analysis (Part 50)

Finalizing the Review

Revisiting the Review

Part 50 and Part 58

The first step in the environmental review process is determining whether the HUD assistance falls under a Part 50 or Part 58 environmental review. This is usually specified in the Notice of Funding Availability, program regulations, or legislation. Part 58 and Part 50 are the sections of HUD regulations that implement that National Environmental

reviews, and Part 58 applies to programs that allow a responsible entity to perform the environmental reviews.

Part 58

HUD regulations at 24 CFR 58 allow the assumption of authority to perform the environmental reviews by responsible entities, which are units of general local government, such as a town, city, county, tribe, or state. The responsible entity is responsible for the scope and content of the review and making the finding. The certifying officer of the responsible entity, usually the mayor, signs the review and takes legal responsibility for the review.

HUD responsibilities under Part 58 are very limited. HUD will receive the Request for Release of Funds and Certification (HUD form 7015.15) from the responsible entity, accept public comments during the HUD public comment period, and approve the use of HUD assistance through the Authority to Use Grant Funds (HUD form 7015.16). HUD will also periodically conduct in-depth monitoring of responsible entities' environmental review records.

Part 58 applies when legislation for a program allows local governments to assume authority. (See **58.1(b) (http://edocket.access.gpo.gov/cfr_2002/aprqtr/pdf/24cfr58.1.pdf)** or **HUD Environmental Regulations (http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title24/24cfr58_main_02.tpl)** for a list of programs authorized under Part 58). Local governments must assume responsibility for grants made directly to the local government when legislation permits. They are encouraged to be responsible for the environmental review in cases where the grants are made to other entities, such as nonprofit organizations and public housing authorities.

Part 50

Part 50 applies when program legislation does not delegate the authority to assume responsibility to the local government, such as FHA housing programs. Part 50 may also apply when the local government was not a direct recipient of the funds and refuses to accept responsibility or when HUD determines the local government does not have capacity to act as responsible entity.

Public Housing Authorities are not units of local government and cannot assume environmental responsibility under Part 58. Public Housing Authorities can work with their unit of local government to complete reviews under Part 58, or directly with HUD to complete reviews under Part 50.

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Environmental Analysis (Part 50)

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Timing the Review

HUD's regulations at 24 CFR 58.22 prohibit grant recipients and their partners from committing or spending HUD or non-HUD funds on any activity that could have an adverse environmental impact or limit the choice of reasonable alternatives prior to completion of an environment review once a project has become "federal." This

rehabilitation, and construction, as well as contracting for or committing to any of these actions.

The restriction on undertaking or committing funds for choice-limiting actions does not apply to undertakings or commitments of non-federal funds before a project participant has applied for HUD funding. A party may begin a project in good faith as a private project and is not precluded from later deciding to apply for federal assistance. However, when the party applies for federal assistance, it will generally need to cease further choice-limiting actions on the project until the environmental review process is complete.

A HUD Memo (/resource/5032/hud-memo-guidance-on-options-and-conditional-contracts-for-purchase-of-real-property-for-environmental-reviews-conducted-by-a-responsible-entity-under-24-cfr-58/) is also available to provide guidance for grantees on when to use conditional and option contracts for the purchase of real property under 24 CFR 58.

Environmental Assessment
Determinations and Compliance Findings for HUD-assisted Projects
24 CFR Part 58

Project Information

Project Name: **Ramsey Homes**

Responsible Entity: **City of Alexandria Office of Housing**

Grant Recipient (if different than Responsible Entity): **Alexandria Redevelopment and Housing Authority**

State/Local Identifier:

Preparer: **Alexandria Redevelopment and Housing Authority**

Certifying Officer Name and Title: **City of Alexandria, Virginia/Mark Jinks, City Manager**

Grant Recipient (if different than Responsible Entity):
Alexandria Redevelopment and Housing Authority

Consultant (if applicable):

Direct Comments to:

Cindy Metcalf
Compliance Manager/Program Administration
Alexandria Office of Housing
421 King Street, Suite 200
Alexandria, VA 22314

Leroy Battle, AICP
Project Manager
ARHA
401 Wythe Street
Alexandria, VA 22314

Project Location: **699 N. Patrick Street, Alexandria, VA 22314**

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]**:**

Ramsey Homes is located at 699 N. Patrick Street in Alexandria, Va. constructed in 1942. The Project site is .71 acres, occupying one half of a city block, the east side of the 600 block of North Patrick Street between Pendleton and Wythe Street. The site is currently improved with

(15) two-bedroom townhomes in four buildings. Three of the buildings are quadruplexes and one is a triplex.

The development proposal consists of demolishing the existing buildings and constructing a 3-4 story structure with 52 units of multifamily with 31 spaces of underground parking.

The following demolitions provisions are required by the City of Alexandria prior and/or during the demolition phase and are included on the final site plan:

1. A separate permit is required for demolition; however, no demolition shall begin until all erosion and sediment and tree protection controls are in place and are approved by an erosion and sediment control inspector of the department of transportation and environmental services.

2. All work shall be performed in strict compliance with the most current applicable federal, state, and local laws and regulations, including but not limited, to the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), Virginia Occupational and Safety Health Compliance Program (VOSH Enforcement), Virginia Overhead High Voltage Line Safety Act, National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and national Institute of Occupational Safety and Health (NIOSH).

3. The contractor shall be responsible for the coordination of work with representative utility companies and for the implementation of required utility-related work.

4. The contractor shall immediately notify the owner's representative upon encountering any hazardous materials during demolition and/or construction activities. the contractor shall document same to the owner's representative and obtain direction as to the appropriate action(s) to be taken.

5. Disconnection of services and systems supplying utilities to be abandoned or demolished shall be completed prior to other site demolition in full compliance with applicable codes, regulations, and the requirements of utility purveyors having jurisdiction. the contractor shall be responsible for coordination with the utility purveyors, payment of associated fees and procurement of all necessary permits.

6. Prior to removal of materials over existing utility systems, the contractor shall document existing conditions and, if at variance with conditions as represented on the plans, notify the owner's representative and obtain directions as to the appropriate action(s) to be taken.

7. The contractor shall backfill excavated areas with approved materials/clean fill as per the requirements of Virginia Department of Transportation (VDOT).

8. The contractor shall protect and prevent damage to existing on-site utility distribution facilities that are to remain. active utility distribution facilities encountered during

demolition and/or construction activities shall be shut off at the service main with the approval of the owner's representative.

9. During demolition and/or construction activities, the contractor shall immediately notify the owner's representative upon encountering any existing utilities and/or utility system structures not shown on these plans. the contractor shall document the same and forward the information to the resident engineer/owner's representative, and obtain direction as to the appropriate action(s) to be taken.

10. The contractor or applicant shall work with the city staff to reuse the existing, leftover, unused, and/or discarded building materials as part of the demolition process or the construction debris must be removed to an approved landfill with adequate frequency in accordance with the Virginia State Litter Control Act.

Contractor shall implement a waste refuse control program during the construction phase of this development. the program shall control waste such as discarded building materials, concrete truck washout, chemicals, litter or trash, trash generated by construction workers or mobile food vendor businesses serving them, and all sanitary waste at the construction site and prevent offsite migration that may cause adverse impacts to neighboring properties or the environment to the satisfaction of Director of T&ES and code administration. all waste shall be properly disposed offsite in accordance with all applicable federal, state and local laws.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:

"The City of Alexandria has suffered a profound loss of affordable housing over the last sixteen years. Between 2000 to 2016, the City's market-affordable housing stock (affordable to households earning up to 60% of the Area Median Income (AMI)) has declined by approximately 14,000 units...". The redevelopment of the Ramsey Homes is a modest effort to reverse the City's loss of affordable housing, and assist the City in meeting its declared affordable housing objectives. The Project is consistent with the ARHA 2012-2022 Strategic Plan, the City's Housing Master Plan and the Braddock East Master Plan (BEMP).

Existing Conditions and Trends [24 CFR 58.40(a)]:

According to the City of Alexandria Master Plan, the affordable housing stock is projected to decrease over the next twenty years as demand continues to increase. Even when the impact of existing affordable housing programs is considered, the City will need approximately 14,687 housing units affordable to households under 60% AMI to meet the projected demands.

The Ramsey Homes Project involves the redevelopment of, an underutilized and obsolete, fifteen (15) unit public housing site into a fifty-two (52) unit mixed-income, multi-family rental housing site. The proposed development will make a modest impact in providing an additional 37 units of affordable housing, This mixed-income Project would be available to the extremely low-income families that reside at the Project today, as well as to a 4-person household at up to 60% of the AMI, currently at approximately $65,160, which is within the city's limits for affordable rental housing. ARHA is committed to maintaining a site-based waiting list with a preference for income-qualified city employees in order to incent workers to live in the Alexandria city.

Funding Information

Grant Number	HUD Program	Funding Amount
VA39R004501-09	Public Housing Capital Fund	26,828.00
VA39R004501-10	Public Housing Capital Fund	78,101.00
VA39R004501-12	Public Housing Capital Fund	149,214.00
VA39R004501-13	Public Housing Capital Fund	238,038.00
VA39R004501-14	Public Housing Capital Fund	212,940.00
VA39R004501-15	Public Housing Capital Fund	150,307.00

Estimated Total HUD Funded Amount: $855,428.00

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]**: $18,778,995**

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐ No ☒	See Tab 1 for Airport Hazards. Subject Site is located more than 2,500 Ft from Reagan National Airport.
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐ No ☒	See Tab 2 for Coastal Barrier Resources map. Site is located outside of Coastal Barrier Resources Zone.

Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐ No ☒	See Tab 3 for FEMA firm map. The site is not in Flood Hazard zones.
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	See Tab 4 for Clean Air responses including a letter dated, May 20, 2012, whereby the EPA designated the Washington DC Metro Area as a "marginal" nonattainment of the ozone standard of 75ppb. The letter further states *"however, this standard should have **no effect** on housing projects being considered."*
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☒ No ☐	See Tab 5 for Coastal Zone Management response letter from the Virginia Department of Environmental Quality. The site is located in the Alexandria, VA which is in a Coastal Zone Management area according the attached Virginia Coastal Zone Map. The construction will be executed in a manner consistent with the Commonwealth of Virginia's Coastal Resources Management Programs listed under "Enforceable Programs". As each site and specific activity is identified and if any of the enforceable programs are applicable, the required permits and approvals will be obtained.
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☐ No ☒	See Tab 6. In accordance with the attached Phase I Environmental Assessment performed by Hillman Consulting, there were no notable findings related to potential environmental concerns in connection with the Property. However, given the age of the buildings, lead-based paint and asbestos may be present. See Mitigation Measures and Conditions.
Endangered Species	Yes ☐ No ☒	See Tab 7 for the Endangered Species worksheet and Fish and Wildlife Service Map. There are no endangered species

Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402		expected to occur at this location or critical habitats, wildlife refuges, fish hatcheries at this location.
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	See Tab 8 for the Phase I Environmental Report providing Evidence of Explosive and Flammable Hazards.
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	See Tab 9. The project does not convert agriculture land to non-agriculture land as the site has been developed since the mid-19th Century.
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☐ No ☒	See Tab 10 which includes the FEMA Firm Map. The subject site is situated outside of the 100 year and 500 year flood plain.
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☒ No ☐	See Tab 11 for Historic Preservation worksheet and related documents. The site is deemed eligible for the National Register of Historic Places and has undergone the Section 106 process to identify Areas of Potential Effect (APE) and mitigation alternatives. In addition, an MOA has been executed.
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	See the attached Tab 12 which includes the Noise Abatement and Control worksheet which includes the DNL calculation showing the combined DNL assessment of 57.1.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐ No ☒	See Tab 13 for the Sole Source Aquifer worksheet. The site is not located on a sole source aquifer and is served by public water system.
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☐ No ☒	See Tab 14. No onsite or off-site wetlands are impacted by the proposed development.
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	See Tab 15 for Wild and Scenic Rivers worksheet and mapping. There are no Wild and Scenic Rivers in the State of Virginia as mapped by the National Wild and Scenic River System.

ENVIRONMENTAL JUSTICE		
Environmental Justice Executive Order 12898	Yes ☐ No ☒	See Tab 16 for Environmental Justice worksheet. There are no adverse environmental impacts identifies in any compliance reviews. The Ramsey Homes site has been used as affordable housing since 1953. As the existing development is obsolete and in need of modernization, the proposed development will allow the site to continue to be used as an affordable housing alternative serving residents between 30% and 60% of area median income. In addition, the proposed Ramsey Homes Project is consistent with the ARHA 2012-2022 Strategic Plan, the City's Housing Master Plan and the Braddock East Master Plan (BEMP).

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.
(1) Minor beneficial impact
(2) No impact anticipated
(3) Minor Adverse Impact – May require mitigation
(4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning	1	See Tab 17 for Resolutions 5011 and 5012 approved by the Alexandria Virginia City Council approving the map

/ Scale and Urban Design		amendment and rezoning necessary for the redevelopment of Ramsey Homes dated May 14, 2016. On November 12, 2016, the Alexandria City Council approved the Development Special Use Permit request in providing the required zoning entitlements for the proposed development to go forward with permit drawing submissions.
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	1	See Tab 18 for Geotechnical Report. The naturally occurring soils of Stratum B are suitable for support of foundations. The Soil's consultant recommended a design soil bearing pressure of 3,000 psf for footings founded on approved natural soil or on new compacted fill placed over approved natural soil. Pursuant to Virginia's Erosion and Sediment Control Law, the development will comply with the City of Alexandria, Erosion and Sediment Control Code, Section 5, Chapter 4. These programs require that any construction project that disturbs at least 2,500 square feet have a City approved construction pollution prevention plan and install appropriate construction site runoff controls to meet the goal of reduced pollutant discharge to the City's streams.
Hazards and Nuisances including Site Safety and Noise	2	During the construction phase the construction team and owner with have to comply with the development conditions and City of Alexandria regulations governing site safety and applicable noise ordinances. The building will be design to ensure that a decibel reading of less than 65 is achieved in each unit.
Energy Consumption	2	Low flow toilets, energy star appliances, and other measures will be undertaken to limit the energy usage at the proposed development.

Environmental Assessment Factor	Impact Code	Impact Evaluation
SOCIOECONOMIC		
Employment and Income Patterns	1	The proposed development provided an additional 37 units of affordable housing for residents with income profiles within 30% - 60% of Area Median Income (AMI). The project will increase the number of temporary jobs for low income residents and create opportunity for job training that may lead to long term employment.
Demographic Character Changes, Displacement	1	It is anticipated that each of the existing residents will be able to return, should they desire to do so, to the new development as the number of available units will increase by 247%. In addition, a broader range of income profiles will be allowed to qualify for housing.

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	1	See Tab 19 for Educational and Cultural Facilities. The site is served by Alexandria Public Schools. There are several schools proximate to the site including Maury Elementary School Jefferson-Houston Elementary School, George Washington Middle School. In addition, the Alexandria Public Schools Adult Education facility is within four blocks walking distance. Additional nursery, early childhood education and private schools are proximate to the site.
Commercial Facilities	1	The City of Alexandria is nationally recognized as one of the best places to live and do business on the east coast. There are a considerable number of restaurants, grocery, car repair, banks, post office, churches and a host of other commercial facilities including a museum, and recreation center within walking distance of the site. In addition, the site is within a 2 ½ block walk to the Braddock Road metrorail station and proximate to public bus transportation.
Health Care and Social Services	1	See Tab 20 for Health Care and Social Services. There are approximately fifteen Health Care and Social Services centers including healthcare, dental, and related service providers within a 5,000 foot radius of the site.
Solid Waste Disposal / Recycling	2	ARHA will contract with a private refuse collector for solid waste disposal and recycling alternatives. Collection can be provided by the City of Alexandria, but both options are under consideration.
Waste Water / Sanitary Sewers	2	See Tab 21 for water pressure study performed by Everard Mid Atlantic, Inc. The project is served by the City sewer services and have adequate pressure.
Water Supply	2	The project is served by public water service and has adequate pressure as provided in Tab 21.
Public Safety - Police, Fire and Emergency Medical	2	The site is serves by the Alexandria Virginia Police, Fire and EMT personnel. The Police and Fire Department have reviewed the plans and found them to be in conformance with acceptable practices to assure public safety. There are conditions and other performance factors that must be met during the plan review phase to remain compliant with public safety expectations and practices.
Parks, Open Space and Recreation	1	See Tab 22. 18 Parks are located within a 5,000 linear foot radius of the site. In addition the site will include a 6,000 SF open space area, with a public easement immediately adjacent to the residences.

Transportation and Accessibility	1	The site is served by the DASH bus system and within four blocks of the Braddock Road Metro Station.

Environmental Assessment Factor	Impact Code	Impact Evaluation
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	There are no unique natural features or water resources.
Vegetation, Wildlife	2	The existing site is improved consisting of seven buildings, large deciduous trees, shrubbery and grass. The proposal would demolish the existing buildings and construct new, one 52-unit building, with street trees, new shrubs and ground cover meeting the city's canopy coverage requirement. There are no protected species, flowers, or wildlife on the site.
Other Factors		

Additional Studies Performed:

Field Inspection (Date and completed by)**:**
The site is comprised of 15 units of existing multifamily housing, two-stories in height, served by limited alley parking and on-street parking. There a several mature trees on the site and a limited number of existing shrubs. Grass in the predominant ground cover.

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]**:**
City of Alexandria Planning Department
City of Alexandria Police and Fire Department
US Housing and Urban Development
Virginia Department of Historic Resources
Alexandria Archeology
Virginia Housing Development Authority
Alexandria Historical Restoration and Preservation Commission
The Alexandria Society for the Preservation of Black Heritage, Inc.
ALIVE! Inc.
Historic Alexandria Foundation
Office of Historic Alexandria
West Old Town Citizens Association Executive Board
Historic Alexandria Resources Commission
Alexandria Black History Museum
Section 106 Consulting Parties

List of Permits Obtained:
Development Special Use Permit granted by the Alexandria City Council on November 12, 2016
Certificate of Appropriateness granted by the Board of Architectural Review

Public Outreach [24 CFR 50.23 & 58.43]**:**
Over the prior 24 months, there have been nearly two dozen public meetings held with various stake holders including public meetings, meeting with residents and neighbors, Section 106 consulting parties, city officials, and state and federal agencies.

Cumulative Impact Analysis [24 CFR 58.32]**:**
Construction is expected to be completed by December of 2019.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]
As a result of the findings in this report, the grant recipient/preparer intends to go forward with the proposed project

No Action Alternative [24 CFR 58.40(e)]:
As a result of the findings in this report, the mitigating measures taken along with best practices, should allow the proposed development to proceed as planned.

Summary of Findings and Conclusions:

The proposed redevelopment of the Ramsey Homes consists of demolishing the existing 15 unit buildings and constructing new, 51 units of new housing. The proposed use of native plant materials, erosion and control measures, selective demolition, use of energy saving appliances, and other proposed measures ensure that impacts of this proposed development will have a minimum impact on the environment, and the new building will be far more energy efficient than the existing building and meet the goals of the Braddock East Plan, the City of Alexandria, and other principles of the Part 58 Environmental Assessment.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Lead Based Paint

A Phase I Environmental Assessment has been conducted on the site. There was no evidence of hazardous materials present based on the Phase I findings. Considering the date of construction of the buildings, lead-based paint may be present at the Property. In general, painted surfaces within the space were noted to be in good condition in the accessed areas. Prior lead dust wipe

screening sampling performed by others in 1994 identified lead dust in one sample collected from a window sill that exceeded the HUD guideline of 500 ug/ft2. The prior lead dust wipe screening sampling was limited to five of the 14 residential units at the Property. Given the age of the building, the City of Alexandria will require a full building survey and Pre-Demolition Asbestos survey prior to providing a demolition permit. The survey and permit issued by the City will require appropriate testing and disposition of all waste material and demolition debris. Following demolition, a Toxicity Characteristic Leaching Procedure (TCLP) will be performed to detect the level of lead and other materials to determine the appropriate method of disposal of the construction debris.

Fugitive Dust

During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 et sq. of the Regulations for the Control and abatement of Air Pollution. These precautions include, but are not limited to the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and,
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

Memorandum of Agreement Section 106 (Please See Tab 24 for the Section 106 Memorandum of Agreement)

As a part of the Environmental Review and given the presence of buildings on site that have historical and cultural significance, a Memorandum of Agreement (MOA) has been executed by the principals and consulting parties consisting of the Alexandria Redevelopment and Housing Authority, the Virginia State Historic Preservation Office, The Advisory Council on Historic Preservation, and the City of Alexandria to mitigate any negative impacts.

Following this review, there is a finding of no significant impacts.

Law, Authority, or Factor	**Mitigation Measure**
36 CFR Section 800	**Section 106 - Memorandum of Agreement**
Virginia Coastal Zones Management Asbestos-Containing Materials and Lead-Based Program	Given the age of the building, the City of Alexandria will require a full building survey and Pre-Demolition Asbestos survey prior to providing a demolition permit. The survey and permit issued by the City will require appropriate testing and disposition of all waste material and demolition debris. Following demolition, a Toxicity Characteristic Leaching Procedure (TCLP) will be performed to detect the level of lead and other materials to determine the appropriate method of disposal of the construction debris.

Determination:

☒ **Finding of No Significant Impact [24 CFR 58.40(g)(1); 40 CFR 1508.27]**
The project will not result in a significant impact on the quality of the human environment.

☐ **Finding of Significant Impact [24 CFR 58.40(g)(2); 40 CFR 1508.27]**
The project may significantly affect the quality of the human environment.

Preparer Signature: _____Date:_____

Name/Title/Organization: _____

_____

Certifying Officer Signature: _____Date:_____

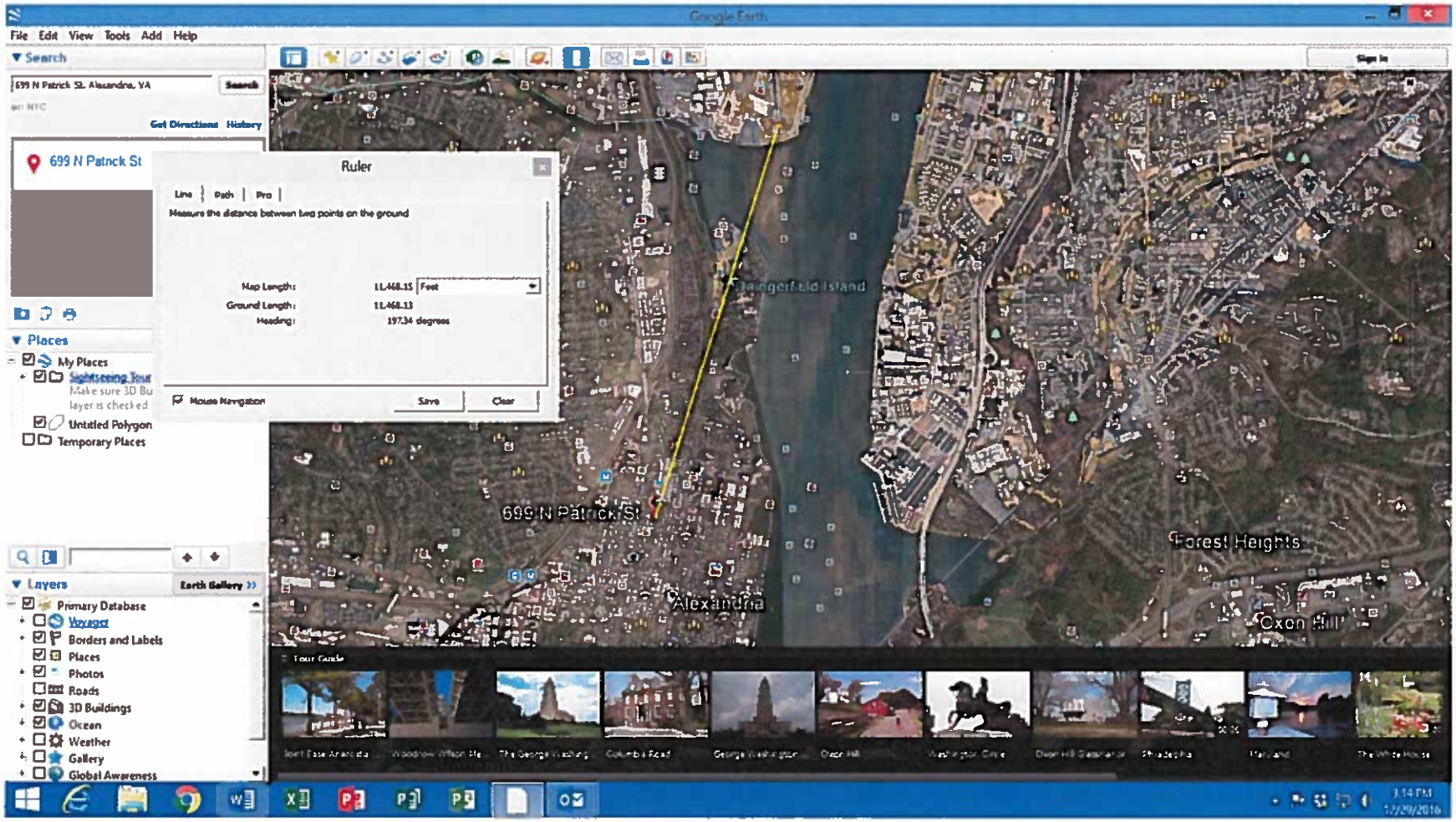
Name/Title: _____

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

TAB 1

AIRPORT HAZARDS

AIRPORT HAZARDS 24 CFR PART 51 SUBPART D



TAB 2

COASTAL ZONE BARRIER RESOURCES

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

March 13, 2017

Mr. Leroy W. Battle
Project Manager
Alexandria Redevelopment and Housing Authority
401 Wythe Street
Alexandria, VA 22314

RE: Federal Consistency Review, Ramsey Homes Project, City of Alexandria (DEQ #1903)

Dear Mr. Battle:

The Department of Environmental Quality (DEQ) is responsible for reviewing federal consistency documents and responding to appropriate agencies on behalf of the Commonwealth of Virginia. In accordance with the *Federal Consistency Regulations* at 15 CFR Part 930, Subpart F ("Consistency for Federal Assistance to State and Local Governments"), sections 930.90 through 930.101 and Executive Order 12372, DEQ reviews federal agency applications for financial assistance activities that are listed in the Commonwealth's management program as a type of activity that will have a reasonably foreseeable effect on any coastal use or resource and occurring within the coastal zone (§ 930.95(a)) or within a described geographic area outside of the coastal zone (§ 930.95(b)). Accordingly, DEQ has completed its review of the above-referenced proposal.

PROJECT DESCRIPTION

According to the February 6, 2017 letter (received March 3, 2017), submitted by the Alexandria Redevelopment and Housing Authority (ARHA), the ARHA has received Replacement Housing Factor Funds, federally funded by the Department of Housing and Urban Development (HUD) to construct the Ramsey Homes Project in Alexandria, Virginia. The property, located at 699 N. Patrick Street, was acquired by the ARHA in 1953 and used for public housing. The project involves the demolition of the existing four multi-family buildings consisting of 15 residential units, originally constructed in the 1940's, and construction of a new 3-4 story, 52-unit, multifamily building. The federal consistency certification (FCC) states that the proposed activity will be consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

FEDERAL CONSISTENCY

This project is consistent with the Virginia Coastal Zone Management Program (CZM), provided all applicable permits or approvals listed under "Enforceable Policies of Virginia's Coastal Zone Management Program" (Attachment 1) are received prior to implementation of the project. Accordingly, if any of the enforceable policies apply, please contact the relevant agencies to obtain applicable permits or approvals. DEQ's Northern Regional Office (DEQ-NRO, telephone 703-583-3800) administers the enforceable policies listed under DEQ's jurisdiction. Please contact that office for assistance in meeting the requirements of applicable programs.

The project must comply with all other applicable federal, state and local laws and regulations. In general, to the extent practicable, development must incorporate features that prevent significant adverse impacts on ambient air quality, water quality, wetlands, historic structures, fish and wildlife, and species of plants, animals, or insects listed by state agencies as rare, threatened, or endangered.

FEDERAL CONSISTENCY ANALYSIS

The analysis that follows addresses the enforceable policies of the Virginia CZM program that may apply to the proposed development project.

1. Nonpoint Source Pollution Control. The FCC (page 2) indicates that the project will comply with the City of Alexandria's Erosion and Sediment Control Code, Section 5, Chapter 4. Construction projects that disturb 2,500 square feet or more are required to have a City approved pollution prevent plan. Appropriate construction site runoff controls must also be installed.

1(a) Agency Jurisdiction. The DEQ Office of Stormwater Management (OSWM) administers the nonpoint source pollution control enforceable policy through the *Virginia Erosion and Sediment Control Law and Regulations* (*VESCL&R*) and *Virginia Stormwater Management Law and Regulations* (*VSWML&R*). In addition, DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land-disturbing activities under the Virginia Stormwater Management Program.

1(b) Requirements.

1(b)(i) Erosion and Sediment Control Plan. The applicant is responsible for submitting a project-specific erosion and sediment control (ESC) plan to the appropriate locality for review and approval pursuant to the local ESC requirements, should the project involve a land-disturbing activity equal to or greater than 2,500 square feet in a Chesapeake Bay Preservation Area. Depending on local requirements, the area of land

disturbance requiring an ESC plan may be less. The ESC plan must be approved prior to any land-disturbing activity at the project site. All regulated land-disturbing activities associated with the project, including on- and off-site access roads, staging areas, borrow areas, stockpiles, and soil intentionally transported from the project, must be covered by the project specific ESC plan. Local ESC program requirements must be requested through the City of Alexandria.

1(b)(ii) Stormwater Management Plan. Depending on local requirements, a Stormwater Management (SWM) plan may be required. Local SWM program requirements must be requested through the City of Alexandria.

1(b)(iii) General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10). The operator or owner of a construction project involving land-disturbing activities equal to or greater than one acre is required to register for coverage under the VAR10 permit and develop a project-specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit, and it must address water quality and quantity in accordance with the *VSMP Permit Regulations*. General information and registration forms for the General Permit are available on DEQ's website at http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx.

1(c) Conclusion. The project is consistent with the nonpoint source pollution control enforceable policy of the Virginia CZM Program, provided the activities comply with applicable conditions of the local program.

2. Coastal Lands Management. The FCC (page 3) indicates that the coastal lands management enforceable policy is applicable to the project and that the project is not within a Resource Protection Area (page 2).

2(a) Agency Jurisdiction. The DEQ Office of Local Government Programs (OLGP) administers the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 *et seq.*) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 25-830-10 *et seq.*). Each Tidewater locality must adopt a program based on the Chesapeake Bay Preservation Act and the Chesapeake Bay Preservation Area Designation and Management Regulations. The Act and regulations recognize local government responsibility for land use decisions and are designed to establish a framework for compliance without dictating precisely what local programs must look like. Local governments have flexibility to develop water quality preservation programs that reflect unique local characteristics and embody other community goals. Such flexibility also facilitates innovative and creative approaches in achieving program objectives. The regulations address nonpoint source pollution by identifying and protecting certain lands called Chesapeake Bay Preservation Areas. The regulations use a resource-based approach that recognizes differences between various land forms and treats them differently.

2(b) Agency Comments. In the City of Alexandria all areas not designated as a Resource Protection Area (RPA) are designated as a Resource Management Area (RMA). Based on the City of Alexandria June 12, 2004 RPA Buffer Map, the site appears to be outside of locally-designated RPAs. The site is located within a RMA.

2(c) Requirements. The ARHA must adhere to the general performance criteria requirements as provided in §9VAC25-830-130 of the Chesapeake Bay Preservation Area Designation and Management Regulations and the local program, as applicable.

2(d) Conclusion. Provided the project adheres to the above requirements, as applicable, the project is consistent with the coastal lands management enforceable policy of the Virginia CZM Program.

3. Air Pollution Control. The FCC (page 3) indicates that the developer will control odors and any other air pollution resulting from the construction activity.

3(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the State Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law. DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate DEQ regional office is directly responsible for the issuance of necessary permits to construct and operate all stationary sources in the region as well as monitoring emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

3(b) Agency Finding. According to the DEQ Air Division, the City of Alexandria is a non-attainment area for the 8 hour ozone standards.

3(c) Requirements.

3(c)(i) Fugitive Dust. During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and

- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

3(c)(ii) Open Burning. If project activities include open burning or the use of special incineration devices, this activity must meet the requirements under 9 VAC 5-130-10 through 9 VAC 130-60 and 9 VAC 5-130-100 of the *Regulations* for open burning. In addition, the *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning. The applicant should contact City of Alexandria fire officials to determine what local requirements, if any, exist.

3(c)(iii) Asphalt Paving. A precaution, which typically applies to road construction and paving work (9 VAC 5-45-780 *et seq.*), places limitations on the use of "cut-back" (liquefied asphalt cement, blended with petroleum solvents), and may apply to the project. The asphalt must be "emulsified" (predominantly cement and water with a small amount of emulsifying agent) except when specified circumstances apply. Moreover, there are time-of-year restrictions on its use from April through October in VOC emission control areas.

3(c)(iv) Fuel-Burning Equipment. Should the proposed project require the installation of fuel-burning equipment (boilers, generators, etc.), or other air pollution emitting equipment, the project may be subject to 9 VAC 5-80, Article 6, Permits for New and Modified sources.

3(d) Conclusion. Provided the project adheres to the above requirements, as applicable, it is consistent with the air pollution control enforceable policy of the Virginia CZM Program.

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

In addition to the enforceable policies of the CZM Program, guidance is also provided with respect to applicable requirements and recommendations of the following programs:

1. Solid and Hazardous Wastes, and Hazardous Substances. DEQ administers the *Virginia Solid Waste Management Regulations* (9 VAC 20-81) and the *Virginia Hazardous Waste Management Regulations* (9 VAC 20-60). The ARHA may contact DEQ-NRO (703-583-3800) concerning the location and availability of waste management facilities in the project area or with questions related to the below requirements.

1(a) Agency Recommendations. DEQ encourages all projects and facilities to implement pollution prevention principles, including:

- the reduction, reuse and recycling of all solid wastes generated; and
- the minimization and proper handling of generated hazardous wastes.

1(b) Requirements.

1(b)(i) Contaminated Waste. Any wastes that are generated must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations.

1(b)(ii) Asbestos-Containing Materials and Lead-Based Paint. All structures being demolished/renovated/removed must be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to federal waste-related regulations, state regulations 9 VAC 20-80-620 for ACM and 9 VAC 20-60-261 for LBP must be followed.

1(b)(iii) Petroleum Release Sites and Storage. If evidence of a petroleum release is discovered, it must be reported to DEQ, as authorized by Virginia Code § 62.1-44.34.8 through 9 and 9 VAC 25-580-10 *et seq*.

The installation and use of an aboveground storage tank (>660 gallons) for temporary fuel storage (>120 days) during the project must follow the requirements in 9 VAC 25-91-10 *et seq*.

2. Pollution Prevention. DEQ advocates that principles of pollution prevention and sustainability be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention and sustainability techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source. We have several pollution prevention recommendations that may be helpful for this project:

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider energy efficiency when choosing materials and products, like insulation, fixtures, and HVAC systems.
- Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.
- Integrate pollution prevention techniques into property construction and maintenance.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques. For more information, contact DEQ's Office of Pollution Prevention (Meghann Quinn, 804-698-4021).

3. Historic Structures and Archaeological Resources. Section 106 of the National Historic and Preservation Act of 1966, as amended, requires that proponents of activities that receive federal funding consider effects to properties that are listed, or eligible for listing, on the National Register of Historic Places. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources.

Based on supplemental information received from the ARHA (Battle/Howard email, 3/6/17), the structures to be demolished were constructed in the early 1940's (over 50 years old). Please note that under historic preservation rules, structures over 50 years old may (by virtue of age and other characteristics) be eligible for listing on the National Register. Accordingly, we recommend that ARHA or its agents contact DHR (Roger Kirchen, telephone (804) 482-6091) before proceeding with the demolition to ask two questions: (1) whether National Register (or Virginia Landmarks Register) eligibility is the case, and, if so, (2) whether it warrants any precautions relative to the scope of work that is contemplated for the property.

In addition, the ARHA or its agents may encounter archaeological resources outside the structure while undertaking the project, particularly during the construction of the new sewer main. If archaeological resources are encountered, DHR should be contacted immediately (Roger Kirchen, 804-482-6091).

4. Water Conservation. The following recommendations will result in reduced water use associated with use of residential structures.

- Grounds should be landscaped with hardy native plant species to conserve water as well as to lessen the need to use fertilizers and pesticides.
- Convert turf to low water-use landscaping such as drought-resistant grass, plants, shrubs, and trees.
- Consider installing flow restrictors and aerators on faucets.
- Improve irrigation practices by:
    - upgrading sprinkler clock; water at night, if possible, to reduce evapotranspiration (lawns need only 1 inch of water per week, and do not need to be watered daily; overwatering causes 85% of turf problems);
    - installing a rain shutoff device; and
    - collecting rainwater with a rain bucket or cistern system with drip lines.
- Install new high-efficiency washers and dishwashers to reduce water usage by 30-50% per use over older models.
- Check for and repair leaks (toilets and faucets) during regular routine maintenance activities.

5. Energy Conservation. The development should be planned and designed to comply with state and federal guidelines and industry standards for energy conservation and efficiency. For example, the energy efficiency of the apartment buildings can be enhanced by maximizing the use of the following:

- thermally-efficient building shell components (roof, wall, floor, windows and insulation);
- facility siting and orientation with consideration towards natural lighting and solar loads;
- high-efficiency heating, ventilation, air conditioning systems; and
- high-efficiency lighting systems and daylighting techniques.

Please contact the Department of Mines, Minerals and Energy (David Spears at (434) 951-6350) for assistance in meeting this challenge.

Thank you for the opportunity to review this proposal. If you have questions, please feel free to call me at (804) 698-4299.

Sincerely,

Janine L. Howard, EIR Coordinator
Office of Environmental Impact Review

Ec: Kerry Johnson, HUD Richmond Field Office
Leroy Battle, ARHA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
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Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Zone Management Program (CZM)

a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC) (Virginia Code §28.2-200 to §28.2-713) and the Department of Game and Inland Fisheries (DGIF) (Virginia Code §29.1-100 to §29.1-570).

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities (Virginia Code §3.2-3904 and 3.2-3935 to §3.2-3937).

b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Virginia Marine Resources Commission (VMRC) (Virginia Code §28.2-1200 to §28.2-1213).

c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(1) The tidal wetlands program is administered by VMRC (Virginia Code §28.2-1301 through §28.2-1320).

(2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands - both tidal and non-tidal - (Virginia Code §62.1-44.15:5) and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by VMRC (Virginia Code §28.2-1400 through §28.2-1420).

e. Non-point Source Pollution Control - (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by DEQ (Virginia Code §62.1-44.15:51 *et seq.*).

(2) Coastal Lands Management is a state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater (see i) Virginia (Virginia Code §62.1-44.15:67 – 62.1-44.15:79 and Virginia Administrative Code 9 VAC 25-830-10 *et seq.*).

f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished through the implementation of:

(1) The National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.

(2) The Virginia Water Protection Permit (VWPP) program administered by DEQ (Virginia Code §62.1-44.15:5) and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (VDH) (Virginia Code §32.1-164 through §32.1-165).

h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (DEQ) (Virginia Code §10-1.1300 through §10.1-1320).

i. Coastal Lands Management - A state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 – 62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Administrative Code 9 VAC 25-830-10 *et seq.*).

COMMONWEALTH of VIRGINIA

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Secretary of Natural Resources

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Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:

a) Wetlands
b) Aquatic Spawning, Nursery, and Feeding Grounds
c) Coastal Primary Sand Dunes
d) Barrier Islands
e) Significant Wildlife Habitat Areas
f) Public Recreation Areas
g) Sand and Gravel Resources
h) Underwater Historic Sites.

b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:

i) Highly Erodible Areas
ii) Coastal High Hazard Areas, including flood plains.

c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:

i) Commercial Ports
ii) Commercial Fishing Piers
iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCP is encouraged.

Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCP recognizes two broad classes of priority uses for waterfront development APC:

i) water access dependent activities;
ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

Advisory Policies for Shorefront Access Planning and Protection

a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.

b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.

d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.

f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

Consistency with federal Policies of the Coastal Zone Management Program

Non-Point Source Pollution – Both the preliminary and final site plan includes an erosion and sediment control plan, in accordance with state standards to address runoff, erosion and sediment control, water quality, and dust control during the construction phase. In addition, the Final Site Plan approved by the City of Alexandria shall include a Storm Water Management Plan including pre and post development storm water calculations, discharge alternatives and planned improvements to the existing infrastructure. (Please see the attached Storm Water Management and Erosion and Sediment Control Plan).

Coastal Lands Management – the site lies outside of a Resource Protection Area; however, it is governed by the Chesapeake Bay Preservation Area Designation and Management Regulations. The City of Alexandria has adopted provisions of the Chesapeake Bay Preservation Act in its local ordinances and policies which govern the development of the subject site will be governed.

Air Pollution Control – the Developer and General Contractor will take measures to control air pollution emanating from the site, including dust control through watering the site, as necessary. Where land disturbance would not take place for an extended period of time, areas will be seeded to minimize runoff.

Asphalt Paving – paving is limited to off-site improvements related to repaving a portion of the adjacent alley following the installation of a subsurface drainage system to improve storm run-off. The proposed pavement material is consistent with the "emulsified" asphalt standards consisting of a surface coat of 1-2 inches of bituminous pavement.

Fuel-Burning Equipment - The site will have access to electrical power, the need to auxiliary power provided by fuel-burning generators will be limited. In those cases, where a fuel burning generator is needed, its usage will be in accordance with 9 VAC 5-80, Article 6, as appropriate.

Solid and Hazardous Waste and Hazardous Substances - A Phase I Environmental Assessment has been conducted on the site. There was no evidence of hazardous materials present based on the Phase I findings. Considering the date of construction of the buildings, lead-based paint may be present at the Property. In general, painted surfaces within the space were noted to be in good condition in the accessed areas. Prior lead dust wipe screening sampling performed by others in 1994 identified lead dust in one sample collected from a window sill that exceeded the HUD guideline of 500 ug/ft2. The prior lead dust wipe screening sampling was limited to five of the 14 residential units at the Property.

Given the age of the building, the City of Alexandria will require a full building survey and Pre-Demolition Asbestos survey prior to providing a demolition permit. The survey and permit issued by the City will require appropriate testing and disposition of all waste material and demolition debris. Following demolition, a Toxicity Characteristic Leaching Procedure (TCLP) will be performed to detect the level of lead and other materials to determine the appropriate method of disposal of the construction debris.

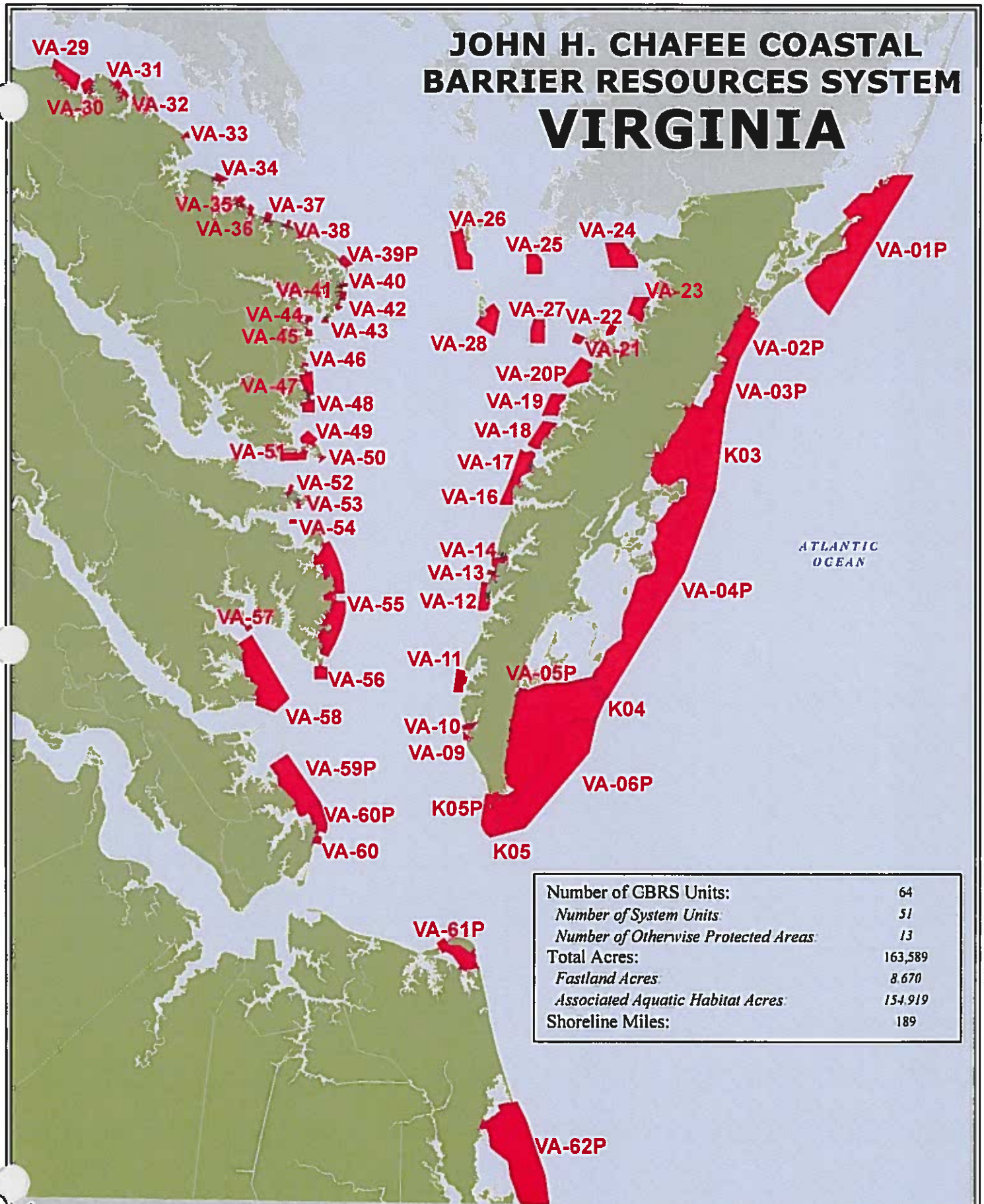
Pollution Prevention – Several best practices will be implemented as pollution prevention measures including high efficiency HVAC and insulation systems for the building.

Historic Structures/Section 106 – As Ramsey Homes has been found to have both architectural and cultural significance, ARHA, through its consultant team, has compiled extensive Historical Documentary

Reports and Archeological Investigative Studies, identified Consulting Parties who have participated in six public meetings and will be executing a Memorandum of Agreement (MOA) containing mitigating alternatives and resource management guidelines addressing the appropriate treatment of the historical resource.

Water Conservation – Several practices will be implemented to promote water conservation including the use of native plant materials as required by the Alexandria Zoning code. The use of flow restrictors on faucets, low flow toilets, use of energy star rated appliances, and monitoring leaks are a part of the routine maintenance.

JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM
VIRGINIA



Number of CBRS Units:	64
Number of System Units:	*51*
Number of Otherwise Protected Areas:	*13*
Total Acres:	163,589
Fastland Acres:	*8,670*
Associated Aquatic Habitat Acres:	*154,919*
Shoreline Miles:	189

Map Date: May 4, 2015

Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this map were transferred from the official CBRS maps for this area and are depicted on this map (in red) for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and are maintained by the U.S. Fish and Wildlife Service. The official CBRS maps are available for download at hhttp://www.fws.gov/CBRA.

Virginia's Coastal Zone

...dary Description

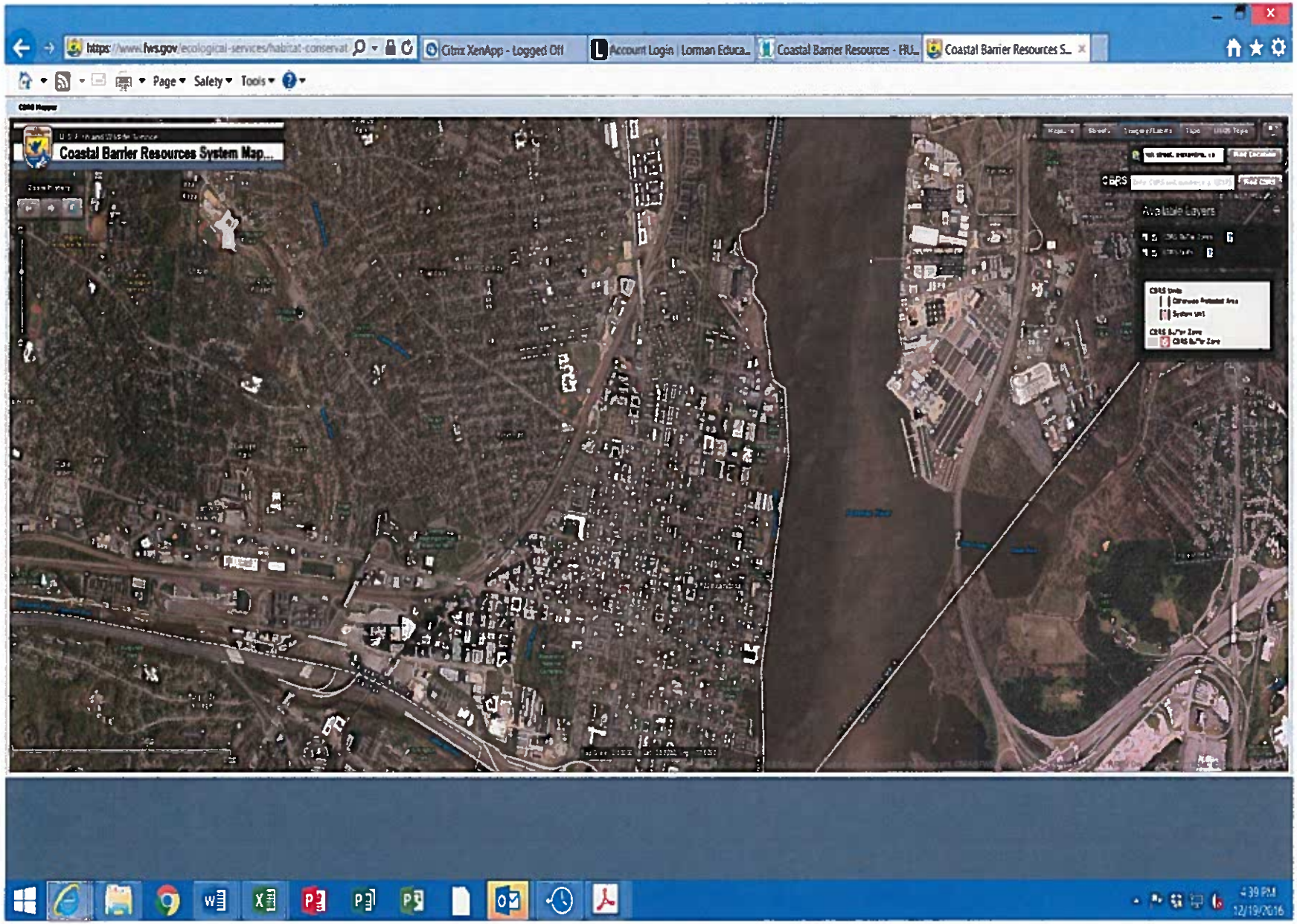
Virginia's coastal zone encompasses 29 counties, 15 cities, and 42 incorporated towns in the "Tidewater" region of the state.

Virginia's coastal zone includes 5,000 miles of shoreline, four tidal rivers reaching as far as 100 miles inland - the Potomac, Rappahannock, York, and James Rivers and all of the waters therein, and out to, the three nautical mile Territorial Sea boundary, including all of Virginia's Atlantic coast watershed as well as parts of the Chesapeake Bay and Albemarle - Pamlico Sound watersheds.

Federal Consistency

Federal consistency is the CZMA requirement where Federal agency activities, Federal license or permit activities, and Federal financial assistance activities located inside or outside the state's coastal zone that have reasonably foreseeable effects on coastal uses or resources must be consistent with the enforceable policies of the state's coastal zone management program.

Virginia Coastal Zone
MANAGEMENT PROGRAM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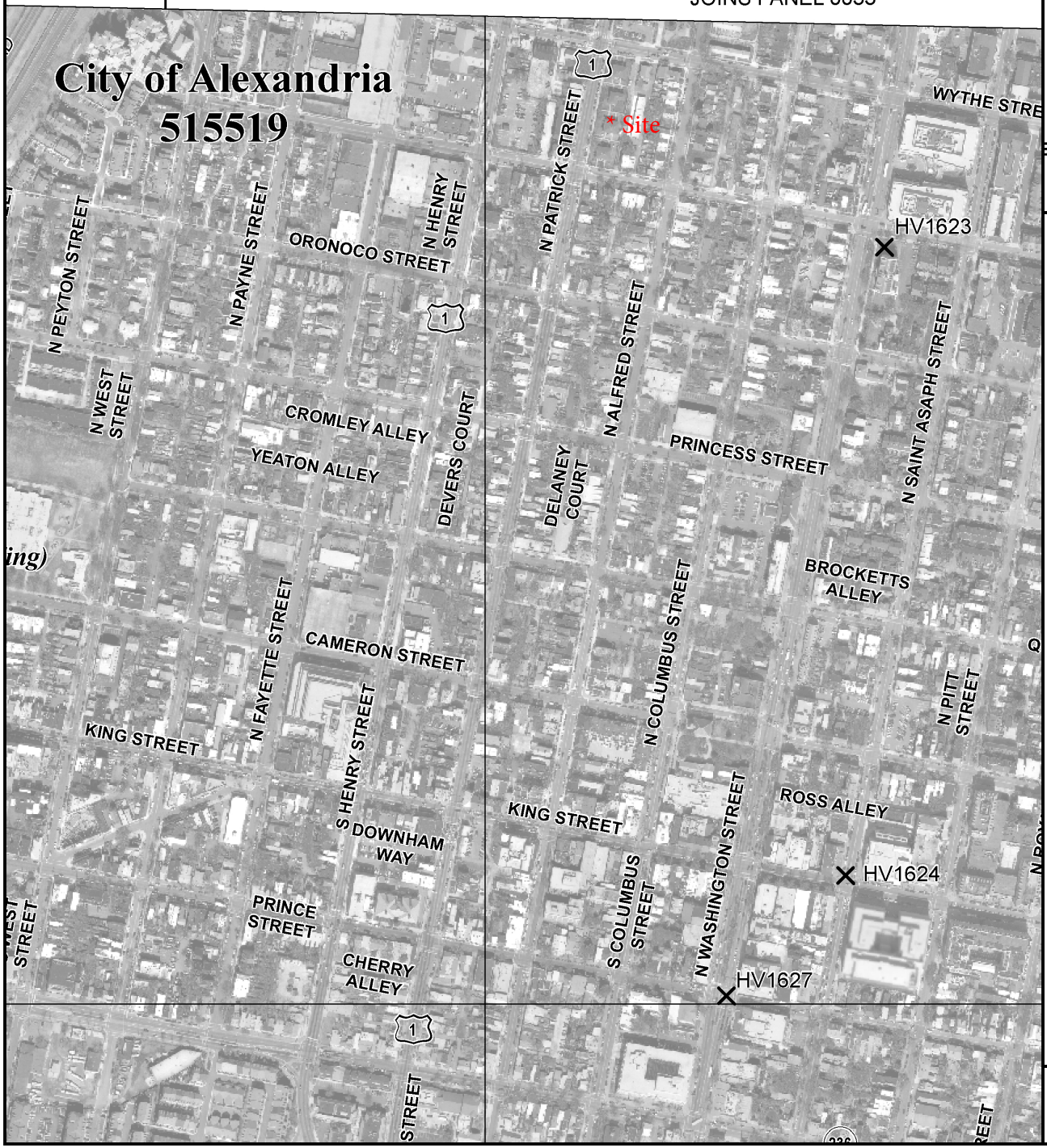
TAB 3

FLOOD INSURANCE

JOINS PANEL 0033



MAP SCALE 1" = 500'

250 0 500 1000 FEET

MET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0041E

FIRM

FLOOD INSURANCE RATE MAP

CITY OF ALEXANDRIA, VIRGINIA

INDEPENDENT CITY

PANEL 41 OF 45

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALEXANDRIA, CITY OF (INDEPENDENT CITY)	515519	0041	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
5155190041E

MAP REVISED
JUNE 16, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

TAB 4

CLEAN AIR

City of Alexandria, Virginia

MEMORANDUM

DATE: JUNE 14, 2017

TO: LUCINDA H. METCALF, COMPLIANCE MANAGER, OFFICE OF HOUSING

FROM: KHOA TRAN, ENVIRONMENTAL PROGRAM MANAGER, T&ES

SUBJECT: ENVIRONMENTAL REVIEW FOR ACTIVITIES TO BE FUNDED WITH REPLACEMENT HOUSING FACTOR FUNDING AND COMPLIANCE WITH AIR QUALITY, HAZARDOUS, WASTE DISPOSAL, AND WETLANDS – RAMSEY HOMES REDEVELOPMENT PROJECT

This is in response to your memorandum dated April 26, 2017 requesting an environmental review for the Housing Development Assistance Program in regard to the Ramsey Homes Redevelopment Project located at 699 North Patrick Street in Alexandria, VA.

AIR QUALITY STANDARDS: Alexandria is meeting the National Ambient Air Quality Standards (NAAQS) for six pollutants – carbon monoxide, lead, nitrogen dioxide, sulfur dioxide, coarse particles (PM_{10}) and fine particles ($PM_{2.5}$).

The Metro Washington region (and Alexandria) was in attainment of the 1997 $PM_{2.5}$ annual standard before this standard was revoked by EPA last year. The region is also currently in attainment of the stricter 2006 daily and 2012 annual standards for $PM_{2.5}$.

In 2008, USEPA announced a new ozone standard of 75 ppb and in May 2012, EPA designated the Washington DC Metro region as "marginal" nonattainment of this standard. However, the region has recently sent in a request to the EPA to have the region re-designated as attainment area. This request is currently under review by the EPA. Furthermore, this marginal nonattainment designation for the 2008 ozone standard should have no effect on this particular housing project being considered by your office.

WETLAND PROTECTION: This project is not expected to have any negative impacts on wetlands due to its location being remote from any present wetland in the City.

HAZARDOUS MATERIALS: The Phase I Environmental Site Assessment indicated that there might be lead paint and asbestos presence on the existing properties. As such, as the first step of the demolition process, qualified professionals will be contracted to verify these and if they are present, they will be abated and disposed of in accordance with state and federal regulations.

Please give me a call at 703-746-4076 if you have any questions on this memorandum.

7Air Quality (CEST and EA)

General Requirements	Legislation	Regulation
The Clean Air Act is administered by the U.S. Environmental Protection Agency (EPA), which sets national standards on ambient pollutants. In addition, the Clean Air Act is administered by States, which must develop State Implementation Plans (SIPs) to regulate their state air quality. Projects funded by HUD must demonstrate that they conform to the appropriate SIP.	Clean Air Act (42 USC 7401 et seq.) as amended particularly Section 176(c) and (d) (42 USC 7506(c) and (d))	40 CFR Parts 6, 51 and 93
Reference		
https://www.hudexchange.info/environmental-review/air-quality		

Scope of Work

1. **Does your project include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities OR five or more dwelling units?**

   ☒ Yes

   → *Continue to Question 2.*

   ☐ No

   Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.

Air Quality Attainment Status of Project's County or Air Quality Management District

2. **Is your project's air quality management district or county in non-attainment or maintenance status for any criteria pollutants?**
   Follow the link below to determine compliance status of project county or air quality management district:
   http://www.epa.gov/oaqps001/greenbk/

   ☐ No, project's county or air quality management district is in attainment status for all criteria pollutants

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☒ Yes, project's management district or county is in non-attainment or maintenance status for one or more criteria pollutants.

Describe the findings:

8-Hour Ozone (2008) Nonattainment Area State/Area/County Report Carbon Monoxide (1971) Designated Area State/Area/County Report

→ *Continue to Question 3.*

3. **Determine the <u>estimated emissions levels of your project for each of those criteria pollutants</u> that are in non-attainment or maintenance status on your project area. Will your project exceed any of the *de minimis or threshold* emissions levels of non-attainment and maintenance level pollutants or exceed the screening levels established by the state or air quality management district?**

☒ No, the project will not exceed *de minimis* or threshold emissions levels or screening levels

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Explain how you determined that the project would not exceed de minimis or threshold emissions.*

☐ Yes, the project exceeds *de minimis* emissions levels or screening levels.

→ *Continue to Question 4. Explain how you determined that the project would not exceed de minimis or threshold emissions in the Worksheet Summary.*

4. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**

In a letter dated, May 20, 2012, EPA designated Washington DC Metro as a "Marginal" nonattainment of the ozone standard of 75ppb should have no effect on housing projects being considered.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

PENNSYLVANIA (Region III)

Allentown-Bethlehem-Easton, PA (Marginal - Nonattainment)

Carbon Co
Lehigh Co
Northampton Co

GEORGIA (Region IV)

Atlanta, GA (Moderate - Nonattainment)

Bartow Co
Cherokee Co
Clayton Co
Cobb Co
Coweta Co
De Kalb Co
Douglas Co
Fayette Co
Forsyth Co
Fulton Co
Gwinnett Co
Henry Co
Newton Co
Paulding Co
Rockdale Co

MARYLAND (Region III)

Baltimore, MD (Moderate - Nonattainment)

Anne Arundel Co
Baltimore (City)
Baltimore Co
Carroll Co
Harford Co
Howard Co

LOUISIANA (Region VI)

Baton Rouge, LA (Marginal - Nonattainment)

Ascension Par
East Baton Rouge Par

Iberville Par
Livingston Par
West Baton Rouge Par

CALIFORNIA (Region IX)

Calaveras County, CA (Marginal - Nonattainment)
Calaveras Co

NORTH CAROLINA (Region IV)

Charlotte-Rock Hill, NC-SC (Marginal - Maintenance)
Cabarrus Co (P)
Gaston Co (P)
Iredell Co (P)
Lincoln Co (P)
Mecklenburg Co
Rowan Co (P)
Union Co (P)

SOUTH CAROLINA (Region IV)

Charlotte-Rock Hill, NC-SC (Marginal - Maintenance)
York Co (P)

ILLINOIS (Region V)

Chicago-Naperville, IL-IN-WI (Moderate - Nonattainment)
Cook Co
Du Page Co
Grundy Co (P)
Kane Co
Kendall Co (P)
Lake Co
Mc Henry Co
Will Co

INDIANA (Region V)

Chicago-Naperville, IL-IN-WI (Moderate - Nonattainment)
Lake Co
Porter Co

WISCONSIN (Region V)

Chicago-Naperville, IL-IN-WI (Moderate - Nonattainment)
Kenosha Co (P)

CALIFORNIA (Region IX)

Chico (Butte County), CA (Marginal - Nonattainment)

Butte Co

INDIANA (Region V)

Cincinnati, OH-KY-IN (Marginal - Nonattainment)

Dearborn Co (P)

Lawrenceburg Township

KENTUCKY (Region IV)

Cincinnati, OH-KY-IN (Marginal - Nonattainment)

Boone Co (P)

Campbell Co (P)

Kenton Co (P)

OHIO (Region V)

Cincinnati, OH-KY-IN (Marginal - Nonattainment)

Butler Co

Clermont Co

Clinton Co

Hamilton Co

Warren Co

Cleveland-Akron-Lorain, OH (Marginal - Nonattainment)

Ashtabula Co

Cuyahoga Co

Geauga Co

Lake Co

Lorain Co

Medina Co

Portage Co

Summit Co

Columbus, OH (Marginal - Nonattainment)

Delaware Co

Fairfield Co

Franklin Co

Knox Co

Licking Co

Madison Co

TEXAS (Region VI)

Dallas-Fort Worth, TX (Moderate - Nonattainment)

Collin Co
Dallas Co
Denton Co
Ellis Co
Johnson Co
Kaufman Co
Parker Co
Rockwall Co
Tarrant Co
Wise Co

COLORADO (Region VIII)

Denver-Boulder-Greeley-Ft. Collins-Loveland, CO (Moderate - Nonattainment)

Adams Co
Arapahoe Co
Boulder Co
Broomfield Co
Denver Co
Douglas Co
Jefferson Co
Larimer Co (P)
Weld Co (P)

MASSACHUSETTS (Region I)

Dukes County, MA (Marginal - Nonattainment)

Dukes Co

CONNECTICUT (Region I)

Greater Connecticut, CT (Moderate - Nonattainment)

Hartford Co
Litchfield Co
New London Co
Tolland Co
Windham Co

TEXAS (Region VI)

Houston-Galveston-Brazoria, TX (Marginal - Nonattainment)

Brazoria Co

Chambers Co
Fort Bend Co
Galveston Co
Harris Co
Liberty Co
Montgomery Co
Waller Co

CALIFORNIA (Region IX)

Imperial County, CA (Moderate – Nonattainment)
Imperial Co

NEW YORK (Region II)

Jamestown, NY (Marginal – Nonattainment)
Chautauqua Co

CALIFORNIA (Region IX)

Kern Co (Eastern Kern), CA (Moderate – Nonattainment)
Kern Co (P)

TENNESSEE (Region IV)

Knoxville, TN (Marginal – Maintenance)
Anderson Co (P)
Blount Co
Knox Co

PENNSYLVANIA (Region III)

Lancaster, PA (Marginal – Nonattainment)
Lancaster Co

CALIFORNIA (Region IX)

Los Angeles-San Bernardino Counties (West Mojave Desert), CA (Severe 15 – Nonattainment)
Los Angeles Co (P)
San Bernardino Co (P)

Los Angeles-South Coast Air Basin, CA (Extreme – Nonattainment)
Los Angeles Co (P)
Orange Co
Riverside Co (P)
San Bernardino Co (P)

Mariposa County, CA (Moderate - Nonattainment)
Mariposa Co

ARKANSAS (Region VI)
Memphis, TN-MS-AR (Marginal - Maintenance)
Crittenden Co

MISSISSIPPI (Region IV)
Memphis, TN-MS-AR (Marginal - Maintenance)
De Soto Co (P)
Portion along MPO Lines

TENNESSEE (Region IV)
Memphis, TN-MS-AR (Marginal - Maintenance)
Shelby Co

CALIFORNIA (Region IX)
Morongo Band of Mission Indians (Serious - Nonattainment)
Riverside Co (P)

Nevada Co. (Western part), CA (Moderate - Nonattainment)
Nevada Co (P)

CONNECTICUT (Region I)
New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate - Nonattainment)
Fairfield Co
Middlesex Co
New Haven Co

NEW JERSEY (Region II)
New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate - Nonattainment)
Bergen Co
Essex Co
Hudson Co
Hunterdon Co
Middlesex Co
Monmouth Co
Morris Co
Passaic Co
Somerset Co
Sussex Co

Union Co
Warren Co

NEW YORK (Region II)

New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate - Nonattainment)

Bronx Co
Kings Co
Nassau Co
New York Co
Queens Co
Richmond Co
Rockland Co
Suffolk Co
Westchester Co

CALIFORNIA (Region IX)

Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation (Moderate - Nonattainment)

Riverside Co (P)
San Diego Co (P)

DELAWARE (Region III)

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)

New Castle Co

MARYLAND (Region III)

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)

Cecil Co

NEW JERSEY (Region II)

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)

Atlantic Co
Burlington Co
Camden Co
Cape May Co
Cumberland Co
Gloucester Co
Mercer Co
Ocean Co
Salem Co

PENNSYLVANIA (Region III)

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)

Bucks Co
Chester Co
Delaware Co
Montgomery Co
Philadelphia Co

ARIZONA (Region IX)

Phoenix-Mesa, AZ (Moderate - Nonattainment)

Maricopa Co (P)
Pinal Co (P)

PENNSYLVANIA (Region III)

Pittsburgh-Beaver Valley, PA (Marginal - Nonattainment)

Allegheny Co
Armstrong Co
Beaver Co
Butler Co
Fayette Co
Washington Co
Westmoreland Co

Reading, PA (Marginal - Nonattainment)

Berks Co

CALIFORNIA (Region IX)

Riverside Co. (Coachella Valley), CA (Severe 15 - Nonattainment)

Riverside Co (P)

Sacramento Metro, CA (Severe 15 - Nonattainment)

El Dorado Co (P)
Placer Co (P)
Sacramento Co
Solano Co (P)
Sutter Co (P)
Yolo Co

San Diego County, CA (Moderate - Nonattainment)

San Diego Co (P)

San Francisco Bay Area, CA (Marginal - Nonattainment)

Alameda Co
Contra Costa Co
Marin Co
Napa Co
San Francisco Co
San Mateo Co
Santa Clara Co
Solano Co (P)
Sonoma Co (P)

San Joaquin Valley, CA (Extreme - Nonattainment)

Fresno Co
Kern Co (P)
Kings Co
Madera Co
Merced Co
San Joaquin Co
Stanislaus Co
Tulare Co

San Luis Obispo (Eastern San Luis Obispo), CA (Marginal - Nonattainment)

San Luis Obispo Co (P)

DELAWARE (Region III)

Seaford, DE (Marginal - Nonattainment)

Sussex Co

WISCONSIN (Region V)

Sheboygan County, Wi (Marginal - Nonattainment)

Sheboygan Co

ILLINOIS (Region V)

St. Louis-St. Charles-Farmington, MO-IL (Marginal - Nonattainment)

Madison Co
Monroe Co
St Clair Co

MISSOURI (Region VII)

St. Louis-St. Charles-Farmington, MO-IL (Marginal - Nonattainment)

Franklin Co

Jefferson Co
St Charles Co
St Louis
St Louis Co

CALIFORNIA (Region IX)

Tuscan Buttes, CA (Marginal - Nonattainment)
Tehama Co (P)

WYOMING (Region VIII)

Upper Green River Basin Area, WY (Marginal - Nonattainment)
Lincoln Co (P)
Sublette Co
Sweetwater Co (P)

CALIFORNIA (Region IX)

Ventura County, CA (Serious - Nonattainment)
Ventura Co (P)

DISTRICT OF COLUMBIA (Region III)

Washington, DC-MD-VA (Marginal - Nonattainment)
Entire District

MARYLAND (Region III)

Washington, DC-MD-VA (Marginal - Nonattainment)
Calvert Co
Charles Co
Frederick Co
Montgomery Co
Prince George's Co

VIRGINIA (Region III)

Washington, DC-MD-VA (Marginal - Nonattainment)
Alexandria
Arlington Co
Fairfax
Fairfax Co
Falls Church
Loudoun Co
Manassas
Manassas Park

EPA United States Environmental Protection Agency

Green Book

Carbon Monoxide (1971) Designated Area State/Area/County Report

As of September 22, 2016

ALASKA (Region X)

Anchorage, AK (Serious - Maintenance)
Anchorage Municipality (P)
Portion of Anchorage urban area

Fairbanks, AK (Serious - Maintenance)
Fairbanks North Star Borough (P)
Portion of Fairbanks urban area

ARIZONA (Region IX)

Phoenix, AZ (Serious - Maintenance)
Maricopa Co (P)

Tucson, AZ (Not Classified - Maintenance)
Pima Co (P)
Portion of Tucson urban area

CALIFORNIA (Region IX)

Bakersfield, CA (Not Classified - Maintenance)
Kern Co (P)

Chico, CA (Moderate <= 12.7ppm - Maintenance)
Butte Co (P)

Fresno, CA (Moderate > 12.7ppm - Maintenance)
Fresno Co (P)
Fresno Urbanized Area (11/20/85, 50 FR 47735)

Lake Tahoe North Shore, CA (Not Classified - Maintenance)
Placer Co (P)

Lake Tahoe South Shore, CA (Moderate <= 12.7ppm - Maintenance)
El Dorado Co (P)

Los Angeles-South Coast Air Basin, CA (Serious - Maintenance)
Los Angeles Co (P)
Orange Co
Riverside Co (P)
San Bernardino Co (P)

Modesto, CA (Moderate <= 12.7ppm - Maintenance)
Stanislaus Co (P)

Sacramento, CA (Moderate <= 12.7ppm - Maintenance)
Placer Co (P)
Sacramento Co (P)
Yolo Co (P)

San Diego, CA (Moderate <= 12.7ppm - Maintenance)
San Diego Co (P)

San Francisco-Oakland-San Jose, CA (Moderate <= 12.7ppm - Maintenance)
Alameda Co (P)
Contra Costa Co (P)
Marin Co (P)
Napa Co (P)
San Francisco Co
San Mateo Co (P)
Santa Clara Co (P)
Solano Co (P)
Sonoma Co (P)

Stockton, CA (Moderate <= 12.7ppm - Maintenance)

San Joaquin Co (P)

COLORADO (Region VIII)

Colorado Springs, CO (Moderate <= 12.7ppm - Maintenance)
El Paso Co (P)
Teller Co (P)

Denver-Boulder, CO (Serious - Maintenance)
Adams Co (P)
Denver Metro Area
Arapahoe Co (P)
Denver Metro Area
Boulder Co (P)
Denver Metro Area
Broomfield Co
Denver Co
Douglas Co (P)
Denver Metro Area
Jefferson Co (P)
Denver Metro Area

Fort Collins, CO (Moderate <= 12.7ppm - Maintenance)
Larimer Co (P)

Greeley, CO (Not Classified - Maintenance)
Weld Co (P)

Longmont, CO (Moderate <= 12.7ppm - Maintenance)
Boulder Co (P)
Portion of Longmont
Weld Co (P)
Portion of Longmont

CONNECTICUT (Region I)

Hartford-New Britain-Middletown, CT (Moderate <= 12.7ppm - Maintenance)
Hartford Co (P)
Litchfield Co (P)
Plymouth Town
Middlesex Co (P)
Tolland Co (P)

New Haven-Meriden-Waterbury, CT (Not Classified - Maintenance)
Fairfield Co (P)
Shelton City
Litchfield Co (P)
Bethlehem Town, Thomaston Town, Watertown, Woodbury Town.
New Haven Co

New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate > 12.7ppm - Maintenance)
Fairfield Co (P)
All cities and townships except Shelton city
Litchfield Co (P)
Bridgewater town, New Milford town

DISTRICT OF COLUMBIA (Region III)

Washington, DC-MD-VA (Moderate <= 12.7ppm - Maintenance)
Entire District

IDAHO (Region X)

Boise-Northern Ada County, ID (Not Classified - Maintenance)
Ada Co (P)
Northern half of Ada Co

INDIANA (Region V)

East Chicago, IN (Not Classified - Maintenance)
Lake Co (P)

Indianapolis, IN (Not Classified - Maintenance)
Marion Co (P)

MARYLAND (Region III)

Baltimore, MD (Moderate <= 12.7ppm - Maintenance)

Baltimore (City) (P)

Washington, DC-MD-VA (Moderate <= 12.7ppm - Maintenance)
Montgomery Co (P)
Election Districts 4, 7, 13
Prince George's Co (P)
Election Districts 2, 6, 12, 16, 17, 18

MASSACHUSETTS (Region I)
Boston, MA (Moderate <= 12.7ppm - Maintenance)
Middlesex Co (P)
Cities of: Cambridge, Everett, Malden, Medford, and Somerville.
Norfolk Co (P)
Quincy City
Suffolk Co (P)
Cities of: Boston, Chelsea, and Revere

Lowell, MA (Not Classified - Maintenance)
Middlesex Co (P)
Lowell City

Springfield, MA (Not Classified - Maintenance)
Hampden Co (P)
Springfield City

Waltham, MA (Not Classified - Maintenance)
Middlesex Co (P)
Waltham City

Worcester, MA (Not Classified - Maintenance)
Worcester Co (P)
City of Worcester

MICHIGAN (Region V)
Detroit, MI (Not Classified - Maintenance)
Macomb Co (P)
A portion of Detroit
Oakland Co (P)
A portion of Detroit
Wayne Co (P)
A portion of Detroit

MINNESOTA (Region V)
Duluth, MN (Moderate <= 12.7ppm - Maintenance)
St Louis Co (P)
City of Duluth

Minneapolis-St. Paul, MN (Moderate <= 12.7ppm - Maintenance)
Anoka Co
Carver Co (P)
Dakota Co (P)
Hennepin Co
Ramsey Co
Scott Co (P)
Washington Co (P)
All cities and townships except Denmark Township.
Wright Co (P)

MISSOURI (Region VII)
St. Louis, MO (Not Classified - Maintenance)
St Louis
St Louis Co (P)
The area encompassed by the I-270 and the Mississippi River

MONTANA (Region VIII)
Billings, MT (Not Classified - Maintenance)
Yellowstone Co (P)
Certain ranges and townships

Great Falls, MT (Not Classified - Maintenance)
Cascade Co (P)

Missoula, MT (Moderate <= 12.7ppm - Maintenance)
Missoula Co (P)

NEVADA (Region IX)
Lake Tahoe, NV (Not Classified - Maintenance)
Carson City (P)
Hydrographic Area 90
Douglas Co (P)
Hydrographic Area 90
Washoe Co (P)
Hydrographic Area 90

Las Vegas, NV (Serious - Maintenance)
Clark Co (P)
Las Vegas Valley Hydrographic Area 212

Reno, NV (Moderate <= 12.7ppm - Maintenance)
Washoe Co (P)
Truckee Meadows Hydrographic Area 87

NEW HAMPSHIRE (Region I)
Manchester, NH (Not Classified - Maintenance)
Hillsborough Co (P)
City of Manchester

Nashua, NH (Not Classified - Maintenance)
Hillsborough Co (P)
City of Nashua

NEW JERSEY (Region II)
Atlantic City, NJ (Not Classified - Maintenance)
Atlantic Co (P)
The City of Atlantic City

Burlington, NJ (Not Classified - Maintenance)
Burlington Co (P)
City of Burlington

Freehold, NJ (Not Classified - Maintenance)
Monmouth Co (P)
Borough of Freehold

Morristown, NJ (Not Classified - Maintenance)
Morris Co (P)
City of Morristown

New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate > 12.7ppm - Maintenance)
Bergen Co
Essex Co
Hudson Co
Passaic Co (P)
City of Clifton, City of Patterson, City of Passaic
Union Co

Penns Grove, NJ (Not Classified - Maintenance)
Salem Co (P)

Perth Amboy, NJ (Not Classified - Maintenance)
Middlesex Co (P)
City of Perth Amboy

Philadelphia-Camden Co, PA-NJ (Moderate <= 12.7ppm - Maintenance)
Camden Co

Somerville, NJ (Not Classified - Maintenance)
Somerset Co (P)
Borough of Somerville

Toms River, NJ (Not Classified - Maintenance)
Ocean Co (P)
City of Toms River

Trenton, NJ (Not Classified - Maintenance)
Mercer Co (P)
City of Trenton

NEW MEXICO (Region VI)
Albuquerque, NM (Moderate <= 12.7ppm - Maintenance)
Bernalillo Co

NEW YORK (Region II)
New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate > 12.7ppm - Maintenance)
Bronx Co
Kings Co
Nassau Co
New York Co
Queens Co
Richmond Co
Westchester Co

Syracuse, NY (Moderate <= 12.7ppm - Maintenance)
Onondaga Co

NORTH CAROLINA (Region IV)
Charlotte, NC (Not Classified - Maintenance)
Mecklenburg Co

Raleigh-Durham, NC (Moderate <= 12.7ppm - Maintenance)
Durham Co
Wake Co

Winston-Salem, NC (Moderate <= 12.7ppm - Maintenance)
Forsyth Co

OHIO (Region V)
Cleveland, OH (Moderate <= 12.7ppm - Maintenance)
Cuyahoga Co

OREGON (Region X)
Eugene-Springfield, OR (Not Classified - Maintenance)
Lane Co (P)
Air Quality Maintenance Area

Grants Pass, OR (Moderate <= 12.7ppm - Maintenance)
Josephine Co (P)
Central Business District

Klamath Falls, OR (Moderate <= 12.7ppm - Maintenance)
Klamath Co (P)
Urban Growth Boundary

Medford, OR (Moderate <= 12.7ppm - Maintenance)
Jackson Co (P)
Medford-Ashland Urban Growth Boundary

Portland, OR (Moderate <= 12.7ppm - Maintenance)
Clackamas Co (P)
Portland Metro Service District Boundary
Multnomah Co (P)
Portland Metro Service District Boundary
Washington Co (P)
Portland Metro Service District Boundary

Salem, OR (Not Classified - Maintenance)
Marion Co (P)
City of Salem
Polk Co (P)
City of Salem

PENNSYLVANIA (Region III)
Philadelphia-Camden Co. PA-NJ (Moderate <= 12.7ppm - Maintenance)
Philadelphia Co (P)

Pittsburgh, PA (Not Classified - Maintenance)

Allegheny Co (P)

TENNESSEE (Region IV)

Memphis, TN (Moderate <= 12.7ppm - Maintenance)
Shelby Co

TEXAS (Region VI)

El Paso, TX (Moderate <= 12.7ppm - Maintenance)
El Paso Co (P)
Portion of the City Limits of El Paso

UTAH (Region VIII)

Ogden, UT (Moderate <= 12.7ppm - Maintenance)
Weber Co (P)
City of Ogden

Provo, UT (Moderate > 12.7ppm - Maintenance)
Utah Co (P)
City of Provo

Salt Lake City, UT (Not Classified - Maintenance)
Salt Lake Co (P)
Salt Lake City

VIRGINIA (Region III)

Washington, DC-MD-VA (Moderate <= 12.7ppm - Maintenance)
Alexandria
Arlington Co

WASHINGTON (Region X)

Seattle-Tacoma, WA (Moderate > 12.7ppm - Maintenance)
King Co (P)
Pierce Co (P)
Snohomish Co (P)

Spokane, WA (Serious - Maintenance)
Spokane Co (P)

Vancouver, WA (Moderate <= 12.7ppm - Maintenance)
Clark Co (P)

Yakima, WA (Not Classified - Maintenance)
Yakima Co (P)
Portion of the Central Business District

Go Top

EPA United States Environmental Protection Agency

Green Book

8-Hour Ozone (2008) Nonattainment Area State/Area/County Report

As of September 22, 2016

ARIZONA (Region IX)

Phoenix-Mesa, AZ (Moderate - Nonattainment)
- Maricopa Co (P)
- Pinal Co (P)

CALIFORNIA (Region IX)

Calaveras County, CA (Marginal - Nonattainment)
- Calaveras Co

Chico (Butte County), CA (Marginal - Nonattainment)
- Butte Co

Imperial County, CA (Moderate - Nonattainment)
- Imperial Co

Kern Co (Eastern Kern), CA (Moderate - Nonattainment)
- Kern Co (P)

Los Angeles-San Bernardino Counties (West Mojave Desert), CA (Severe 15 - Nonattainment)
- Los Angeles Co (P)
- San Bernardino Co (P)

Los Angeles-South Coast Air Basin, CA (Extreme - Nonattainment)
- Los Angeles Co (P)
- Orange Co
- Riverside Co (P)
- San Bernardino Co (P)

Mariposa County, CA (Moderate - Nonattainment)
- Mariposa Co

Morongo Band of Mission Indians (Serious - Nonattainment)
- Riverside Co (P)

Nevada Co. (Western part), CA (Moderate - Nonattainment)
- Nevada Co (P)

Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation (Moderate - Nonattainment)
- Riverside Co (P)
- San Diego Co (P)

Riverside Co. (Coachella Valley), CA (Severe 15 - Nonattainment)
- Riverside Co (P)

Sacramento Metro, CA (Severe 15 - Nonattainment)
- El Dorado Co (P)
- Placer Co (P)
- Sacramento Co
- Solano Co (P)
- Sutter Co (P)
- Yolo Co

San Diego County, CA (Moderate - Nonattainment)
- San Diego Co (P)

San Francisco Bay Area, CA (Marginal - Nonattainment)
- Alameda Co
- Contra Costa Co
- Marin Co
- Napa Co
- San Francisco Co
- San Mateo Co
- Santa Clara Co

Solano Co (P)
Sonoma Co (P)

San Joaquin Valley, CA (Extreme - Nonattainment)
Fresno Co
Kern Co (P)
Kings Co
Madera Co
Merced Co
San Joaquin Co
Stanislaus Co
Tulare Co

San Luis Obispo (Eastern San Luis Obispo), CA (Marginal - Nonattainment)
San Luis Obispo Co (P)

Tuscan Buttes, CA (Marginal - Nonattainment)
Tehama Co (P)

Ventura County, CA (Serious - Nonattainment)
Ventura Co (P)

COLORADO (Region VIII)
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO (Moderate - Nonattainment)
Adams Co
Arapahoe Co
Boulder Co
Broomfield Co
Denver Co
Douglas Co
Jefferson Co
Larimer Co (P)
Weld Co (P)

CONNECTICUT (Region I)
Greater Connecticut, CT (Moderate - Nonattainment)
Hartford Co
Litchfield Co
New London Co
Tolland Co
Windham Co

New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate - Nonattainment)
Fairfield Co
Middlesex Co
New Haven Co

DELAWARE (Region III)
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)
New Castle Co

Seaford, DE (Marginal - Nonattainment)
Sussex Co

DISTRICT OF COLUMBIA (Region III)
Washington, DC-MD-VA (Marginal - Nonattainment)
Entire District

GEORGIA (Region IV)
Atlanta, GA (Moderate - Nonattainment)
Bartow Co
Cherokee Co
Clayton Co
Cobb Co
Coweta Co
De Kalb Co
Douglas Co
Fayette Co
Forsyth Co
Fulton Co
Gwinnett Co
Henry Co

Newton Co
Paulding Co
Rockdale Co

ILLINOIS (Region V)
Chicago-Naperville, IL-IN-WI (Moderate - Nonattainment)
Cook Co
Du Page Co
Grundy Co (P)
Kane Co
Kendall Co (P)
Lake Co
Mc Henry Co
Will Co

St. Louis-St. Charles-Farmington, MO-IL (Marginal - Nonattainment)
Madison Co
Monroe Co
St Clair Co

INDIANA (Region V)
Chicago-Naperville, IL-IN-WI (Moderate - Nonattainment)
Lake Co
Porter Co

Cincinnati, OH-KY-IN (Marginal - Nonattainment)
Dearborn Co (P)
Lawrenceburg Township

KENTUCKY (Region IV)
Cincinnati, OH-KY-IN (Marginal - Nonattainment)
Boone Co (P)
Campbell Co (P)
Kenton Co (P)

LOUISIANA (Region VI)
Baton Rouge, LA (Marginal - Nonattainment)
Ascension Par
East Baton Rouge Par
Iberville Par
Livingston Par
West Baton Rouge Par

MARYLAND (Region III)
Baltimore, MD (Moderate - Nonattainment)
Anne Arundel Co
Baltimore (City)
Baltimore Co
Carroll Co
Harford Co
Howard Co

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)
Cecil Co

Washington, DC-MD-VA (Marginal - Nonattainment)
Calvert Co
Charles Co
Frederick Co
Montgomery Co
Prince George's Co

MASSACHUSETTS (Region I)
Dukes County, MA (Marginal - Nonattainment)
Dukes Co

MISSOURI (Region VII)
St. Louis-St. Charles-Farmington, MO-IL (Marginal - Nonattainment)
Franklin Co
Jefferson Co
St Charles Co

St Louis
St Louis Co

NEW JERSEY (Region II)

New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate - Nonattainment)
Bergen Co
Essex Co
Hudson Co
Hunterdon Co
Middlesex Co
Monmouth Co
Morris Co
Passaic Co
Somerset Co
Sussex Co
Union Co
Warren Co

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)
Atlantic Co
Burlington Co
Camden Co
Cape May Co
Cumberland Co
Gloucester Co
Mercer Co
Ocean Co
Salem Co

NEW YORK (Region II)

Jamestown, NY (Marginal - Nonattainment)
Chautauqua Co

New York-N. New Jersey-Long Island, NY-NJ-CT (Moderate - Nonattainment)
Bronx Co
Kings Co
Nassau Co
New York Co
Queens Co
Richmond Co
Rockland Co
Suffolk Co
Westchester Co

OHIO (Region V)

Cincinnati, OH-KY-IN (Marginal - Nonattainment)
Butler Co
Clermont Co
Clinton Co
Hamilton Co
Warren Co

Cleveland-Akron-Lorain, OH (Marginal - Nonattainment)
Ashtabula Co
Cuyahoga Co
Geauga Co
Lake Co
Lorain Co
Medina Co
Portage Co
Summit Co

Columbus, OH (Marginal - Nonattainment)
Delaware Co
Fairfield Co
Franklin Co
Knox Co
Licking Co
Madison Co

PENNSYLVANIA (Region III)

Allentown-Bethlehem-Easton, PA (Marginal - Nonattainment)

Carbon Co
Lehigh Co
Northampton Co

Lancaster, PA (Marginal - Nonattainment)
Lancaster Co

Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (Marginal - Nonattainment)
Bucks Co
Chester Co
Delaware Co
Montgomery Co
Philadelphia Co

Pittsburgh-Beaver Valley, PA (Marginal - Nonattainment)
Allegheny Co
Armstrong Co
Beaver Co
Butler Co
Fayette Co
Washington Co
Westmoreland Co

Reading, PA (Marginal - Nonattainment)
Berks Co

TEXAS (Region VI)
Dallas-Fort Worth, TX (Moderate - Nonattainment)
Collin Co
Dallas Co
Denton Co
Ellis Co
Johnson Co
Kaufman Co
Parker Co
Rockwall Co
Tarrant Co
Wise Co

Houston-Galveston-Brazoria, TX (Marginal - Nonattainment)
Brazoria Co
Chambers Co
Fort Bend Co
Galveston Co
Harris Co
Liberty Co
Montgomery Co
Waller Co

VIRGINIA (Region III)
Washington, DC-MD-VA (Marginal - Nonattainment)
Alexandria
Arlington Co
Fairfax
Fairfax Co
Falls Church
Loudoun Co
Manassas
Manassas Park
Prince William Co

WISCONSIN (Region V)
Chicago-Naperville, IL-IN-WI (Moderate - Nonattainment)
Kenosha Co (P)

Sheboygan County, WI (Marginal - Nonattainment)
Sheboygan Co

WYOMING (Region VIII)
Upper Green River Basin Area, WY (Marginal - Nonattainment)
Lincoln Co (P)
Sublette Co

TAB 5

COASTAL ZONE MANAGEMENT

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Mailing address: P.O. Box 1105, Richmond, Virginia 23218
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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
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March 13, 2017

Mr. Leroy W. Battle
Project Manager
Alexandria Redevelopment and Housing Authority
401 Wythe Street
Alexandria, VA 22314

RE: Federal Consistency Review, Ramsey Homes Project, City of Alexandria (DEQ #1903)

Dear Mr. Battle:

The Department of Environmental Quality (DEQ) is responsible for reviewing federal consistency documents and responding to appropriate agencies on behalf of the Commonwealth of Virginia. In accordance with the *Federal Consistency Regulations* at 15 CFR Part 930, Subpart F ("Consistency for Federal Assistance to State and Local Governments"), sections 930.90 through 930.101 and Executive Order 12372, DEQ reviews federal agency applications for financial assistance activities that are listed in the Commonwealth's management program as a type of activity that will have a reasonably foreseeable effect on any coastal use or resource and occurring within the coastal zone (§ 930.95(a)) or within a described geographic area outside of the coastal zone (§ 930.95(b)). Accordingly, DEQ has completed its review of the above-referenced proposal.

PROJECT DESCRIPTION

According to the February 6, 2017 letter (received March 3, 2017), submitted by the Alexandria Redevelopment and Housing Authority (ARHA), the ARHA has received Replacement Housing Factor Funds, federally funded by the Department of Housing and Urban Development (HUD) to construct the Ramsey Homes Project in Alexandria, Virginia. The property, located at 699 N. Patrick Street, was acquired by the ARHA in 1953 and used for public housing. The project involves the demolition of the existing four multi-family buildings consisting of 15 residential units, originally constructed in the 1940's, and construction of a new 3-4 story, 52-unit, multifamily building. The federal consistency certification (FCC) states that the proposed activity will be consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

FEDERAL CONSISTENCY

This project is consistent with the Virginia Coastal Zone Management Program (CZM), provided all applicable permits or approvals listed under "Enforceable Policies of Virginia's Coastal Zone Management Program" (Attachment 1) are received prior to implementation of the project. Accordingly, if any of the enforceable policies apply, please contact the relevant agencies to obtain applicable permits or approvals. DEQ's Northern Regional Office (DEQ-NRO, telephone 703-583-3800) administers the enforceable policies listed under DEQ's jurisdiction. Please contact that office for assistance in meeting the requirements of applicable programs.

The project must comply with all other applicable federal, state and local laws and regulations. In general, to the extent practicable, development must incorporate features that prevent significant adverse impacts on ambient air quality, water quality, wetlands, historic structures, fish and wildlife, and species of plants, animals, or insects listed by state agencies as rare, threatened, or endangered.

FEDERAL CONSISTENCY ANALYSIS

The analysis that follows addresses the enforceable policies of the Virginia CZM program that may apply to the proposed development project.

1. Nonpoint Source Pollution Control. The FCC (page 2) indicates that the project will comply with the City of Alexandria's Erosion and Sediment Control Code, Section 5, Chapter 4. Construction projects that disturb 2,500 square feet or more are required to have a City approved pollution prevent plan. Appropriate construction site runoff controls must also be installed.

1(a) Agency Jurisdiction. The DEQ Office of Stormwater Management (OSWM) administers the nonpoint source pollution control enforceable policy through the *Virginia Erosion and Sediment Control Law and Regulations* (*VESCL&R*) and *Virginia Stormwater Management Law and Regulations* (*VSWML&R*). In addition, DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land-disturbing activities under the Virginia Stormwater Management Program.

1(b) Requirements.

1(b)(i) Erosion and Sediment Control Plan. The applicant is responsible for submitting a project-specific erosion and sediment control (ESC) plan to the appropriate locality for review and approval pursuant to the local ESC requirements, should the project involve a land-disturbing activity equal to or greater than 2,500 square feet in a Chesapeake Bay Preservation Area. Depending on local requirements, the area of land

disturbance requiring an ESC plan may be less. The ESC plan must be approved prior to any land-disturbing activity at the project site. All regulated land-disturbing activities associated with the project, including on- and off-site access roads, staging areas, borrow areas, stockpiles, and soil intentionally transported from the project, must be covered by the project specific ESC plan. Local ESC program requirements must be requested through the City of Alexandria.

1(b)(ii) Stormwater Management Plan. Depending on local requirements, a Stormwater Management (SWM) plan may be required. Local SWM program requirements must be requested through the City of Alexandria.

1(b)(iii) General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10). The operator or owner of a construction project involving land-disturbing activities equal to or greater than one acre is required to register for coverage under the VAR10 permit and develop a project-specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit, and it must address water quality and quantity in accordance with the *VSMP Permit Regulations*. General information and registration forms for the General Permit are available on DEQ's website at http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx.

1(c) Conclusion. The project is consistent with the nonpoint source pollution control enforceable policy of the Virginia CZM Program, provided the activities comply with applicable conditions of the local program.

2. Coastal Lands Management. The FCC (page 3) indicates that the coastal lands management enforceable policy is applicable to the project and that the project is not within a Resource Protection Area (page 2).

2(a) Agency Jurisdiction. The DEQ Office of Local Government Programs (OLGP) administers the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 *et seq.*) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 25-830-10 *et seq.*). Each Tidewater locality must adopt a program based on the Chesapeake Bay Preservation Act and the Chesapeake Bay Preservation Area Designation and Management Regulations. The Act and regulations recognize local government responsibility for land use decisions and are designed to establish a framework for compliance without dictating precisely what local programs must look like. Local governments have flexibility to develop water quality preservation programs that reflect unique local characteristics and embody other community goals. Such flexibility also facilitates innovative and creative approaches in achieving program objectives. The regulations address nonpoint source pollution by identifying and protecting certain lands called Chesapeake Bay Preservation Areas. The regulations use a resource-based approach that recognizes differences between various land forms and treats them differently.

2(b) Agency Comments. In the City of Alexandria all areas not designated as a Resource Protection Area (RPA) are designated as a Resource Management Area (RMA). Based on the City of Alexandria June 12, 2004 RPA Buffer Map, the site appears to be outside of locally-designated RPAs. The site is located within a RMA.

2(c) Requirements. The ARHA must adhere to the general performance criteria requirements as provided in §9VAC25-830-130 of the Chesapeake Bay Preservation Area Designation and Management Regulations and the local program, as applicable.

2(d) Conclusion. Provided the project adheres to the above requirements, as applicable, the project is consistent with the coastal lands management enforceable policy of the Virginia CZM Program.

3. Air Pollution Control. The FCC (page 3) indicates that the developer will control odors and any other air pollution resulting from the construction activity.

3(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the State Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law. DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate DEQ regional office is directly responsible for the issuance of necessary permits to construct and operate all stationary sources in the region as well as monitoring emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

3(b) Agency Finding. According to the DEQ Air Division, the City of Alexandria is a non-attainment area for the 8 hour ozone standards.

3(c) Requirements.

3(c)(i) Fugitive Dust. During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and

- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

3(c)(ii) Open Burning. If project activities include open burning or the use of special incineration devices, this activity must meet the requirements under 9 VAC 5-130-10 through 9 VAC 130-60 and 9 VAC 5-130-100 of the *Regulations* for open burning. In addition, the *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning. The applicant should contact City of Alexandria fire officials to determine what local requirements, if any, exist.

3(c)(iii) Asphalt Paving. A precaution, which typically applies to road construction and paving work (9 VAC 5-45-780 *et seq.*), places limitations on the use of "cut-back" (liquefied asphalt cement, blended with petroleum solvents), and may apply to the project. The asphalt must be "emulsified" (predominantly cement and water with a small amount of emulsifying agent) except when specified circumstances apply. Moreover, there are time-of-year restrictions on its use from April through October in VOC emission control areas.

3(c)(iv) Fuel-Burning Equipment. Should the proposed project require the installation of fuel-burning equipment (boilers, generators, etc.), or other air pollution emitting equipment, the project may be subject to 9 VAC 5-80, Article 6, Permits for New and Modified sources.

3(d) Conclusion. Provided the project adheres to the above requirements, as applicable, it is consistent with the air pollution control enforceable policy of the Virginia CZM Program.

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

In addition to the enforceable policies of the CZM Program, guidance is also provided with respect to applicable requirements and recommendations of the following programs:

1. Solid and Hazardous Wastes, and Hazardous Substances. DEQ administers the *Virginia Solid Waste Management Regulations* (9 VAC 20-81) and the *Virginia Hazardous Waste Management Regulations* (9 VAC 20-60). The ARHA may contact DEQ-NRO (703-583-3800) concerning the location and availability of waste management facilities in the project area or with questions related to the below requirements.

1(a) Agency Recommendations. DEQ encourages all projects and facilities to implement pollution prevention principles, including:

- the reduction, reuse and recycling of all solid wastes generated; and
- the minimization and proper handling of generated hazardous wastes.

1(b) Requirements.

1(b)(i) Contaminated Waste. Any wastes that are generated must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations.

1(b)(ii) Asbestos-Containing Materials and Lead-Based Paint. All structures being demolished/renovated/removed must be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to federal waste-related regulations, state regulations 9 VAC 20-80-620 for ACM and 9 VAC 20-60-261 for LBP must be followed.

1(b)(iii) Petroleum Release Sites and Storage. If evidence of a petroleum release is discovered, it must be reported to DEQ, as authorized by Virginia Code § 62.1-44.34.8 through 9 and 9 VAC 25-580-10 *et seq.*

The installation and use of an aboveground storage tank (>660 gallons) for temporary fuel storage (>120 days) during the project must follow the requirements in 9 VAC 25-91-10 *et seq.*

2. Pollution Prevention. DEQ advocates that principles of pollution prevention and sustainability be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention and sustainability techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source. We have several pollution prevention recommendations that may be helpful for this project:

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider energy efficiency when choosing materials and products, like insulation, fixtures, and HVAC systems.
- Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.
- Integrate pollution prevention techniques into property construction and maintenance.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques. For more information, contact DEQ's Office of Pollution Prevention (Meghann Quinn, 804-698-4021).

3. Historic Structures and Archaeological Resources. Section 106 of the National Historic and Preservation Act of 1966, as amended, requires that proponents of activities that receive federal funding consider effects to properties that are listed, or eligible for listing, on the National Register of Historic Places. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources.

Based on supplemental information received from the ARHA (Battle/Howard email, 3/6/17), the structures to be demolished were constructed in the early 1940's (over 50 years old). Please note that under historic preservation rules, structures over 50 years old may (by virtue of age and other characteristics) be eligible for listing on the National Register. Accordingly, we recommend that ARHA or its agents contact DHR (Roger Kirchen, telephone (804) 482-6091) before proceeding with the demolition to ask two questions: (1) whether National Register (or Virginia Landmarks Register) eligibility is the case, and, if so, (2) whether it warrants any precautions relative to the scope of work that is contemplated for the property.

In addition, the ARHA or its agents may encounter archaeological resources outside the structure while undertaking the project, particularly during the construction of the new sewer main. If archaeological resources are encountered, DHR should be contacted immediately (Roger Kirchen, 804-482-6091).

4. Water Conservation. The following recommendations will result in reduced water use associated with use of residential structures.

- Grounds should be landscaped with hardy native plant species to conserve water as well as to lessen the need to use fertilizers and pesticides.
- Convert turf to low water-use landscaping such as drought-resistant grass, plants, shrubs, and trees.
- Consider installing flow restrictors and aerators on faucets.
- Improve irrigation practices by:
    - upgrading sprinkler clock; water at night, if possible, to reduce evapotranspiration (lawns need only 1 inch of water per week, and do not need to be watered daily; overwatering causes 85% of turf problems);
    - installing a rain shutoff device; and
    - collecting rainwater with a rain bucket or cistern system with drip lines.
- Install new high-efficiency washers and dishwashers to reduce water usage by 30-50% per use over older models.
- Check for and repair leaks (toilets and faucets) during regular routine maintenance activities.

5. Energy Conservation. The development should be planned and designed to comply with state and federal guidelines and industry standards for energy conservation and efficiency. For example, the energy efficiency of the apartment buildings can be enhanced by maximizing the use of the following:

- thermally-efficient building shell components (roof, wall, floor, windows and insulation);
- facility siting and orientation with consideration towards natural lighting and solar loads;
- high-efficiency heating, ventilation, air conditioning systems; and
- high-efficiency lighting systems and daylighting techniques.

Please contact the Department of Mines, Minerals and Energy (David Spears at (434) 951-6350) for assistance in meeting this challenge.

Thank you for the opportunity to review this proposal. If you have questions, please feel free to call me at (804) 698-4299.

Sincerely,

Janine L. Howard, EIR Coordinator
Office of Environmental Impact Review

Ec: Kerry Johnson, HUD Richmond Field Office
Leroy Battle, ARHA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Molly Joseph Ward
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Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Zone Management Program (CZM)

a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC) (Virginia Code §28.2-200 to §28.2-713) and the Department of Game and Inland Fisheries (DGIF) (Virginia Code §29.1-100 to §29.1-570).

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities (Virginia Code §3.2-3904 and 3.2-3935 to §3.2-3937).

b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Virginia Marine Resources Commission (VMRC) (Virginia Code §28.2-1200 to §28.2-1213).

c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(1) The tidal wetlands program is administered by VMRC (Virginia Code §28.2-1301 through §28.2-1320).

(2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands - both tidal and non-tidal - (Virginia Code §62.1-44.15:5) and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by VMRC (Virginia Code §28.2-1400 through §28.2-1420).

e. Non-point Source Pollution Control - (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by DEQ (Virginia Code §62.1-44.15:51 *et seq.*).

(2) Coastal Lands Management is a state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater (see i) Virginia (Virginia Code §62.1-44.15:67 – 62.1-44.15:79 and Virginia Administrative Code 9 VAC 25-830-10 *et seq.*).

f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished through the implementation of:

(1) The National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.

(2) The Virginia Water Protection Permit (VWPP) program administered by DEQ (Virginia Code §62.1-44.15:5) and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (VDH) (Virginia Code §32.1-164 through §32.1-165).

h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (DEQ) (Virginia Code §10-1.1300 through §10.1-1320).

i. Coastal Lands Management - A state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 – 62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Administrative Code 9 VAC 25-830-10 *et seq.*).

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:

a) Wetlands
b) Aquatic Spawning, Nursery, and Feeding Grounds
c) Coastal Primary Sand Dunes
d) Barrier Islands
e) Significant Wildlife Habitat Areas
f) Public Recreation Areas
g) Sand and Gravel Resources
h) Underwater Historic Sites.

b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:

i) Highly Erodible Areas
ii) Coastal High Hazard Areas, including flood plains.

c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:

i) Commercial Ports
ii) Commercial Fishing Piers
iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCP is encouraged.

Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCP recognizes two broad classes of priority uses for waterfront development APC:

i) water access dependent activities;
ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

Advisory Policies for Shorefront Access Planning and Protection

a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.

b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.

d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.

f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

Coastal Zone Management Act (CEST and EA)

General requirements	Legislation	Regulation
Federal assistance to applicant agencies for activities affecting any coastal use or resource is granted only when such activities are consistent with federally approved State Coastal Zone Management Act Plans.	Coastal Zone Management Act (16 USC 1451-1464), particularly section 307(c) and (d) (16 USC 1456(c) and (d))	15 CFR Part 930
References		
https://www.onecpd.info/environmental-review/coastal-zone-management		

Projects located in the following states must complete this form.

Alabama	Florida	Louisiana	Mississippi	Ohio	Texas
Alaska	Georgia	Maine	New Hampshire	Oregon	Virgin Islands
American Samona	Guam	Maryland	New Jersey	Pennsylvania	Virginia
California	Hawaii	Massachusetts	New York	Puerto Rico	Washington
Connecticut	Illinois	Michigan	North Carolina	Rhode Island	Wisconsin
Delaware	Indiana	Minnesota	Northern Mariana Islands	South Carolina	

1. **Is the project located in, or does it affect, a Coastal Zone as defined in your state Coastal Management Plan?**

   ☒Yes → *Continue to Question 2.*

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within a Coastal Zone.*

2. **Does this project include activities that are subject to state review?**

   ☒Yes → *Continue to Question 3.*

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination.*

3. **Has this project been determined to be consistent with the State Coastal Management Program?**

   ☒Yes, with mitigation. → *Continue to Question 4.*

   ☐Yes, without mitigation. → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination.*

☐No, project must be canceled.

Project cannot proceed at this location.

4. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

The project will consists of the demolition of 15 units (four multifamily buildings) and construct 52 units of multifamily housing in one 3 ½ Story building. Erosion and sediment controls, storm water management measures, and water quality control measures will be implemented and reviewed by the Transportation and Environmental Review prior to approval.

→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the State Coastal Management Program letter of consistency) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Refer to Preliminary Site Plan and Erosion and Sediment Control and Storm Water Management Plans. The development proposes to detain the 10 year, 24 hour storm event peak rate of runoff below the peak release from the pre-development conditions. (See sheets P-0701 and P-0702) With regard to water quality, the required phosphorous removal to be provided on site shall be at least 0.37 LB/YR. The required phosphorous reduction is proposed to be achieved by treating approximately 0.36 AC on site with a cartridge type facility. The computed phosphorous removal on site is equal to 0.39 LB/YR which satisfies water quality control requirements of section 13-109 of the City of Alexandria Zoning Ordinance. 100% of the water quality volume will be treated with the proposed BMP located on site and the conversion of the public alley to a permeable surface.

Are formal compliance steps or mitigation required?

☒ Yes

☐ No

EMERGENCY VEHICLE EASEMENT (EVE) NOTE

1. THERE ARE NO PROPOSED EMERGENCY VEHICLE EASEMENT'S ASSOCIATED WITH THIS SITE PLAN.

ENVIRONMENTAL SITE ASSESSMENT

1. THERE ARE NO TIDAL WETLANDS, RPA'S, TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS, HIGHLY ERODIBLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, STREAMS OR WETLANDS LOCATED ON THIS SITE. FURTHER, THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. ADDITIONALLY, THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS OR AREAS OF SOIL OR GROUNDWATER CONTAMINATION OF THE SITE.

2. THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, OFFICE OF ENVIRONMENTAL QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OR UNDERGROUND STORAGE TANKS, DRUMS AND CONTAINERS ARE ENCOUNTERED AT THE SITE. SHOULD UNANTICIPATED CONDITIONS WARRANT, CONSTRUCTION WITHIN THE IMPACTED AREA SHALL BE STOPPED UNTIL THE APPROPRIATE ENVIRONMENTAL REPORTS ARE SUBMITTED AND APPROVED AT THE DISCRETION OF THE DIRECTOR OF T&ES. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, ITS CONTENTS, ANY SOIL CONTAMINATION AND RELEASE TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE, AND CITY REGULATIONS.

3. ALL WELLS TO BE DEMOLISHED ON THIS PROJECT, INCLUDING MONITORING WELLS, MUST BE CLOSED IN ACCORDANCE WITH VIRGINIA STATE WATER CONTROL BOARD (VSWCB) REQUIREMENTS. CONTACT ENVIRONMENTAL HEALTH SPECIALIST AND AND COORDINATE WITH THE ALEXANDRIA HEALTH DEPARTMENT AT 703-746-4400 EXT. 267/255.

4. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11, CHAPTER 5, WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS:
   - MONDAY THROUGH FRIDAY FROM 7AM TO 6PM AND
   - SATURDAYS FROM 9AM TO 6PM
   - NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.

   PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
   - MONDAY THROUGH FRIDAY FROM 9AM TO 6PM AND
   - SATURDAYS FROM 10AM TO 4PM

ENVIRONMENTAL NOTES

1. THERE IS NO KNOWN SOIL AND/OR GROUNDWATER CONTAMINATION WITHIN THE LIMITS OF THIS DEVELOPMENT
2. THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS ON SITE.
3. THE PROPERTY IS NOT KNOWN TO BE LOCATED WITHIN 1,000 FEET OF A FORMER SANITARY LANDFILL, DUMP OR DISPOSAL AREA.
4. THERE ARE NO KNOWN AREAS WITH THE POTENTIAL OF GENERATING COMBUSTIBLE GASES ON SITE.
5. A PHASE 1 ENVIRONMENTAL SITE ASSESSMENT WAS COMPLETED (BY OTHERS) FOR THE SUBJECT PARCEL BASED ON THE CONCLUSIONS OF THAT REPORT, FURTHER ACTIONS ARE NOT RECOMMENDED.

UTILITY WORKS

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING MINIMUM STANDARDS DESCRIBED IN SECTION 4VAC50-30-40 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) AND ADDITIONAL APPLICABLE PRACTICES FOLLOWED BY THE CITY OF ALEXANDRIA:

A. ALL PRIVATE UTILITIES SHALL BE LOCATED OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PUBLIC UTILITY EASEMENTS UNLESS THE UTILITY OWNERS HAVE FRANCHISE AGREEMENT WITH THE CITY OF ALEXANDRIA; HOWEVER, NO ELECTRIC TRANSFORMERS AND SWITCH GEARS/CONTROL BOXES SHALL BE PLACED IN THE PUBLIC RIGHT OF WAY.

B. ALL THE EXISTING AND PROPOSED PUBLIC AND PRIVATE UTILITIES AND EASEMENTS SHALL BE SHOWN AND A DESCRIPTIVE NARRATION OF VARIOUS UTILITIES SHALL BE PROVIDED ON THE PLAN.

C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN UTILITY SERVICES AT ALL TIMES DURING CONNECTION AND/OR CONSTRUCTION.

D. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

E. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

F. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.

G. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ACCORDANCE WITH THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

H. SHOULD UTILITY CONSTRUCTION BE PERFORMED AFTER COMPLETING EARTHWORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACHIEVING 98 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1551) COMPACTION IN ALL TRENCH BACKFILL.

I. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE VIRGINIA REGULATIONS §4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS, VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).

J. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

K. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL CONTROL MEASURES AS NECESSARY TO PREVENT EROSION AND SEDIMENTATION, AS DETERMINED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, CITY OF ALEXANDRIA.

L. GRADING CAN BE PERFORMED ON INSTALLATION OF UTILITIES.

M. A REMEDIATION PLAN SHALL BE SUBMITTED DETAILING HOW CONTAMINATED SOILS AND/OR GROUNDWATER WILL BE DEALT WITH, INCLUDING PLANS TO PREMEDITATE UTILITY CORRIDORS.

N. UTILITY CORRIDORS IN CONTAMINATED SOIL SHALL BE OVER EXCAVATED BY 2 FEET AND BACKFILLED WITH "CLEAN" SOIL.

O. ALL UTILITIES SUCH AS ELECTRICAL LINES, GAS PIPES, COMMUNICATION CABLES, INCLUDING WATER AND SEWER LATERALS ON PRIVATE AND PUBLIC PROPERTY IN THE CITY OF ALEXANDRIA SHALL BE PROVIDED WITH MINIMUM 3" WIDE 5 MIL OVERALL THICKNESS DETECTABLE UNDERGROUND WARNING TAPE (DUWT). THE DUWT SHALL BE INSTALLED AT DEPTHS OF 12" TO 18" FOR DUWT WIDTHS OF 3" AND 24" FOR WIDTHS OF 6" SO AS TO MAKE UNDERGROUND INSTALLATION EASY TO FIND USING A NON-FERROUS LOCATOR. THE DUWT SHALL BE WITH ALUMINUM BACKING OR SOLID ALUMINUM CORE LAMINATED WITH A PROTECTIVE CLEAR FILM ON BOTH SIDES, SEALING AND PROTECTING THE GRAPHICS FROM UNDERGROUND MOISTURE, ACIDS, ALKALIS, AND OTHER SOLID SUBSTANCES. ALL DUWT TAPES SHALL BE PRINTED IN BLACK INK ON AMERICAN PUBLIC WORKS ASSOCIATION (APWA) APPROVED COLORS TO MEET OR EXCEED INDUSTRY STANDARDS. (SEE TABLE BELOW)

COLOR	CODES
RED	CAUTION BURIED ELECTRIC POWER LINES, CABLES, CONDUITS, AND LIGHTING CABLES
YELLOW	CAUTION GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	CAUTION COMMUNICATIONS, ALARM OR SIGNAL LINES, CABLES, OR CONDUITS
BLUE	CAUTION POTABLE WATER
PURPLE	CAUTION RECLAIMED WATER, IRRIGATION AND SLURRY LINES
GREEN	CAUTION SEWER, DRAIN LINES, AND FORCE MAIN

UTILITY CONTACTS

ELECTRIC:
VIRGINIA DOMINION POWER
C/O KEN HOLMES
907 WEST GLEBE ROAD
ALEXANDRIA, VA 22305
(703) 838-2437

NATURAL GAS:
WASHINGTON GAS
C/O RAY BAKER
6801 INDUSTRIAL ROAD
SPRINGFIELD, VA 22151
(703) 750-5953

WATER:
VIRGINIA AMERICAN WATER COMPANY
C/O HAO (STEVE) CHEN
2223 DUKE STREET
ALEXANDRIA, VA 22314
(703) 706-3889

TELEPHONE:
VERIZON
C/O VAL FISHER
2980 FAIRVIEW PARK N., 6TH FLOOR
FALLS CHURCH, VA 22042
(703) 204-5068

CATV/HS INTERNET:
COMCAST
C/O BRIAN SHADE
3900 WHEELER AVENUE
ALEXANDRIA, VA 22304
(703) 567-4449

SOLID WASTE MANAGEMENT NOTES

1. SOLID WASTE COLLECTION AND DISPOSAL SERVICES SHALL BE PROVIDED BY PRIVATE COLLECTORS AND SHALL BE PASSED ON TO NEW OWNER IN CASE OF SALE OF THE PROPERTY SUBSEQUENT TO THE DEVELOPMENT.

2. THE PLAN DEMONSTRATES THAT ADEQUATE SPACE FOR SOLID WASTE AND RECYCLING CONTAINERS HAS BEEN PROVIDED AND DEVELOPMENT MEETS ALL THE MINIMUM STREET STANDARDS, INCLUDING ALL STANDARD CUL-DE-SAC TURNAROUNDS, IF APPLICABLE. THE TRASH TRUCK TURNING MOVEMENTS DEMONSTRATE THAT THE TRASH TRUCK IS ABLE TO PICK UP SOLID WASTE FROM PRIVATE STREETS WITHOUT BACKING UP. THE CONTAINERS HAVE BEEN PLACED WITHIN AN ENCLOSURE THAT COMPLETELY SCREENS THEM FROM VIEW, (SEE SHEET C-1103 FOR GARBAGE TRUCK MOVEMENT PLAN)

3. IN THE EVENT SECTION 5-1-2(12B) OF THE CITY CHARTER AND CODE TITLE 5: TRANSPORTATION AND ENVIRONMENTAL SERVICES IS AMENDED TO DESIGNATE MULTI-FAMILY DWELLINGS IN GENERAL, OR MULTI-FAMILY DWELLINGS WHEN SO PROVIDED BY SPECIAL USE PERMIT (SUP), AS REQUIRED USER PROPERTY [AS DEFINED IN 5-1-2(12B) OF THE CITY CHARTER AND CODE], THE REFUSE COLLECTION SHALL BE PROVIDED BY THE CITY FOR THE TOWNHOME CONDOMINIUM PORTION OF THIS PLAN.

4. ALL SOLID WASTE, AS DEFINED BY THE CITY CHARTER AND CODE OF THE CITY OF ALEXANDRIA, SHALL BE DELIVERED TO COVANTA ENERGY WASTE FACILITY LOCATED AT 5301 EISENHOWER AVENUE.

CONSTRUCTION WASTE NOTE

1. CONTRACTOR SHALL IMPLEMENT A WASTE REFUSE CONTROL PROGRAM DURING THE CONSTRUCTION PHASE OF THIS DEVELOPMENT. THIS PROGRAM SHALL CONTROL WASTES SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER OR TRASH, TRASH GENERATED BY CONSTRUCTION WORKERS OR MOBILE FOOD VENDOR BUSINESSES SERVING THEM, AND ALL SANITARY WASTE AT THE CONSTRUCTION SITE AND PREVENT OFFSITE MIGRATION THAT MAY CAUSE ADVERSE IMPACTS TO NEIGHBORING PROPERTIES OR TO THE ENVIRONMENT TO THE SATISFACTION OF DIRECTORS OF T&ES AND CODE ADMINISTRATION. ALL WASTE SHALL BE PROPERLY DISPOSED OFFSITE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS.

DEMOLITION NOTES

1. A SEPARATE PERMIT IS REQUIRED FOR DEMOLITION; HOWEVER, NO DEMOLITION SHALL BEGIN UNTIL ALL EROSION AND SEDIMENT AND TREE PROTECTION CONTROLS ARE IN PLACE AND ARE APPROVED BY AN EROSION AND SEDIMENT CONTROL INSPECTOR OF THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES.

2. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE MOST CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED, TO ENVIRONMENTAL PROTECTION AGENCY (EPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), VIRGINIA OCCUPATIONAL AND SAFETY HEALTH COMPLIANCE PROGRAM (VOSH ENFORCEMENT), VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT, NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), AND NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH).

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK WITH REPRESENTATIVE UTILITY COMPANIES AND FOR THE IMPLEMENTATION OF REQUIRED UTILITY-RELATED WORK.

4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY HAZARDOUS MATERIALS DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL DOCUMENT SAME TO THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.

5. DISCONNECTION OF SERVICES AND SYSTEMS SUPPLYING UTILITIES TO BE ABANDONED OR DEMOLISHED SHALL BE COMPLETED PRIOR TO OTHER SITE DEMOLITION IN FULL COMPLIANCE WITH APPLICABLE CODES, REGULATIONS, AND THE REQUIREMENTS OF UTILITY PURVEYORS HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY PURVEYORS, PAYMENT OF ASSOCIATED FEES AND PROCUREMENT OF ALL NECESSARY PERMITIS.

6. PRIOR TO REMOVAL OF MATERIALS OVER EXISTING UTILITY SYSTEMS, THE CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS AND, IF AT VARIANCE WITH CONDITIONS AS REPRESENTED ON THE PLANS, NOTIFY THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTIONS AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.

7. THE CONTRACTOR SHALL BACKFILL EXCAVATED AREAS WITH APPROVED MATERIALS/CLEAN FILL AS PER THE REQUIREMENTS OF VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT).

8. THE CONTRACTOR SHALL PROTECT AND PREVENT DAMAGE TO EXISTING ON-SITE UTILITY DISTRIBUTION FACILITIES THAT ARE TO REMAIN. ACTIVE UTILITY DISTRIBUTION FACILITIES ENCOUNTERD DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES SHALL BE SHUT OFF AT THE SERVICE MAIN WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

9. DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY EXISTING UTILITIES AND/OR UTILITY SYSTEM STRUCTURES NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL DOCUMENT THE SAME AND FORWARD THE INFORMATION TO THE RESIDENT ENGINEER/OWNER'S REPRESENTATIVE, AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.

10. THE CONTRACTOR OR APPLICANT SHALL WORK WITH THE CITY STAFF TO REUSE THE EXISTING, LEFTOVER, UNUSED, AND/OR DISCARDED BUILDING MATERIALS AS PART OF THE DEMOLITION PROCESS OR THE CONSTRUCTION DEBRIS MUST BE REMOVED TO AN APPROVED LANDFILL WITH ADEQUATE FREQUENCY IN ACCORDANCE WITH THE VIRGINIA STATE LITTER CONTROL ACT.

RESOURCE PROTECTION AREA NOTES

1. THE SUBJECT PROPERTY DOES NOT LIE WITHIN THE CITY OF ALEXANDRIA RESOURCE PROTECTION AREA (RPA) AND THERE ARE NO MAPPED RPA'S ON THIS PROPERTY.

FLOOD PLAIN NOTES

1. THE SITE DOES NOT LIE WITHIN 100-YEAR FLOOD PLAIN WATER SURFACE ELEVATION (WSE) PER THE DEMARCATION OF THE CURRENT FLOOD INSURANCE RATE MAP (FIRM) PUBLISHED BY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

CEMETERY AND/OR BURIAL GROUNDS

1. THERE IS NO OBSERVABLE, HISTORICAL OR ARCHAEOLOGICAL EVIDENCE OF CEMETERIES OR BURIAL GROUNDS ON THIS PROPERTY.

RODENT ABATEMENT NOTE

1. PRIOR TO THE ISSUANCE OF A DEMOLITION PERMIT, A RODENT ABATEMENT PLAN SHALL BE SUBMITTED TO THE CITY OF ALEXANDRIA DEPARTMENT OF CODE ADMINISTRATION THAT WILL OUTLINE WHAT STEPS HAVE AND WILL BE TAKEN TO PREVENT THE SPREAD OF RODENTS FROM THE CONSTRUCTION SITE TO THE SURROUNDING COMMUNITY AND SEWERS. THE CONTRACTOR CAN CONTACT THE ALEXANDRIA DEPARTMENT OF CODE ADMINISTRATION AT (703) 746-4200 FOR ANY QUESTIONS OR ADDITIONAL INFORMATION. PLEASE BE ADVISED ONCE ANY DEMOLITION HAS BEEN COMPLETED ANY ABOVE GROUND BAIT BOXES MUST BE RELOCATED WITHIN 50 FEET OF A STRUCTURE IN KEEPING WITH EPA REGULATIONS. IF THIS IS NOT POSSIBLE, THEY SHALL BE REMOVED AND REGULAR INSPECTION OF THE SITE CONDUCTED BY A VIRGINIA LICENSED PEST EXTERMINATOR TO ENSURE THE SITE REMAINS RODENT FREE.

MOSQUITO CONTROL NOTES

1. SINCE STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICE (BMP) SYSTEMS THAT HOLD WATER FOR MORE THAN 5 DAYS BETWEEN THE MONTHS OF MAY- OCTOBER HAVE THE POTENTIAL TO CAUSE MOSQUITO BREEDING HABITATS; THEREFORE, SUCH BMPS SHALL BE TREATED WITH A REGISTERED MOSQUITO LARVAL CONTROL PRODUCT. ALL LABELS SHOULD BE FOLLOWED FOR APPLICATION RATES AND AMOUNTS.

2. SINCE EXCESSIVE VEGETATION IN EXISTING BMPS ALSO INCREASE THE POTENTIAL FOR MOSQUITO PROBLEMS; THEREFORE, VEGETATION SHALL BE CONTROL AND CUT TO REDUCE MOSQUITO BREEDING.

3. CONTACT THE CITY OF ALEXANDRIA ENVIRONMENTAL HEALTH VECTOR BORNE ILLNESS PROGRAM (703-746-4910) FOR QUESTIONS OR TREATMENT ASSISTANCE.

NOISE NOTE

1. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11, CHAPTER 5, WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS:
   MONDAY THROUGH FRIDAY FROM 7AM TO 6PM AND
   SATURDAYS FROM 9AM TO 6PM

2. NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.

3. PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
   MONDAY THROUGH FRIDAY FROM 9AM TO 6PM AND
   SATURDAYS FROM 10AM TO 4PM

CODE NOTES

1. REQUIRED MEANS OF EGRESS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION, DEMOLITION, REMODELING OR ALTERATIONS AND ADDITIONS TO ANY BUILDING.

2. WASTE MATERIALS SHALL BE REMOVED IN A MANNER WHICH PREVENTS INJURY OR DAMAGE TO PERSONS, ADJOINING PROPERTIES AND PUBLIC RIGHTS-OF-WAY.

3. SERVICE UTILITY CONNECTIONS SHALL BE DISCONTINUED AND CAPPED IN ACCORDANCE WITH THE APPROVED RULES AND THE REQUIREMENTS OF THE APPLICABLE GOVERNING AUTHORITY.

4. PROVISIONS SHALL BE MADE TO PREVENT THE ACCUMULATION OF WATER OR DAMAGE TO ANY FOUNDATION ON THE PREMISES OR ADJOINING PROPERTY.

5. CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE STORED AND PLACED SO AS NOT TO ENDANGER THE PUBLIC, THE WORKERS OR ADJOINING PROPERTY FOR THE DURATION OF THE CONSTRUCTION PROJECT, MATERIALS AND EQUIPMENT SHALL NOT BE PLACED OR STORED SO AS TO OBSTRUCT ACCESS TO FIRE HYDRANTS, STANDPIPES, FIRE OR POLICE ALARM BOXES, CATCH BASINS OR MANHOLES.

6. DURING CONSTRUCTION, DWELLINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FOR THE STREET OR ROAD FRONTING THE PROPERTY.

7. ADJOINING PUBLIC AND PRIVATE PROPERTY SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION, REMODELING AND DEMOLITION WORK. PROTECTION SHALL BE PROVIDED FOR FOOTINGS, FOUNDATIONS, PARTY WALLS, CHIMNEYS, SKYLIGHTS AND ROOFS. PROVISIONS SHALL BE MADE TO CONTROL WATER RUNOFF AND EROSION DURING CONSTRUCTION OR DEMOLITION ACTIVITIES. THE PERSON MAKING OR CAUSING AN EXCAVATION TO BE MADE SHALL PROVIDE WRITTEN NOTICE TO THE OWNERS OF ADJOINING BUILDINGS ADVISING THEM THAT THE EXCAVATION IS TO BE MADE AND THAT THE ADJOINING BUILDINGS SHOULD BE PROTECTED. SAID NOTIFICATION SHALL BE DELIVERED NOT LESS THAN 10 DAYS PRIOR TO THE SCHEDULED STARTING DATE OF THE EXCAVATION.

PERMITS NOTE

1. ALL REQUIRED PERMITS FROM VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, ENVIRONMENTAL PROTECTION AGENCY, ARMY CORPS OF ENGINEERS, VIRGINIA MARINE RESOURCES SHALL BE IN PLACE FOR ALL PROJECT CONSTRUCTION AND MITIGATION WORK PRIOR TO CONSTRUCTION. THIS INCLUDES THE STATE REQUIREMENT FOR A CONSTRUCTION GENERAL PERMIT AND ASSOCIATED STORMWATER POLLUTION PREVENTION PLAN.

WALL CHECK NOTE

1. CONTRACTOR TO SUBMIT A WALL CHECK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE FIRST FLOOR ABOVE GRADE FRAMING FOR THE BUILDING. THE WALL CHECK SHALL INCLUDE THE BUILDING FOOTPRINT, AS DEPICTED IN THE APPROVED FINAL SITE PLAN, THE TOP OF SLAB ELEVATION AND THE FIRST FLOOR ELEVATION. THE WALL CHECK SHALL BE PREPARED AND SEALED BY A REGISTERED ENGINEER OR SURVEYOR, AND SHALL BE APPROVED BY P&Z PRIOR TO COMMENCEMENT OF FRAMING.

GEOTECHNICAL REPORT NOTE

1. A SITE SPECIFIC GEOTECHNICAL REPORT HAS BEEN PREPARED BY KIM ENGINEERING, INC., DATED NOVEMBER 3, 2016 FOR THIS PROPERTY (TO BE SUBMITTED BY OTHERS AND UNDER SEPARATE COVER). SEE SHEET C-1401 FOR EXCERPT FROM THAT REPORT. THERE ARE NO KNOWN SOURCES OF MARINE CLAY ACCORDING TO THE CITY'S MARINE CLAY SOILS MAP ON THIS PROPERTY.

GREEN BUILDING NARRATIVE

THE BUILDING WILL BE DESIGNED WITH ENVIRONMENTALLY CONSCIOUS STRATEGIES IN ORDER TO MEET THE CITY'S ENVIRONMENTAL POLICY AND MINIMUM REQUIREMENTS TO ACHIEVE EARTH CRAFT GOLD LEVEL CERTIFICATION. SPECIFIC GREEN BUILDING TECHNIQUES WILL BE DETAILED ON BUILDING PERMIT PLANS. SEE SHEET C-0107 FOR PROOF OF EARTHCRAFT REGISTRATION.

ELECTRONIC FILE NOTE

1. CONTRACTOR AND DEVELOPER ARE ADVISED THAT ANY ELECTRONIC FILES ASSOCIATED WITH THE PREPARATION OF THESE PLANS WILL NOT BE RELEASED TO OTHERS FOR USE IN CONSTRUCTION STAKE OUT OR RELATED SERVICES.

AFFORDABLE HOUSING NARRATIVE

THIS MIXED-INCOME DEVELOPMENT PROPOSES THE CONSTRUCTION OF ONE MULTI-FAMILY RESIDENTIAL BUILDING THAT PROVIDES 52 AFFORDABLE DWELLING RENTAL UNITS AND THE CONSTRUCTION OF AN UNDERGROUND PARKING GARAGE. HOUSING WOULD BE AVAILABLE TO EXTREMELY LOW-INCOME FAMILIES, AS WELL AS HOUSEHOLDS AT UP TO 60% OF THE AMI (CITY OF ALEXANDRIA WORKFORCE HOUSING LIMIT FOR RENTAL HOUSING). THE BREAKDOWN OF THE UNITS ARE AS FOLLOWS:

TOTAL UNIT MIX PROPOSED:

UNIT TYPE	# UNITS	% TOTAL UNITS
60% AMI	26	50.0%
50% AMI	11	21.15%
30% AMI	15	28.85%
TOTAL	52	100.00%

GENERAL AND SITE SPECIFIC NOTES

1. A VSMP/VPDES PERMIT IS REQUIRED FOR THIS DEVELOPMENT. CONTRACTOR RESPONSIBLE FOR ENSURING PERMIT IS OBTAINED AND CURRENT THROUGHOUT THE DURATION OF THE PROJECT.
2. A POTW PERMIT IS NOT REQUIRED.
3. THE PROPERTY ADDRESS MUST BE CLEARLY MARKED IN THE FRONT AND BACK OF THE PROPOSED DEVELOPMENT SITE DURING CONSTRUCTION FOR EMERGENCY RESPONSE PURPOSES IN CONTRASTING COLORS FOR EASY IDENTIFICATION.
4. THERE ARE NO KNOWN AREAS OF MARINE CLAY ON THIS SITE (SEE MAP SHEET C-0201).
5. THIS PROJECT IS IN A COMBINED SEWER AREA.
6. DAMAGE TO ANY EXISTING ENTRANCES, CURB AND GUTTER, PAVEMENT OR OTHER EXISTING STRUCTURES NOT PROPOSED TO BE DISTURBED WITH THIS DEVELOPMENT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE REPAIRED TO THE SATISFACTION OF THE CITY OF ALEXANDRIA AND ANY ADJOINING OWNERS THAT MAY BE AFFECTED.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE THAT ANY EXISTING LANDSCAPING WHICH IS TO BE RELOCATED ON THE SITE WILL BE CAREFULLY STORED IN A DESIGNATED AREA BEFORE BEING REPLANTED. COORDINATION WITH THE OWNER FOR MUTUALLY AGREEABLE STORAGE LOCATIONS FOR LANDSCAPE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF PLANT MATERIAL THAT DOES NOT SURVIVE STORAGE AND REPLANTING.
8. THERE ARE NO MAPPED RESOURCE PROTECTION AREAS ON SITE.
9. ALL ON-SITE RETAINING WALLS ARE SUBJECT TO SEPARATE PERMITS TO BE OBTAINED BY THE OWNERS. THIS PLAN IS FOR LOCATION AND PROPOSED GRADING ONLY. GEOTECHNICAL AND STRUCTURAL DESIGN IS TO BE ACCOMPLISHED BY OTHERS.
10. THERE WILL BE AN INCREASE IN SANITARY SEWER DISCHARGE ASSOCIATED WITH THIS DEVELOPMENT. SEE SHEET C-0901 FOR ADDITIONAL INFORMATION.
11. A SEPARATE PERMIT IS REQUIRED FOR SIGN CONSTRUCTION, IF NECESSARY.
12. EXISTING WELLS SHALL BE PERMANENTLY ABANDONED IN ACCORDANCE WITH VIRGINIA STATE WATER CONTROL BOARD REQUIREMENTS.
13. PROPOSED PAVEMENT SECTION DEPTH(S) ARE BASED ON A CBR VALUE OF 10. LABORATORY TESTS OF SUBGRADE SOIL SHALL BE PERFORMED FOR ACTUAL DETERMINATION OF REQUIRED SUBGRADE THICKNESS PRIOR TO PAVING. IN THE CASE OF PAVEMENT PATCHES, PAVEMENT SECTION MUST MEET OR EXCEED EXISTING SECTION. SEE SOILS REPORT, BY OTHERS, FOR ADDITIONAL INFORMATION.
14. ALL EROSION CONTROLS SHALL CONFORM TO THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST VERSION OF) AND MUST BE SUBMITTED AND APPROVED BY T&ES.
15. ALL EMERGENCY VEHICLE EASEMENTS MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CITY STANDARDS (CSAP-1A).
16. PROVIDE ALL PEDESTRIAN AND TRAFFIC SIGNAGE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) TO THE SATISFACTION OF THE DIRECTOR OF T&ES.
17. ALL PRIVATE UTILITIES ARE TO BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND PUBLIC UTILITY EASEMENTS.
18. THE STORMWATER COLLECTION SYSTEM IS LOCATED WITHIN THE POTOMAC RIVER WATERSHED. ALL ON-SITE STORMWATER CURB INLETS AND PUBLIC CURB INLETS WITHIN 50 FT OF THE PROPERTY LINE SHALL BE DULY MARKED USING STANDARD CITY MARKERS, OR TO THE SATISFACTION OF THE DIRECTOR OF TE&S.
19. PRIOR TO RELEASE OF THE PERFORMANCE BOND, A COPY OF THE OPERATION AND MAINTENANCE MANUAL SHALL BE SUBMITTED TO THE DIVISION OF ENVIRONMENTAL QUALITY ON DIGITAL MEDIA.
20. EXISTING SEPTIC FIELDS, IF APPLICABLE, SHALL BE ABANDONED IN ACCORDANCE WITH VIRGINIA HEALTH DEPARTMENT STANDARDS AND SPECIFICATIONS.
21. THE APPLICANT AND CONTRACTOR TO WORK WITH THE CITY OF ALEXANDRIA FOR RECYCLING AND /OR REUSE OF THE LEFTOVER, UNUSED, AND/OR DISCARDED BUILDING MATERIALS.
22. THE APPLICANT SHALL BE RESPONSIBLE TO DELIVER THE SOLID WASTE, AS DEFINED BY THE CITY CHARTER AND CODE OF THE CITY OF ALEXANDRIA, TO THE COVANTA ENERGY WASTE FACILITY LOCATED AT 5301 EISENHOWER AVENUE.

ESI
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SCALE: AS NOTED
DATE: 3/30/2017
DRAWN: DP, DM
CHECKED: BF

ESI MSR #1	3/30/17
SUBMISSION #1	4/14/17

COMMONWEALTH OF VIRGINIA
AARON M. VINSON
Lic. No.041851
3/30/17
PROFESSIONAL ENGINEER

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

RAMSEY HOMES REDEVELOPMENT
699 N PATRICK STREET
FINAL SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

NOTES

APPROVED
SPECIAL USE PERMIT NO. 2014-0035
DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED _____
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

EROSION - SILTATION CONTROL NARRATIVE

PROJECT DESCRIPTION:
THE PROJECT PROPOSES THE CONSTRUCTION OF A 52-UNIT AFFORDABLE MULTIFAMILY BUILDING WITH UNDERGROUND PARKING LOCATED BENEATH THE PROPOSED BUILDING. THE LIMITS OF DISTURBANCE ARE APPROXIMATELY 44,469 SQUARE FEET OR 1.02 ACRES

EXISTING SITE CONDITIONS:
THERE IS ARE (4) FOUR EXISTING BUILDINGS COMPRISED OF AFFORDABLE MULTIFAMILY BUILDINGS ON THE PROPERTY AS WELL AS SEVERAL OFF-STREET PARKING SPACES AND LAWN AREAS. THE ENTIRE PARCEL WIL BE DISTURBED.CURRENTLY, THE MAJORITY OF THE SITE DRAINS WEST TOWARDS THE NORTH PATRICK INTO STRUCTURE 2036 AND EAST TOWARDS THE ALLEY AND THEN FLOWS SOUTH ON PENDLETON STREET AND ENTERS THE EXISTING SEWER SYSTEM DOWNSTREAM. THE REST OF THE SITE, SHEET FLOWS ONTO WYTHE STREET AND IT IS ULTIMATELY CAPTURED DOWNSTREAM VIA A SEWER INLET.

ADJACENT PROPERTIES:
NORTH: WYTHE STREET, RESIDENTIAL AND CHARLES HOUSTON REC. CENTER.

EAST: PUBLIC ALLEY, RESIDENTIAL AND WATSON READING ROOM.

SOUTH: PENDLETON STREET AND RESIDENTIAL

WEST: NORTH PATRICK STREET, RESIDENTIAL AND CHURCH OF GOD AND SAINTS-CHRIST

OFFSITE AREAS:
PORTIONS OF PUBLIC RIGHT OF WAY WILL BE AFFECTED BY THIS DEVELOPMENT AND PUBLIC ALLEY LOCATED EAST OF THE PROPERTY. DISTURBED AREAS WILL BE COORDINATED WITH CITY STAFF.

SOILS:
THERE ARE NO MARINE CLAY SOILS WITHIN THE PROPERTY ACCORDING TO THE CITY OF ALEXANDRIA MARINE CLAY MAP. A SOILS REPORT HAS BEEN COMPLETED BY KIM ENGINEERING WHICH STATES THAT SOILS FOUND WITHIN THE SITE ARE CATEGORIZED IN THE HYDROLOGIC SOIL GROUP A – SEE GEOTECHNICAL REPORT IN SHEET C-1401. THERE ARE NO KNOWN CONTAMINATED SOILS ON THIS SITE.

CRITICAL AREAS:
N/A

EROSION CONTROL PROGRAM:
EROSION CONTROL MEASURES FOR THIS PROJECT SHALL BE ACCOMPLISHED IN TWO PHASES. THE FIRST PHASE SHALL INVOLVE ONLY THE WORK NECESSARY TO MOBILIZE ON THE PROPERTY AND TO INSTALL THE PHASE I PERIMETER CONTROLS. THE FIRST PHASE MEASURES SHALL REMAIN IN PLACE THROUGHOUT THE CLEARING AND LAND DISTURBING PROCESS.

ONCE THE PHASE II MEASURES HAVE BEEN INSTALLED, THEY SHALL REMAIN IN PLACE UNTIL FINAL SITE STABILIZATION AND GRADING IS ACHIEVED.

TEMPORARY SEEDING AND MULCHING ARE TO BE APPLIED TO ANY DISTURBED AREA NOT WORKED FOR 7 DAYS. IF CONTROLS ARE NOT PROVIDED, THE ADJACENT SITES AND ROADWAYS COULD BE ADVERSELY AFFECTED.

PHASE 1:
AT FIRST, ONE CONSTRUCTION ENTRANCE WILL BE PLACED AT ONE OF THE LOCATIONS SPECIFIED ON SHEET C-0601. SHEET C-0601 PROVIDES FOR TWO CONSTRUCTION ENTRANCE LOCATIONS, HOWEVER, ONLY ONE CONSTRUCTION ENTRANCE IS EXPECTED TO BE NEEDED INITIALLY. THE SECOND ENTRANCE MAY BE INSTALLED WITH INITIAL MOBILIZATION OR AFTER IF NEEDED. CONTRACTOR TO WORK OUT WITH INSPECTOR TO DETERMINE APPROPRIATE LOCATION OF CONSTRUCTION ENTRANCES AS NEEDED.

CONTRACTOR TO SECURE WATER SOURCE FOR TRUCK TIRE WASH DOWN FROM EXISTING FIRE HYDRANT OR PROVIDE TANKER TRUCK FOR THIS PURPOSE. NEXT, ALL PERIMETER CONTROLS INCLUDING INLET PROTECTION, SILT FENCE, AND SAFETY FENCE SHALL BE INSTALLED AS SHOWN ON SHEET C-0601.

WHEN ALL OF THE PHASE 1 MEASURES ARE IN PLACE, AN INSPECTION CAN BE MADE. INSPECTION REQUESTS MUST BE MADE 48 HOURS IN ADVANCE. FOLLOWING THE INSPECTORS APPROVAL OF THE PHASE 1 CONTROL MEASURES, DEMOLITION OF EXISTING STRUCTURES AND COMMENCEMENT OF PHASE 2 CONSTRUCTION WILL THEN BE AUTHORIZED.

PHASE 2:
ALL PHASE I CONTROLS ARE TO REMAIN IN PLACE FOR THE DURATION OF THE LAND DISTURBING ACTIVITIES. ADDITIONAL INLET PROTECTION TO BE PROVIDED AS SHOWN ON THE PHASE II PLAN, SHEET C-0602 FOR NEWLY CONSTRUCTED SEWER STRUCTURES. A PORTABLE ABOVE GRADE SEDIMENT TANK MAY BE PROVIDED NEXT TO EXISTING INLET 2036, IF NEEDED. A PUMP FROM THE EXCAVATED GARAGE WILL DISCHARGE RUNOFF INTO THE TEMPORARY SEDIMENT TANK, WHERE SEDIMENT WILL SETTLE BEFORE RELEASING RUNOFF INTO STRUCTURE 2036.

ALL CONTROLS ARE TO BE ADJUSTED AS REQUIRED BY THE SITE CONSTRUCTION PROGRESS OR AS DIRECTED BY THE INSPECTOR. CONTRACTOR TO MAINTAIN ADJACENT ROADWAYS IN A MUD AND DUST FREE CONDITION AT ALL TIMES IN ACCORDANCE WITH SECTION 3.39 OF THE VESCH.

UPON FINAL SITE STABILIZATION, CONTROL MEASURES CAN BE REMOVED AS COORDINATED WITH THE INSPECTOR. THE PROP. INLINE BMP FACILITY SHALL NOT BE MADE OPERATIONAL UNTIL AFTER SITE WORK IS COMPLETED AND FINAL SITE STABILIZATION MEASURES HAVE BEEN IMPLEMENTED.

MAINTENANCE PROGRAM:
THE SITE SUPERINTENDENT, OR HIS/HER REPRESENTATIVE, SHALL MAKE A VISUAL INSPECTION OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREAS (I.E. SEEDED AND MULCHED AREAS) ON A DAILY BASIS, ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO ENSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING IF NECESSARY.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE PLAN STABILIZATION AFTER THE PERMISSION OF THE INSPECTOR.

UTILITY INSTALLATION NOTE:
ALL UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH VESCH CHAPTER 8, PAGE 28, NOTE 16.

STOCKPILING NOTE:
SOME STOCKPILING OF EXCAVATED MATERIAL IS ANTICIPATED WITH THIS PROJECT. SEE C-0601 FOR STOCKPILE LOCATION.

MAINTENANCE NOTES:
PERIMETER CONTROLS SHALL BE INSPECTED AT THE END OF EACH DAY AND AFTER EACH RAINFALL. AND REQUIRED OR REPLACEMENTS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS WILL BE REMOVED AFTER EACH RAINFALL AND AT ANY TIME THE DEPOSITS REACH APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.

EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED IN PLACE UNTIL GROUND DISTURBING CONSTRUCTION AND PERMANENT STABILIZATION IS COMPLETE AND SHALL BE REMOVED BY PERMISSION OF THE CITY INSPECTOR.

EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED IN PLACE UNTIL GROUND DISTURBING CONSTRUCTION AND PERMANENT STABILIZATION IS COMPLETE AND SHALL BE REMOVED BY PERMISSION OF THE CITY OF ALEXANDRIA INSPECTOR.

EROSION AND SEDIMENT CONTROL MEASURES:

1. SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO GRADING.
2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL GROUND DISTURBING ACTIVITY CEASES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS IS COMPLETE.
3. ALL STANDARDS AND SPECIFICATIONS REFER TO THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).
4. TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATIONS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR TO PROVIDE APPROPRIATE EROSION CONTROL MEASURES FOR ANY STOCKPILED AREA.
5. ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT TO BE CONSTRUCTED UPON SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISH GRADING BY SEEDING AND MULCHING PER STD. AND SPEC. NO. 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
6. BARE SOIL SURFACE NOT AT FINISHED GRADE, WHICH WILL BE EXPOSED MORE THE 7 DAYS SHALL BE ESTABLISHED WITH TEMPORARY SEEDING & MULCH PER STD. SPEC. NO. 3.31 OF THE VESCH.

GENERAL LAND CONSERVATION NOTES

1. NO DISTURBED AREA WILL BE DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
2. ALL EROSION AND SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
3. ALL STORM AND SANITARY LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.
4. ELECTRIC POWER, TELEPHONE, AND GAS SUPPLY TRENCHES AREA TO BE COMPACTED, SEEDED, AND MULCHED WITHIN 5 DAYS AFTER BACKFILL.
5. DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
6. ANY DISTURBED AREA NOT COVERED BY NOTE #1 ABOVE AND NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, IS TO BE MULCHED WITH HAY OR STRAW MULCH AT THE RATE OF TWO TONS PER ACRE AND OVERSEEDED NO LATER THAN MARCH 15TH.
7. AT THE COMPLETION OF CONSTRUCTION PROJECTS, AND PRIOR TO THE RELEASE OF THE BOND, ALL TEMPORARY SILTATION AND EROSION CONTROLS SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED.
8. IF THE MAXIMUM PERIOD FOR DENUDATION IS EXCEEDED AND ANY AREAS REMAIN EXPOSED WITHOUT COVER OR SURFACE, THE CITY MAY (IN THE EVENT THE DEVELOPER DOES NOT) INSTALL SUCH GROUND COVER OR OTHER STABILIZING DEVICES AND/OR MATERIAL TO THE MINIMUM EXTENT NECESSARY TO ACHIEVE EROSION AND SEDIMENT CONTROL EQUAL TO THAT WHICH WOULD HAVE BEEN FURNISHED BY THE PERMANENT COVER SHOWN ON THE APPROVED PLANS. THE COST OF ANY SUCH TEMPORARY MEASURES TAKEN BY THE CITY SHALL BE BORNE BY THE DEVELOPER AND SHALL BE A CHARGE AGAINST THE CONSERVATION DEPOSIT.
9. TEMPORARY DIVERSIONS, SEEDED, AND MULCHED OR SILT FENCE AND OTHER CONTROL MEASURES AS NECESSARY ARE TO BE PLACED AS INDICATED ON THE DRAWINGS PRIOR TO OR AS THE FIRST STEP IN EXCAVATION.
10. WHERE CONSISTENT WITH JOB SAFETY REQUIREMENTS, ALL EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES. NO MATERIAL IS TO BE PLACED IN STREAMBEDS. WHERE SOIL IS PLACED ON DOWNHILL SIDE OF TRENCHES, IT IS TO BE BACKSLOPED TO DRAIN TOWARD THE TRENCH. WHEN NECESSARY TO DEWATER THE TRENCHES, THE PUMP DISCHARGE HOSES MUST OUTLET IN A STABILIZED AREA TO AN EXISTING STORM INLET.
11. ANY SOIL REMOVED FROM THE SITE SHALL BE PLACED IN A PERMITTED SITE, ANY SOIL THAT IS BROUGHT ONTO THE SITE WILL BE OBTAINED FROM A PERMITTED SITE.
12. THE LIMITS OF DISTURBANCE AS SHOWN ON THIS PLAN ARE ULTIMATE LIMITS FOR THE PROJECT. THE CONTRACTOR MUST APPLY SEPARATELY TO THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES) FOR ANY WORK, INCLUDING THE PLACEMENT OF CONSTRUCTION FENCING, WITHIN THE PUBLIC RIGHT-OF-WAY. THE CITY WILL NOT ALLOW INCLUSION OF ANY PORTION OF THE PUBLIC RIGHT-OF-WAY, INCLUDING SIDEWALKS, INTO THE PROJECT AREA FOR THE PROJECT DURATION. WORK AND ASSOCIATED CLOSURES IN THE PUBLIC RIGHT OF WAY WILL BE PERMITTED SEPARATELY ON AN AS NEEDED BASIS BY T&ES.
13. ALL DISTURBED AREAS ARE TO DRAIN APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
14. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED THROUGH AN APPROVED FILTERING DEVICE OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY IMPACT FLOWING STREAMS OR OFF-SITE PROPERTY.
15. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT, ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
16. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT EROSION AND SEDIMENTATION AND AS DETERMINED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL (T&ES) SERVICES OF THE CITY OF ALEXANDRIA.
17. ANY DENUDED SLOPES, EITHER DISTURBED OR CREATED BY THIS PLAN THAT EXCEED 2500 SQUARE FEET SHALL BE SODDED AND PEGGED FOR STABILITY AND EROSION CONTROL. AT THE COMPLETION OF THE PROJECT AND PRIOR TO THE RELEASE OF THE BOND, ALL DISTURBED AREAS SHALL BE STABILIZED PERMANENTLY AND ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED.
18. ALL VEHICLES SHALL BE CLEANED BEFORE ENTERING ONTO THE PUBLIC RIGHT-OF-WAY.
19. THE WASH WATER FROM THE CONSTRUCTION ENTRANCE SHALL BE FILTERED THROUGH THE PROVIDED SILT FENCE TO ENSURE THAT NO SEDIMENT LADEN RUNOFF IS ALLOWED TO RUNOFF ON TO THE ADJACENT PROPERTY OR THE PUBLIC RIGHT OF WAY.
20. INSTALL SILT FENCE AND TREE PROTECTION, WHERE APPLICABLE.
21. DUST CONTROL SHALL BE ACCOMPLISHED BY TEMPORARY VEGETATIVE COVER AND BY IRRIGATION AS NEEDED.
22. A VSMP PERMIT IS REQUIRED FOR THIS PROJECT. A VSMP PERMIT MUST BE OBTAINED FROM THE CITY OF ALEXANDRIA FOR PROJECTS WITH MORE THAN ONE ACRE OF LAND DISTURBANCE.
23. THIS SITE IS SUBJECT TO SEPARATE PERMITS.

CERTIFIED LAND DISTURBER

A "CERTIFIED LAND DISTURBER" (CLD) SHALL BE NAMED IN A LETTER TO THE DIVISION CHIEF OF INFRASTRUCTURE RIGHT OF WAY PRIOR TO ANY LAND DISTURBANCE ACTIVITIES. IF THE CLD CHANGES DURING THE PROJECT, THAT CHANGE MUST BE NOTED IN A LETTER TO THE DIVISION CHIEF AND CITY INSPECTOR.

CONTAMINATED SOILS

THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES, OFFICE OF ENVIRONMENTAL QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OF UNDERGROUND STORAGE TANKS, DRUMS & CONTAINERS ARE ENCOUNTERED AT THE SITE. IF THERE IS ANY DOUBTS ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, IT'S CONTENTS, ANY SOIL CONTAINMENT AND RELEASE TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE AND CITY REGULATIONS.

SEQUENCE OF CONSTRUCTION FOR INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES

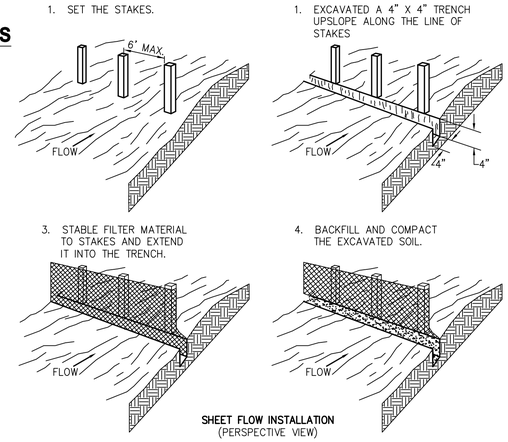
1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS; AND STABILIZE CONSTRUCTION ENTRANCE AS SHOWN ON THIS PLAN.
2. ALL VEGETATION PRESERVATION AND PROTECTION METHODS SHALL BE APPROVED/VERIFIED IN FIELD BY THE CITY ARBORIST PRIOR TO COMMENCEMENT OF ANY GROUND DISTURBING ACTIVITY.
3. INSTALL INLET PROTECTION AT EXISTING STORM DRAIN INLETS AS NECESSARY AND AS SHOWN ON THIS PLAN.
4. INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES AS NECESSARY AND AS DIRECTED BY THE EROSION AND SEDIMENT CONTROL INSPECTOR.
5. CONDUCT DEMOLITION AND CONSTRUCTION ACTIVITIES ACCORDING TO THE APPLICABLE PLANS.
6. AS CONTRIBUTORY DRAINAGE AREAS ARE STABILIZED AND WITH THE PERMISSION OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE INDIVIDUAL EROSION AND SEDIMENT CONTROL PRACTICES.
7. UPON COMPLETION OF DEMOLITION, CONSTRUCTION AND LAND DISTURBING ACTIVITIES; PROVIDE PERMANENT STABILIZATION ACCORDING TO APPROVED METHODS AND REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROL MEASURES WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR.

CONSTRUCTION STAGING NOTE

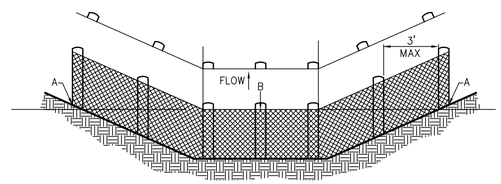
NO MAJOR CONSTRUCTION STAGING SHALL BE ALLOWED WITHIN THE PUBLIC RIGHT-OF-WAY ON N. PATRICK STREET, WYTHE STREET AND PENDLETON STREET. CONTRACTOR SHALL MEET WITH T&ES TO DISCUSS CONSTRUCTION STAGING ACTIVITIES PRIOR TO RELEASE OF ANY PERMITS FOR GROUND DISTURBANCE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. AN EROSION AND SEDIMENT CONTROL PLAN MUST BE APPROVED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES PRIOR TO ANY LAND DISTURBING ACTIVITY GREATER THAN 2,500 SQUARE FEET.
2. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA AND VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), VIRGINIA REGULATIONS §4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.
3. AN EROSION AND SEDIMENT CONTROL PLAN IS INCLUDED WITH THESE FINAL PLANS FOR APPROVAL BY THE DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES FOR REFERENCE BY THE EROSION AND SEDIMENT CONTROL PERMIT.
4. A "CERTIFIED LAND DISTURBER" (CLD) SHALL BE NAMED IN A LETTER TO THE DIVISION CHIEF OF CONSTRUCTION MANAGEMENT AND INSPECTION PRIOR TO ANY LAND DISTURBING ACTIVITIES. IF THE CLD CHANGES DURING THE PROJECT, THAT CHANGE MUST BE NOTED IN A LETTER TO THE DIVISION CHIEF.
5. THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, CONSTRUCTION AND INSPECTION (C&I) DIVISION MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENTS OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION. THE RESPONSIBLE CERTIFIED LAND DISTURBER (CLD) SHALL ATTEND THE PRE-CONSTRUCTION MEETING.
6. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES INTENDED TO CONTROL EROSION AND TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UP-SLOPE LAND DISTURBANCE TAKES PLACE.
7. CONSTRUCTION SHALL BE SEQUENCED SUCH THAT GRADING OPERATION CAN BEGIN AND END AS QUICKLY AS POSSIBLE. AREAS NOT TO BE DISTURBED MUST BE CLEARLY FLAGGED OR MARKED.
8. AN INSPECTION BY THE CITY OF ALEXANDRIA IS REQUIRED AFTER INITIAL INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND BEFORE ANY CLEARING OR GRADING CAN BEGIN.
9. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
10. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN THOSE INDICATED ON THESE PLANS INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS, THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE CITY OF ALEXANDRIA.
11. THE DEVELOPER AND CONTRACTORS ARE TO KEEP DENUDED AREAS TO A MINIMUM. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN 10 DAYS MUST BE SEEDED FOR TEMPORARY VEGETATION AND MULCHED WITH STRAW MULCH OR OTHERWISE STABILIZED.
12. ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED AS SOON AS POSSIBLE BUT NO LATER THAN 48 HOURS AFTER GRADING.



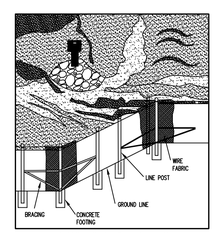
SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)



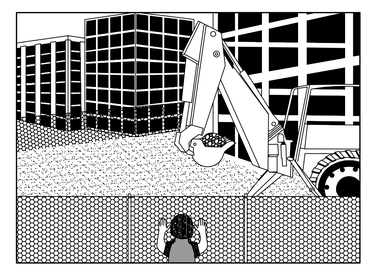
POINTS A SHOULD BE HIGHER THAN POINT B.
DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

CONSTRUCTION OF SILT FENCE (WITHOUT WIRE SUPPORT)

NOT TO SCALE



PERSPECTIVE VIEW
METAL FENCE



SAFETY FENCE

MOVABLE POSTS ARE TO BE USED IN THE ROADWAYS. SEE C-0601 & C-0602 FOR SAFETY FENCE LOCATION.

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COMMONWEALTH OF VIRGINIA
AARON M. VINSON
Lic. No.041851
3/30/17
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

REVISION APPROVED BY

RAMSEY HOMES REDEVELOPMENT 699 N PATRICK STREET

FINAL SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

EROSION & SEDIMENT CONTROL NOTES AND DETAILS

APPROVED
SPECIAL USE PERMIT NO. 2014-0035
DEPARTMENT OF PLANNING & ZONING

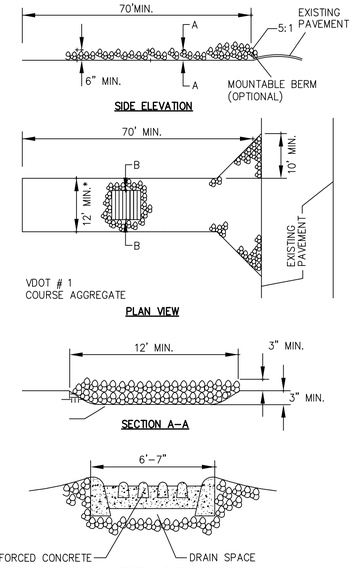
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.



CONSTRUCTION ENTRANCE

NOT TO SCALE

US Filter Bags are designed to collect silt and sediment from pumped water and are ideal for construction site dewatering applications. To begin dewatering, simply cut an opening into the bag, insert the discharge hose and secure the connection with a clamp, tie or tape. US Filter Bags are made from a nonwoven, needlepunched, polypropylene geotextile that meets the following M.A.R.V. values except where noted:

PROPERTY	TEST METHOD	ENGLISH	METRIC
Weight - Typical	ASTM D-5261	8 oz/sy	271 g/sm
Tensile Strength	ASTM D-4632	205 lbs	912 N
Elongation @ Break	ASTM D-4632	50%	50%
Mullen Burst	ASTM D-3786	350 psi	2,413 kPa
Puncture Strength	ASTM D-4833	120 lbs	534 N
CBR Puncture	ASTM D-6241	535 lbs	2,381 N
Trapezoidal Tear	ASTM D-4533	85 lbs	378 N
Apparent Opening Size	ASTM D-4751	80 US Sieve	0.180 mm
Permittivity	ASTM D-4491	1.35 Sec-1	1.35 Sec-1
Water Flow Rate	ASTM D-4491	90 g/min/sf	3,657 l/min/sm
UV Resistance @ 500 Hours	ASTM D-4355	70%	70%

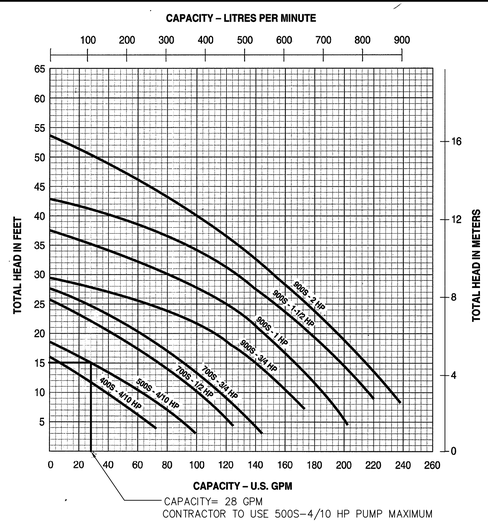
ROLL SIZE	AREA	WEIGHT
15' x 10'	17 sys	20 lbs
15' x 15'	25 sys	30 lbs

The above information is to the best of our knowledge accurate, but it is not intended to be considered a guarantee. Any implied warranty for a particular use or purpose is excluded. If the product does not meet the above properties, and notice is given to US Fabrics, Inc., the product will be replaced or refunded (1/2011).

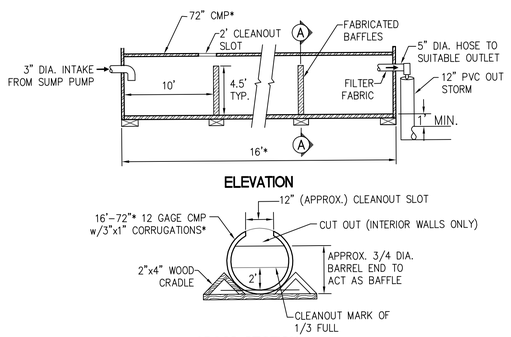
DE-WATERING DETAIL (IF NECESSARY)

NOT TO SCALE

NOTE: TO BE USED ON AN AS–NEEDED BASIS FOR SILT CONTROL



PUMP SELECTION CHART



NOTE: TANK TO BE CLEANED OF ALL SEDIMENT WHEN 1/3 FULL SEDIMENT TO BE PLACED AND STABILIZED ON SITE OR HAULED OFFSITE. SEDIMENT NOT TO BE INTRODUCED TO DRAINAGE OUTFALL SYSTEM.

VOLUME COMPUTATIONS:

REQUIRED: 16 x PUMP RATE IN GPM = 16 x 28* = 448 CF
* PUMP DISCHARGE RATE @ 15' HEAD = 28 GPM

PROVIDED: $\pi r R^2 \times L = \pi(3)^2 \times 16' = 452$ CF

PORTABLE SEDIMENT TANK

*NOTE: CONTRACTOR MAY MODIFY DESIGN OF SEDIMENT TANK (PUMP, STORAGE, PIPE SIZE, ETC.) BUT MUST SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO INSTILLATION.

TEMPORARY SEEDING TABLE

TABLE 3.31-C

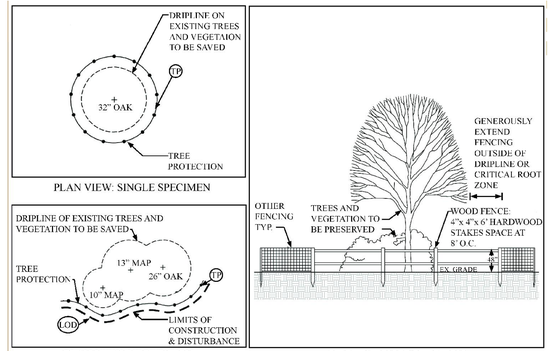
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE		NORTH[a]			SOUTH[b]			PLANT CHARACTERISTICS
	Acre	1000 ft²	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15	
OATS (Avena sativa)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-	Use spring varieties (e.g., Noble).
RYE[d] (Secale cercale)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (Setaria italica)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS[c] (Lolium multi-florum)	60 lbs.	1½ lbs.	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.
WEEPING LOVEGRASS (Eragrostis curvula)	15 lbs.	5½ ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.
KOREAN LESPEDEZA[c] (Lespedeza stipulacea)	25 lbs.	approx. 1½ lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.

[a] Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
[b] Southern Piedmont and Coastal Plain.
[c] May be used as a cover crop with spring seeding.
[d] May be used as a cover crop with fall seeding.
X May be planted between these dates.
\- May not be planted between these dates.

1992

3.31



TREE PROTECTION DETAIL

NOT TO SCALE

PROVIDED FOR INFORMATION ONLY, TREE PRESERVATION FENCE IS NOT PROPOSED WITH THIS PLAN.

NOTES FOR PROTECTION AND PRESERVATION OF EXISTING VEGETATION

1. ALL PROTECTION AND PRESERVATION MEASURES FOR EXISTING VEGETATION INCLUDING MAINTENANCE SHALL BE PREPARED IN COMPLIANCE WITH LANDSCAPE GUIDELINES OF THE CITY OF ALEXANDRIA AND APPROVED BY THE CITY ARBORIST IN–FIELD PRIOR TO COMMENCEMENT OF ANY SIZE DISTURBING AND CONSTRUCTION ACTIVITIES.
2. ALL VEGETATION PRESERVATION AND PROTECTION METHODS SHALL BE APPROVED/VERIFIED IN FIELD BY THE CITY ARBORIST PRIOR TO COMMENCEMENT OF ANY GROUND DISTURBING ACTIVITY.
3. LOCATION AND METHOD FOR PROTECTION AND PRESERVATION OF EXISTING TREES WILL BE SHOWN ON DEMOLITION, SEDIMENT AND EROSION CONTROL AND LANDSCAPE SHEETS.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE THAT ANY EXISTING LANDSCAPING WHICH IS TO BE RELOCATED ON THE SITE WILL BE CAREFULLY STORED IN A DESIGNATED AREA BEFORE BEING REPLANTED. COORDINATION WITH THE OWNER FOR MUTUALLY AGREEABLE STORAGE LOCATIONS FOR LANDSCAPE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF PLANT MATERIAL THAT DOES NOT SURVIVES STORAGE AND REPLANTING.
5. APPLICANT MUST INCLUDE ON THE PLAN DOCUMENTATION OF COMMUNICATION WITH THE ADJACENT PROPERTY OWNER(S) VERIFYING NOTIFICATION OF AN AGREEMENT WITH CONSTRUCTION IMPACT, POTENTIAL FOR LOSS, AND AGREED UPON REMEDIAL MEASURES PERTAINING TO THE EXISTING TREE(S) ON ADJACENT PROPERTIES THAT WILL BE AFFECTED BY PROJECT WORK.
6. INCLUDE SPECIFIC CONSTRUCTION STAGING INFORMATION ON THE PLAN THAT INDICATES THE METHODS, AND PROCEDURES TO BE IMPLEMENTED FOR PROTECTION OF EXISTING ON–SITE AND OFF–SITE VEGETATION.

PERMANENT SEEDING TABLE

TABLE 3.32-D

SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	
- Kentucky 31 or Turf-Type Tall Fescue	175-200 lbs.
or	
- Common Bermudagrass **	75 lbs.
High-Maintenance Lawn	
- Kentucky 31 or Turf-Type Tall Fescue	200-250 lbs.
or	
- Hybrid Bermudagrass (seed) **	40 lbs. (unhulled)
or	30 lbs. (hulled)
- Hybrid Bermudagrass (by other vegetative establishment method, see Std. & Spec. 3.34)	
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Tall Fescue	93-108 lbs.
- Common Bermudagrass **	0-15 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Sericea Lespedeza **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:
February, March through April ..... Annual Rye
May 1st through August ..... Foxtail Millet
September, October through November 15th ..... Annual Rye
November 16th through January ..... Winter Rye

** May through October, use hulled seed. All other seeding periods, use unhulled seed. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

GUTTER GATOR™

Sediment Containment

GutterGator™
Curb Inlet Filter

GutterGator™ Advantages

- *7" Tall - allows for overflow*
- *Unique design - ships in 4' box*
- *Easy to transport and install*
- *Easy to assemble*
- *Keeps sediment, trash, and debris out of storm sewers*
- *Easy to clean and reuse*
- *Weight pocket holds unit in place*
- *Unique multi-dimensional outer filter with rigid inner frame allows high flow rates*
- *Low profile to curb helps prevent damage from vehicles*
- *Tie back straps for additional support*
- *Custom sizes available*

GutterGator™

The GutterGator™ is the latest inlet filter technology available from ACF Environmental.

Designed for curb inlets, GutterGator™ is designed for high flow volumes while maintaining maximum sediment retention.

With its unique multi-dimensional outer filter combined with a rigid inner frame, the GutterGator™ maintains a low profile to the curb preventing damage.

Save time and money! GutterGator™ installs in seconds, removes in minutes and is reusable. Stop sediment in its tracks with GutterGator!

Call ACF Environmental for more information.

GutterGator Specification:

For Curb Gutter Storm Drains

1.0 Description

1.1 This work shall consist of furnishing, placing, maintaining and removing the GutterGator sediment control device as directed by the engineer and as shown on the contract drawings. The GutterGator sediment control system manufactured by:

ACF Environmental Inc.
2831 Cawdwell Road
Richmond, Virginia 23234
Phone: 800-848-3929 • Fax: 804-743-7779
www.acfenvironmental.com

2.0 Materials

2.1 GUTTERGATOR

2.1.1 The GutterGator will be manufactured to 3' molds in 3', 6', 9', 12', 15' and 18' lengths and a minimum of twenty-four (24) inches longer than the curb inlet opening. This will allow for sufficient length to cover the inlet with twelve (12) inches beyond the inlet on both ends.

3.0 Construction Sequence

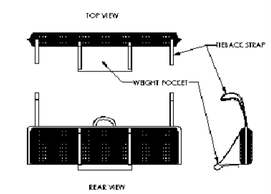
3.1 General

3.1.1 Install the GutterGator in front of the curb inlet opening. Drop 7lb weight sock into inlet opening, secure tie back straps, if applicable. Each end of the GutterGator should overlap the curb inlet approximately 12".

3.1.2 The GutterGator should be cleaned if a visual inspection shows sediment and debris build up around the GutterGator.

3.1.3 To remove the GutterGator, lift out of curb opening with provided carrying handle.

3.1.4 Clean as needed. Store out of direct sunlight.



INLET PROTECTION DETAIL

NOT TO SCALE

GENERAL STABILIZATION NOTES

1. BARE SOIL SURFACES NOT AT FINISH GRADE, WHICH WILL BE EXPOSED MORE THAN 7 DAYS, SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING PER STD. AND SPEC. NO.3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
2. ALL TEMPORARY SEEDING SHALL CONFORM TO VESCH. SPEC 3.31. (SEE C–0604)
3. ALL PERMANENT SEEDING SHALL CONFORM TO VESCH. SPEC 3.32. (SEE C–0604)
4. ALL SODDING SHALL CONFORM TO VESCH. SPECIFICATION SPECIFICATION. 3.33.

ESI Peer Review

WALTER L. PHILLIPS INCORPORATED
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Engineers • Surveyors • Planners • Landscape Architects • Arborists
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
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COMMONWEALTH OF VIRGINIA
AARON M. VINSON
Lic. No.041851
3/30/17
PROFESSIONAL ENGINEER

REVISION APPROVED BY

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RAMSEY HOMES REDEVELOPMENT
699 N PATRICK STREET
FINAL SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

EROSION & SEDIMENT CONTROL NOTES AND DETAILS

APPROVED
SPECIAL USE PERMIT NO. 2014–0035
DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR DATE

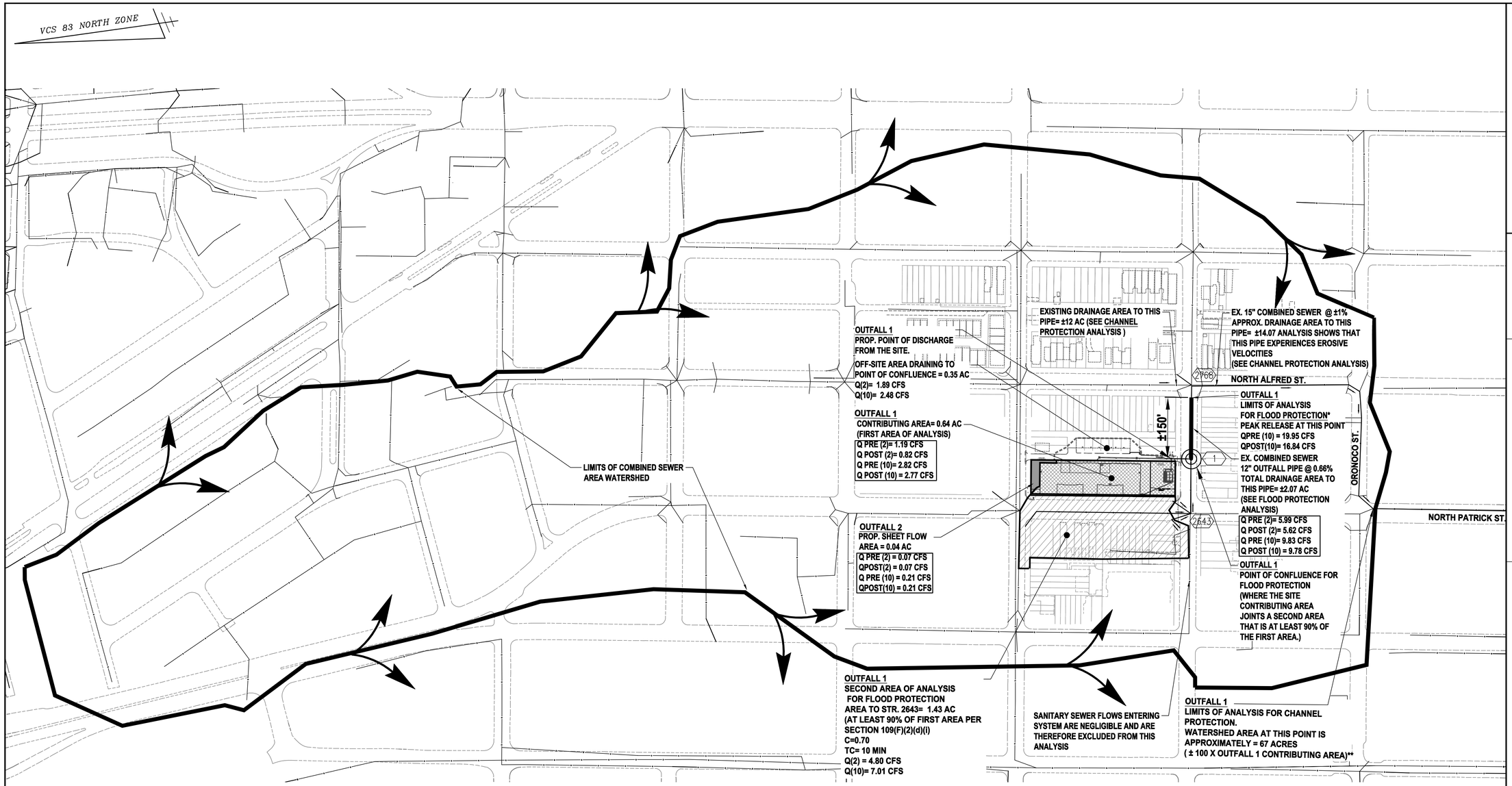
CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

SHEET: C-0604

File No. ALEX Tax Map No. 54.04 Job No. 14-029 Cadd Dwg. File: Q:\sdskproj\14029\dwg\Engineering\Site Plan\14029C–0603.dwg



OUTFALL ANALYSIS MAP

120 0 60 120 240 480

1 INCH = 120'

OUTFALL 1 - CHANNEL PROTECTION ANALYSIS

BASED ON THE OUTFALL ANALYSIS MAP SHOWN, CONCENTRATED FLOW FROM THE SITE IS CONVEYED BY A MAN MADE SYSTEM WITHIN A WATERSHED THAT IS 100 TIMES THE SITE AREA. DUE TO THE THE EXISTING PIPE DIAMETER AND SLOPE OF DOWNSTREAM PIPES AND BASED ON THE PRELIMINARY CALCULATIONS BELOW, IT IS ESTIMATED THAT THE EXISTING DOWNSTREAM COMBINED SEWER SYSTEM EXPERIENCES EROSIVE VELOCITIES:

DRAINAGE AREA TO 15" COMBINED SEWER PIPE= ± 14.07 AC (ON N. ALFRED ST)
APPROX. FLOW (Q2) = 0.8 X 6 IN/HR X 14.07 AC = 67.54 CFS
ASSUMING PIPE RUNS AT FULL CAPACITY, V2 = Q2/A,
WHERE A= 1.22 SF (15" DIAMETER RECEIVING PIPE)
THEN ESTIMATED VELOCITY WITHIN DOWNSTREAM RECEIVING SYSTEM:
V2 = 67.54 CFS/ 1.22 SF =55.36 FPS > 15 FPS (EROSIVE VELOCITY)

THEREFORE, IN ORDER TO MEET THE REQUIREMENTS OF CHANNEL PROTECTION, THE APPLICANT PROPOSES TO RELEASE THE 1 YR, 24 HR STORM FROM THE PROPOSED DEVELOPMENT IN ACCORDANCE WITH METHODOLOGY DESCRIBED IN SECTION 13–109(F)(1)(c):

$$Q(1) = \frac{0.9 \times (QPRE \times VPRE)}{VPOST}$$

OUTFALL 1 - FLOOD PROTECTION ANALYSIS

THE DEVELOPMENT PROPOSES TO DETAIN THE 10YR, 24 HR STORM EVENT PEAK RATE OF RUNOFF BELOW THE PEAK RELEASE FROM THE PRE–DEVELOPMENT CONDITIONS. THEREFORE, IN ACCORDANCE WITH Z.O 13–109(F)(2)(d)(i), THE ALTERNATIVE LIMITS OF ANALYSIS SHALL BE UTILIZED FOR THE ANALYSIS OF FLOOD PROTECTION.

AS SHOWN IN THE OUTFALL ANALYSIS MAP, OUTFALL PIPE RECEIVING DISCHARGES FROM THE SITE, JOINS A DRAINAGE AREA, AT THE POINT OF CONFLUENCE SHOWN, THAT IS AT LEAST 90% IN SIZE OF THE FIRST CONTRIBUTING AREA (AREA FROM SITE), THEREFORE, THE LIMITS OF ANALYSIS FOR FLOOD PROTECTION SHALL EXTEND 150' FROM THE POINT OF CONFLUENCE.

BASED ON AN ANALYSIS OF THE EXISTING 12" COMBINED SEWER 150' DOWNSTREAM OF THE POINT OF CONFLUENCE, THE DOWNSTREAM SYSTEM EXPERIENCES LOCALIZED FLOODING. THEREFORE, DETENTION ONSITE WILL BE PROVIDED TO RELEASE THE 10 YR, 24 HR STORM BELOW THE PRE–DEVELOPMENT RATE IN ACCORDANCE WITH Z.O. 13–109(F)(2)(b)(ii).

OUTFALL 2 - SHEET FLOW

AS SHOWN ON THIS SHEET, A PORTION OF THE SITE WILL CONTINUE TO SHEET FLOW OFFSITE TO THE NORTH EAST CORNER OF THE SITE. SHEET FLOW EVENTUALLY DRAINS INTO THE EXISTING SEWER SYSTEM AS SHOWN IN THE OUTFALL ANALYSIS MAP. STORMWATER MANAGEMENT COMPUTATIONS ON SHEET C–0705 DEMONSTRATE THAT RUNOFF THAT SHEET FLOWS FROM THE SITE WILL BE REDUCED UNDER POST–DEVELOPMENT CONDITIONS. SINCE THE EXISTING SITE CURRENTLY DISCHARGES SHEET FLOW TO THIS OUTFALL AND THE PROPOSED DEVELOPMENT INTENDS TO REDUCE THE PEAK RATE OF RUNOFF SHEET FLOWING TO THIS OUTFALL IN THE POST DEVELOPMENT CONDITIONS, THEN NO ADDITIONAL WATER QUANTITY CONTROLS ARE REQUIRED.

LEDGEND

- OUTFALL 1 CONTRIBUTING AREA= 0.64 AC
- OUTFALL 2 CONTRIBUTING AREA= 0.04 AC
- SECOND AREA OF ANALYSIS= 1.43 AC (FOR COMPLIANCE WITH ALTERNATIVE LIMITS OF ANALYSIS FOR FLOOD PROTECTION)
- OFF–SITE AREA TO POINT OF CONFLUENCE (AREA ANALYZED TO DETERMINE TOTAL FLOW WITHIN EXISTING 12" COMBINED SEWER RECEIVING PIPE)
- POINT OF CONFLUENCE

NOTES

* ALTERNATIVE LIMIT OF ANALYSIS FOR FLOOD PROTECTION USED PER SECTION 13–109(F)(2)(d)(i), DETENTION PROVIDED ON SITE COMPLIES WITH CRITERIA DESCRIBED IN SECTION 13–109(F)(2)(b)(ii). SEE SHEET C–0705 FOR PRE–DEVELOPMENT AND POST–DEVELOPMENT RUNOFF RELEASES FROM THE SITE.

** THERE ARE NO NATURAL STREAMS WITHIN DEVELOPMENT'S WATERSHED WITH A LAND AREA EQUAL TO 100 TIMES THE CONTRIBUTING AREA.

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SUBMISSION #1	4/14/17

COMMONWEALTH OF VIRGINIA PROFESSIONAL ENGINEER
AARON M. VINSON
Lic. No.041851
3/30/17

REVISION APPROVED BY

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RAMSEY HOMES REDEVELOPMENT
699 N PATRICK STREET
FINAL SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

OUTFALL ANALYSIS

APPROVED
SPECIAL USE PERMIT NO. 2014–0035
DEPARTMENT OF PLANNING & ZONING

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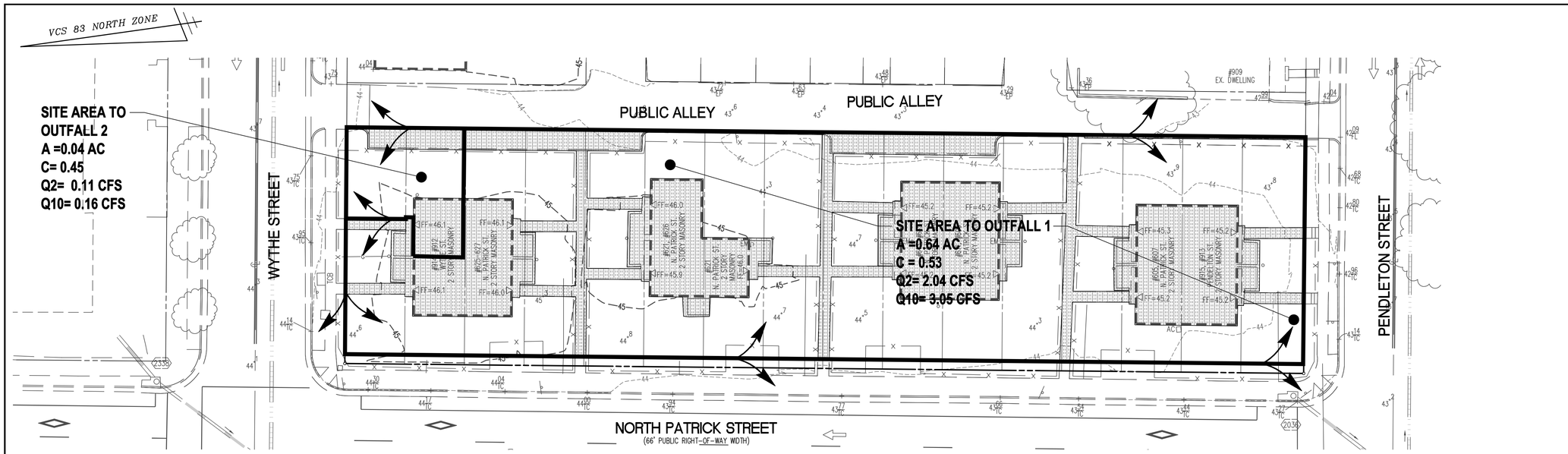
CHAIRMAN, PLANNING COMMISSION DATE

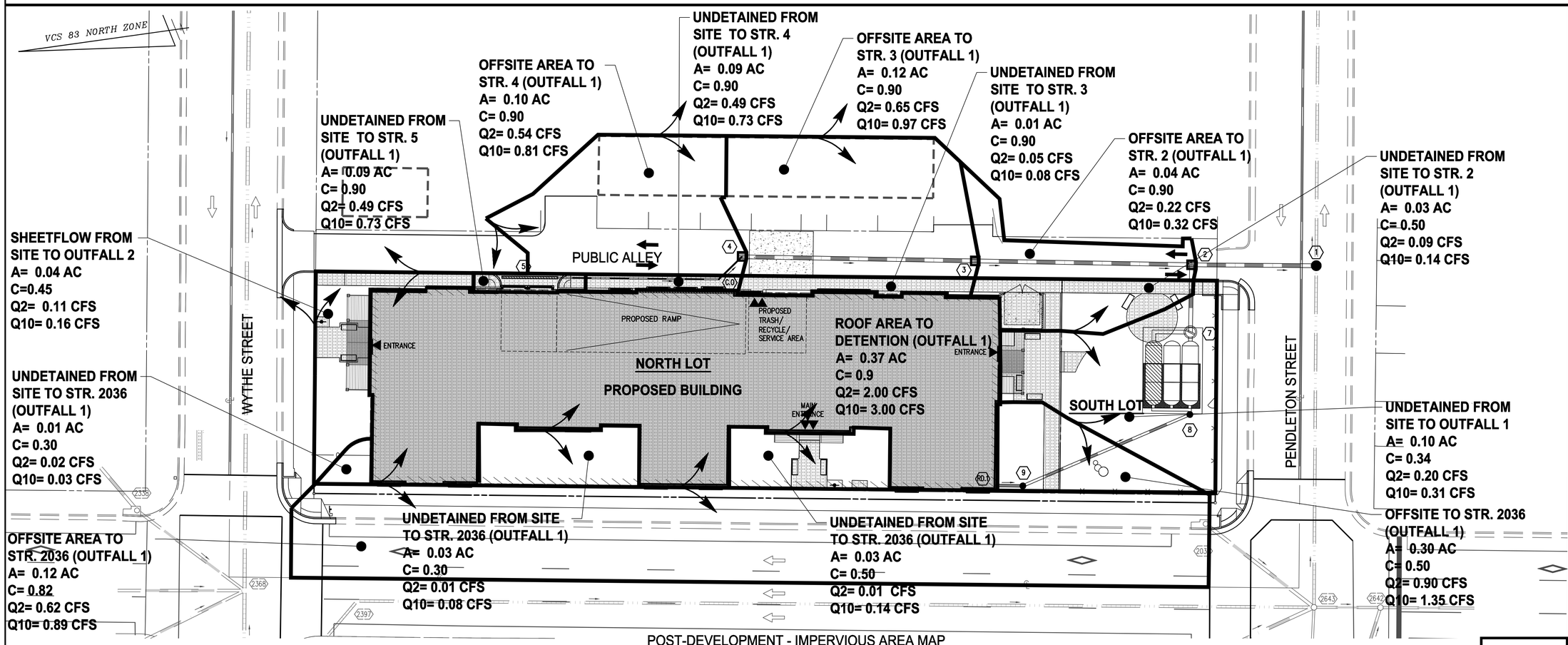
DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.



PRE-DEVELOPMENT- IMPERVIOUS AREA MAP

IMPERVIOUS AREA (0.26 ACRES)



POST-DEVELOPMENT - IMPERVIOUS AREA MAP

IMPERVIOUS AREA (0.43 ACRES)

ESI Peer Review

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Engineers • Surveyors • Planners • Landscape Architects • Arborists
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-8163 Fax (703) 533-1301 www.WLPINC.com

SCALE: 1" = 20' | DATE: 3/30/2017 | DRAWN: DP, DM | CHECKED: BF

ESI MSR #1 3/30/17
SUBMISSION #1 4/14/17

COMMONWEALTH OF VIRGINIA
AARON M. VINSON
Lic. No.041851
3/30/17
PROFESSIONAL ENGINEER

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

RAMSEY HOMES REDEVELOPMENT 699 N PATRICK STREET

FINAL SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

IMPERVIOUS AREA ANALYSIS AND DRAINAGE DIVIDES

APPROVED
SPECIAL USE PERMIT NO. 2014-0035
DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

File No. ALEX Tax Map No. 54.04 Job No. 14-029 Cadd Dwg. File: Q:\sdskproj\14029\dwg\Engineering\Site Plan\14029C-0702.dwg

SHEET: C-0702

88

VIRGINIA RUNOFF REDUCTION METHOD

Virginia Runoff Reduction Method ReDevelopment Worksheet v2.7 Revised April 2013

Site Data

Project Name: Ramsey Homes (DSUP)
Date: 3/20/2017

data input cells
calculation cells
constant values

Post-ReDevelopment Project & Land Cover Information

Total Disturbed Acreage 0.68

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Phosphorus EMC (mg/L)	0.26
Nitrogen EMC (mg/L)	1.86
Target Phosphorus Target Load (lb/acre/yr)	0.41
Pj	0.90

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.42	0.00	0.00	0.42
Impervious Cover (acres)	0.00	0.26	0.00	0.00	0.26
				Total	0.68

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.25	0.00	0.00	0.25
Impervious Cover (acres)	0.00	0.43	0.00	0.00	0.43
				Total	0.68
Area Check	Okay	Okay	Okay	Okay	

Rv Coefficients

	A soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Land Cover Summary Pre-ReDevelopment	Listed	Adjusted[1]
Forest/Open Space Cover (acres)	0.00	0.00
Composite Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.42	0.25
Composite Rv(turf)	0.20	0.20
% Managed Turf	62%	49%
Impervious Cover (acres)	0.26	0.26
Rv(impervious)	0.95	0.95
% Impervious	38%	51%
Total Site Area (acres)	0.68	0.51
Site Rv	0.49	0.58
Pre-Development Treatment Volume (acre-ft)	0.0276	0.0248
Pre-Development Treatment Volume (cubic feet)	1,202	1,078
Pre-Development Load (TP) (lb/yr)	0.75	0.68

Land Cover Summary Post-ReDevelopment	
Forest/Open Space Cover	0.00
Composite Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.25
Composite Rv(turf)	0.20
% Managed Turf	49%
ReDev. Impervious Cover (acres)	0.26
Rv(impervious)	0.95
% Impervious	51%
Total ReDev. Site Area (acres)	0.51
ReDev. Site Rv	0.58
Post-ReDevelopment Treatment Volume (acre-ft)	0.0248
Post-ReDevelopment Treatment Volume (cubic feet)	1,078
Post-ReDevelopment Load (TP) (lb/yr)	0.68

Land Cover Summary Post-ReDevelopment New Impervious	
New Impervious Cover (acres)	0.17
Rv(impervious)	0.95
% Impervious	100%
Total New Dev. Site Area (acres)	0.17
New Dev. Site Rv	0.95
Post-Development Treatment Volume (acre-ft)	0.0135
Post-Development Treatment Volume (cubic feet)	586
Post-Development Load (TP) (lb/yr)	0.37

[1] *Adjusted* **Land Cover Summary** reflects the pre redevelopment land cover minus the pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover. The adjusted total acreage is consistent with the Post Redevelopment acreage (minus the acreage of new impervious cover). The load reduction requriement for the new impervious cover to meet the new development load limit is computed in **Column I**.

Maximum % Reduction Required Below Pre-ReDevelopment Load	10%
TP Load Reduction Required for Redeveloped Area (lb/yr)	0.07
TP Load Reduction Required for New Impervious Area (lb/yr)	0.30
Total Load Reduction Required (lb/yr)	**0.37**
Pre-Development Load (TN) (lb/yr)	5.40
Post-Development Load (TN) (lb/yr)	7.48

WATER QUALITY

Site Results

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
IMPERVIOUS COVER	0.37	0.04	0.02	0.00	0.00	OK.
IMPERVIOUS COVER TREATED	0.37	0.00	0.00	0.00	0.00	OK.
TURF AREA	0.00	0.23	0.02	0.00	0.00	OK.
TURF AREA TREATED	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Phosphorous

TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	0.37
RUNOFF REDUCTION (cf)	1148
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	0.74
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	0.31
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.4 LB/YEAR!! ← WATER QUALITY COMPLIANCE

Drainage Area A (AREA TO INFILTRATION)

Drainage Area A Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	0.00	0.00	0.00	0.00
Impervious Cover (acres)	0.00	0.37	0.00	0.00	0.37	0.95
				Total	0.37	

Post Development Treatment Volume (cf) 1276

Apply Runoff Reduction Practices to Reduce Treatment Volume & Post-Development Load in Drainage Area A

Credit	Unit	Description of Credit	Credit	Credit Area (acres)	Volume from Upstream RR Practice (cf)	Runoff Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Phosphorus Load from Upstream RR Practices (lbs)	Untreated Phosphorus Load to Practice (lbs.)	Phosphorus Removed By Practice (lbs.)	Remaining Phosphorus Load (lbs.)	Downstream Treatment to be Employed
7. Infiltration													
7.b. Infiltration #2 (Spec #8)	impervious acres draining to infiltration	90% runoff volume reduction	0.90	0.37	0	1148	128	25	0.00	0.80	0.74	0.06	
	turf acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00	

TOTAL IMPERVIOUS COVER TREATED (ac)	0.37
TOTAL TURF AREA TREATED (ac)	0.00
AREA CHECK	OK.
TOTAL PHOSPHOROUS REMOVAL REQUIRED ON SITE (lb/yr)	0.37
TOTAL RUNOFF REDUCTION IN D.A. A (cf)	1,148
PHOSPHORUS REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.74

← RUNOFF REDUCTION VOLUME ACHIEVED BASED ON 1" OF RUNOFF

Drainage Area B (UNTREATED AREAS TO OUTFALL 1)*

Drainage Area B Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.23	0.00	0.00	0.23	0.20
Impervious Cover (acres)	0.00	0.04	0.00	0.00	0.04	0.95
				Total	0.27	

Post Development Treatment Volume (cf) 305

Drainage Area C (UNTREATED AREAS TO OUTFALL 2)*

Drainage Area C Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.02	0.00	0.00	0.02	0.20
Impervious Cover (acres)	0.00	0.02	0.00	0.00	0.02	0.95
				Total	0.04	

Post Development Treatment Volume (cf) 83

* PROVIDED FOR INFORMATION ONLY.

CHANNEL AND FLOOD PROTECTION

	1-year storm	2-year storm	10-year storm
Target Rainfall Event (in)	2.70	3.20	5.20

← CITY OF ALEXANDRIA DESIGN RAINFALL DEPTHS

Drainage Area A	
Drainage Area (acres)	0.37
Runoff Reduction Volume (cf)	1,148
Drainage Area B	
Drainage Area (acres)	0.27
Runoff Reduction Volume (cf)	0
Drainage Area C	
Drainage Area (acres)	0.04
Runoff Reduction Volume (cf)	0

Based on the use of Runoff Reduction practices in the selected drainage areas, the spreadsheet calculates an adjusted $RV_{Developed}$ and adjusted Curve Number.

Drainage Area A		A soils	B Soils	C Soils	D Soils
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00
	CN	30	55	70	77
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.00	0.00	0.00
	CN	39	61	74	80
Impervious Cover	Area (acres)	0.00	0.37	0.00	0.00
	CN	98	98	98	98
				Weighted CN	S
				98	0.20

	1-year storm	2-year storm	10-year storm
$RV_{Developed}$ (in) with no Runoff Reduction	2.47	2.97	4.96
$RV_{Developed}$ (in) with Runoff Reduction	1.61	2.11	4.11
Adjusted CN	89	89	90

Drainage Area B		A soils	B Soils	C Soils	D Soils
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00
	CN	30	55	70	77
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.23	0.00	0.00
	CN	39	61	74	80
Impervious Cover	Area (acres)	0.00	0.04	0.00	0.00
	CN	98	98	98	98
				Weighted CN	S
				66	5.15

	1-year storm	2-year storm	10-year storm
$RV_{Developed}$ (in) with no Runoff Reduction	0.41	0.64	1.87
$RV_{Developed}$ (in) with Runoff Reduction	0.41	0.64	1.87
Adjusted CN	66	66	66

Drainage Area C		A soils	B Soils	C Soils	D Soils
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00
	CN	30	55	70	77
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.02	0.00	0.00
	CN	39	61	74	80
Impervious Cover	Area (acres)	0.00	0.02	0.00	0.00
	CN	98	98	98	98
				Weighted CN	S
				80	2.50

	1-year storm	2-year storm	10-year storm
$RV_{Developed}$ (in) with no Runoff Reduction	1.03	1.40	3.07
$RV_{Developed}$ (in) with Runoff Reduction	1.03	1.40	3.07
Adjusted CN	80	80	80

ESI Peer Review

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SCALE: AS NOTED | DATE: 3/30/2017 | DRAWN: DP, DM | CHECKED: BF

ESI MSR #1 3/20/17
SUBMISSION #1 4/14/17

COMMONWEALTH OF VIRGINIA PROFESSIONAL ENGINEER AARON M. VINSON Lic. No.041851 3/30/17

REVISION APPROVED BY					
NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

RAMSEY HOMES REDEVELOPMENT 699 N PATRICK STREET FINAL SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

BMP COMPUTATIONS AND DETAILS

APPROVED
SPECIAL USE PERMIT NO. 2014-0035
DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED _____
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

TAB 6

CONTAIMINATION AND TOXIC SUBSTANCES

Contamination and Toxic Substances (Multifamily and Non-Residential Properties)

General requirements	Legislation	Regulations
It is HUD policy that all properties that are being proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of the occupants or conflict with the intended utilization of the property.		24 CFR 58.5(i)(2) 24 CFR 50.3(i)
Reference		
https://www.hudexchange.info/programs/environmental-review/site-contamination		

1. **How was site contamination evaluated?[1] Select all that apply.**
   - ☒ ASTM Phase I ESA
   - ☐ ASTM Phase II ESA
   - ☐ Remediation or clean-up plan
   - ☐ ASTM Vapor Encroachment Screening
   - ☐ None of the above

   → *Provide documentation and reports and include an explanation of how site contamination was evaluated in the Worksheet Summary.*
   Continue to Question 2.

2. **Were any on-site or nearby toxic, hazardous, or radioactive substances found that could affect the health and safety of project occupants or conflict with the intended use of the property? (Were any recognized environmental conditions or RECs identified in a Phase I ESA and confirmed in a Phase II ESA?)**
   - ☒ No

   Explain:

   No notable findings related to potential environmental concerns in connection with the Property have been identified.

[1] HUD regulations at 24 CFR § 58.5(i)(2)(ii) require that the environmental review for multifamily housing with five or more dwelling units or non-residential property include the evaluation of previous uses of the site or other evidence of contamination on or near the site. For acquisition and new construction of multifamily and nonresidential properties HUD strongly advises the review include an ASTM Phase I Environmental Site Assessment (ESA) to meet real estate transaction standards of due diligence and to help ensure compliance with HUD's toxic policy at 24 CFR §58.5(i) and 24 CFR §50.3(i). Also note that some HUD programs require an ASTM Phase I ESA.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ Yes.

→ *Describe the findings, including any recognized environmental conditions (RECs), in Worksheet Summary below. Continue to Question 3.*

3. **Mitigation**

Document the mitigation needed according to the requirements of the appropriate federal, state, tribal, or local oversight agency. If the adverse environmental effects cannot be mitigated, then HUD assistance may not be used for the project at this site.

Can adverse environmental impacts be mitigated?

☐ Adverse environmental impacts cannot feasibly be mitigated

→ Project cannot proceed at this location.

☐ Yes, adverse environmental impacts can be eliminated through mitigation.

→ *Provide all mitigation requirements[2] and documents. Continue to Question 4.*

4. **Describe how compliance was achieved. Include any of the following that apply: State Voluntary Clean-up Program, a No Further Action letter, use of engineering controls[3], or use of institutional controls[4].**

[2] Mitigation requirements include all clean-up actions required by applicable federal, state, tribal, or local law. Additionally, provide, as applicable, the long-term operations and maintenance plan, Remedial Action Work Plan, and other equivalent documents.

[3] Engineering controls are any physical mechanism used to contain or stabilize contamination or ensure the effectiveness of a remedial action. Engineering controls may include, without limitation, caps, covers, dikes, trenches, leachate collection systems, signs, fences, physical access controls, ground water monitoring systems and ground water containment systems including, without limitation, slurry walls and ground water pumping systems.

[4] Institutional controls are mechanisms used to limit human activities at or near a contaminated site, or to ensure the effectiveness of the remedial action over time, when contaminants remain at a site at levels above the applicable remediation standard which would allow for unrestricted use of the property. Institutional controls may include structure, land, and natural resource use restrictions, well restriction areas, classification exception areas, deed notices, and declarations of environmental restrictions.

If a remediation plan or clean-up program was necessary, which standard does it follow?

☐ Complete removal

→ *Continue to the Worksheet Summary.*

☐ Risk-based corrective action (RBCA)

→ *Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

A Phase I Environmental Assessment has been conducted on the site. There was no evidence of hazardous materials present based on the Phase I findings. Considering the date of construction of the buildings, lead-based paint may be present at the Property. In general, painted surfaces within the space were noted to be in good condition in the accessed areas. Prior lead dust wipe screening sampling performed by others in 1994 identified lead dust in one sample collected from a window sill that exceeded the HUD guideline of 500 ug/ft2. The prior lead dust wipe screening sampling was limited to five of the 14 residential units at the Property.

Given the age of the building, the City of Alexandria will require a full building survey and Pre-Demolition Asbestos survey prior to providing a demolition permit. The survey and permit issued by the City will require appropriate testing and disposition of all waste material and demolition debris. Following demolition, a Toxicity Characteristic Leaching Procedure (TCLP) will be performed to detect the level of lead and other materials to determine the appropriate method of disposal of the construction debris.

HILLMANN
CONSULTING

PHASE I ENVIRONMENTAL SITE ASSESSMENT

RAMSEY HOMES
699 NORTH PATRICK STREET
ALEXANDRIA, VA 22314

PREPARED FOR:

ALEXANDRIA HOUSING & REDEVELOPMENT AUTHORITY
600 NORTH FAIRFAX STREET
ALEXANDRIA, VA 22314

HILLMANN PROJECT NUMBER V3-8454

OCTOBER 20, 2014

Your Property. Our Priority.
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HILLMANN
CONSULTING

October 20, 2014

Ms. Connie Staudinger
Alexandria Redevelopment & Housing Authority
600 North Fairfax Street
Alexandria, VA 22314

RE: Phase I Environmental Site Assessment
Ramsey Homes – 699 North Patrick Street, Alexandria, VA 22314
Hillmann Project Number V3-8454

Dear Ms. Staudinger:

Hillmann Consulting, LLC, is pleased to provide the results of our Phase I Environmental Site Assessment of the above referenced property. This assessment was performed in accordance with the scope and limitations of ASTM Practice E 1527-13, which is the latest version of the E1527 standard published by the ASTM.

This report is for the exclusive use of the entities named on the front cover, its affiliates, designates and assignees, rating agencies, prospective bond holders and bond holders, and no other party shall have any right to rely on any service provided by Hillmann Consulting, LLC, without prior written consent.

We appreciate the opportunity to provide environmental due diligence services. If you have any questions concerning this report, or if we can assist you in any other matter, please contact the Project Manager at 703-914-1135.

Sincerely,
Hillmann Consulting, LLC

James M. Riggs, MS, CHMM
Project Manager
jriggs@hillmanngroup.com

Christopher Baker
Vice President of Operations
cbaker@hillmanngroup.com

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List of Abbreviations/Acronyms

Hillmann may use the following abbreviations and acronyms for common terminology described in our report. Not all abbreviations or acronyms may be applicable to this report:

ACM	– Asbestos Containing Material
AST	– Aboveground Storage Tank
ASTM	– American Standard for Testing Materials
CERCLA	– Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	– Comprehensive Environmental Response Compensation and Liability Information System
CESQG	– Conditionally Exempt Small Quantity Generator
CORRACTS	– Corrective Action Sites
CREC	– Controlled Recognized Environmental Condition
DNPL	– Delisted National Priority List
ENG	– Engineering
ERNS	– Emergency Response Notification System
FOI	– Freedom of Information
FOIA	– Freedom of Information Act
FOIL	– Freedom of Information Letter
HVAC	– Heating Ventilation & Air Conditioning
HREC	– Historic Recognized Environmental Condition
IAQ	– Indoor Air Quality
INST	– Institutional
ISRA	– Industrial Site Recovery Act
LBP	– Lead-Based Paint
LQG	– Large Quantity Generator
LTANK	– Leaking Storage Tank
MSDS	– Material Safety Data Sheet
NFA	– No Further Action
NFRAP	– No Further Remedial Actions Planned
NPDES	– National Pollutant Discharge Elimination System
NPL	– National Priority List
OPRA	– Open Public Records Act
RCRA	– Resource Conservation and Recovery Act
RCRIS	– Resource Conservation and Recovery Information System
REC	– Recognized Environmental Condition
SQG	– Small Quantity Generator
TSDF	– Treatment Storage and/or Disposal Facility
USEPA	– United States Environmental Protection Agency
UST	– Underground Storage Tank

1.0 EXECUTIVE SUMMARY

Hillmann Consulting, LLC (Hillmann), performed a Phase I Environmental Site Assessment (ESA) of the Ramsey Homes located at 699 North Patrick Street in Alexandria, Virginia (the Property). This assessment has been conducted utilizing generally accepted Phase I ESA industry standards in accordance with the ASTM Standard Practice E 1527-13 for Phase I Environmental Site Assessments.

1.1 Project Details Summary Table

A summary of the pertinent details of the project is provided below:

PROJECT SUMMARY TABLE					
Name of Client	Alexandria Housing and Redevelopment Authority				
Client Project No.:	NA				
Client Contact:	Ms. Connie Staudinger				
Description of Project	Phase I Environmental Site Assessment				
Project Name:	Ramsey Homes				
Street Address:	699 North Patrick Street				
City:	Alexandria	**County:**	NA	**State:**	Virginia
Parcel Identification:	Account Number: 11601000 Map 054.04, Block 12, Lot Number 01				
Zoning Designation:	RB				
Approx. Property Area:	30,798 square feet (~0.707 acres)				
Year Built:	Circa 1942				
General Type of Usage:	Residential – Garden-style Apartments				
Property Owner:	Alexandria Housing & Redevelopment Authority				
Occupant(s):	19 Residential Units				
Assessment Personnel:	Mr. James Riggs, CHMM				
Property Contact:	Ms. Connie Staudinger				
Property Escort(s):	Ms. Anne (Elly) Merica				
Inspection Date:	September 3, 2014				
Weather Conditions:	Clear, 80 degrees F				

1.2 Findings Summary Table

The following table summarizes the key findings of this assessment. This table, alone, does not constitute the complete assessment. The report must be reviewed in its entirety.

Assessment Section	No Sig. Concern	Potential Env Concern	REC	Recommended Follow-up	Est. Cost Budget	Rep. Ref.
User Provided Info	X					3.0
Data Gaps	X					2.5
Regulatory Review	X					4.1
Historical Review	X					4.4
Site Use	X					5.2
Adjoining Properties	X					4.1.2 5.2.8
Hazardous Materials	X					5.3
Bulk Petroleum Storage	X					5.3
PCBs	X					5.3
Waste / Discharges	X					5.3
Asbestos Containing Materials (ACM)		ACM may be present based on bldg. age.		Compliance with applicable regulations. O&M Plan Pre-renovation/ demolition testing	Unk	7.1
Lead Based Paint (LBP)		LBP may be present based on bldg. age.		Compliance with applicable regulations. O&M Plan Pre-renovation/ demolition testing	Unk	7.2
Radon	X					7.3
Mold	X					7.4
Wetlands	X					7.5

NA = Not Applicable, TBD = To Be Determined, UNK = Unknown.

1.3 General Description, Current and Historic Property Use

The Property consists of one rectangular-shaped parcel totaling approximately 0.707 acres. The Property is located on the east side of North Patrick Street (US Route 1). The Property is

located in an urban developed area characterized by residential and commercial buildings. The terrain of the Property and surrounding vicinity appears to be sloping gently toward the southeast. No natural surface water bodies were noted at the Property.

The Property is improved with four residential buildings. The four residential buildings are aligned in a north-to-south orientation across the Property. Three of the buildings have four residential units and one of the buildings has three residential units. The following street addresses correspond to the four residential buildings: 912/914 Wythe Street and 625/627 North Patrick Street (north building); 619/621/623 North Patrick Street (north-central building); 609/611/613/615 North Patrick Street (south-central building); and 605/607 North Patrick Street and 913/915 Pendleton Street (south building). Each of the residential building are two levels and slab on grade.

The four existing structures were constructed circa 1942. Prior to the existing structures being built, the Property was vacant land with no improvements.

1.4 Findings, Opinions, and Conclusions

1.4.1 Notable Findings

- No notable findings related to potential environmental concerns in connection with the Property have been identified.

1.4.2 Non-ASTM Scope Considerations

Hillmann has also performed cursory evaluations for ASTM "Non-Scope" items, such as asbestos-containing materials (ACM), lead-based paint, radon, mold and wetlands. Our observations and research did not identify any notable concerns, except for the following:

- Considering the date of construction of the buildings, asbestos containing materials (ACM) may be present. Suspected ACM noted during a cursory visual screening included roofing materials, plaster walls, wallboard walls and ceilings, and vinyl floor tiles and mastic, in good condition. Additional quantities of ACM may exist in enclosed areas or areas not accessed during the assessment. It is emphasized that this limited screening does not constitute a comprehensive asbestos survey of the premises and is meant only to provide a cursory evaluation regarding the potential presence of ACM at the Property.

- Considering the date of construction of the buildings, lead-based paint may be present at the Property. In general, painted surfaces within the space were noted to be in good condition in the accessed areas. Prior lead dust wipe screening sampling performed by others in 1994 identified lead dust in one sample collected from a window sill that exceeded the HUD guideline of 500 ug/ft^2. The prior lead dust wipe screening sampling was limited to five of the 14 residential units at the Property.

1.4.3 Significant Data Gaps

No data gaps that significantly impacted Hillmann's ability to identify RECs in connection with the Property have been identified.

1.4.4 Recognized Environmental Conditions

Hillmann has performed a Phase I Environmental Site Assessment in accordance with the scope and limitations of ASTM Practice E 1527-13 of the Property as described in Section 2 of this report. Any additions to, exceptions to, or deletions from this practice are also described in Section 2 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the Property.

Recognized Environmental Conditions (RECs):

- No evidence of any RECs in connection with the Property was identified.

Controlled Recognized Environmental Conditions (CRECs):

- No evidence of any CRECs in connection with the Property was identified.

Historical Recognized Environmental Conditions (HRECs):

- No evidence of any HRECs in connection with the property was identified.

1.5 Recommendations

1.5.1 Recognized Environmental Conditions

Based on information collected from the site investigation, record reviews, interviews and site reconnaissance, no further actions are recommended at this time.

1.5.2 Non-ASTM Considerations

The following should be considered with regard to further investigation or management of Non-ASTM considerations addressed by this report:

- Suspect ACM, and suspect lead based paint at the Property should be managed in compliance with all applicable rules and regulations, and an Operations and Maintenance (O&M) Plan.

- Prior to any renovations, alterations or building demolition at the Property, sampling of suspect ACM should be performed. If ACM is identified, the owner at the time of renovation, alteration or demolition is required to comply with regulations regarding these materials, including appropriate notifications.

2.0 INTRODUCTION

2.1 Purpose and Scope

This assessment was conducted utilizing generally accepted Phase I ESA industry standards in accordance with the ASTM Standard Practice E 1527-13. The ASTM describes these methodologies as representing good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner or bona fide prospective purchaser limitations on CERCLA liability (hereinafter, the "landowner liability protections," or "LLPs"): that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses the property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35) (B). The primary goal of the processes established by ASTM E1527-13 is to identify *recognized environmental conditions* in connection with the Property.

The term *recognized environmental condition (REC)* is defined by the ASTM as the presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The ASTM has also defined the terms *historical recognized environmental conditions* and *controlled recognized environmental conditions* as two additional types of RECs. The term *historical recognized environmental condition (HREC)* is defined as a past release of any hazardous substances or petroleum products that has occurred in connection with the Property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the Property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls or engineering controls).

The term *controlled recognized environmental condition (CREC)* is defined as a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

Conditions determined to be *"de minimis conditions"* are not considered to be RECs nor CRECs. *De minimis condition* is defined by the ASTM as a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

The chief components of this assessment are described as follows:

- A non-invasive visual reconnaissance of the Property and adjoining properties in accordance with ASTM guidelines for evidence of RECs.

- Interviews of past and present owners and occupants and state and local government officials, seeking information related to the potential presence of RECs at the Property.

- A review of standard physical record sources for available topographic, geologic and groundwater data.

- Review of standard historic record sources, such as fire insurance maps, city directories, aerial photographs, prior reports and interviews, etc., to determine prior uses of the Property from the present, back to the Property's first developed use, or back to 1940, whichever is earlier.

- Review of standard environmental record sources including federal and state environmental databases, and additional environmental record sources, to identify potential regulatory concerns with the Property, adjoining properties and properties located within the surrounding area.

These methodologies are described as representing good commercial and customary practice for conducting an Environmental Site Assessment of a property for the purpose of identifying recognized environmental conditions.

2.1.1 Non-ASTM Scope Considerations

In accordance with our contract agreement, Hillmann may have addressed the following potential environmental concerns that are outside of the requirements of the ASTM E1527-13 standard:

Asbestos-Containing Materials (ACM): A cursory visual inspection for the presence of suspect ACM within the accessed areas of buildings on the Property.

Lead-Based Paint (LBP): A cursory visual inspection of the condition of painted surfaces in the accessed areas of buildings on the Property.

USEPA Designated Radon Potential: Review of general non-site specific data published by the USEPA regarding the potential for elevated indoor levels of radon gas to occur in the area of the Property.

Mold: A cursory visual inspection within the accessed areas of buildings on the Property for evidence of systemic microbial problems, including visible mold growth, water damaged building materials or musty odors.

Wetlands: A cursory review of data published by the US Fish and Wildlife Service regarding the presence or absence of mapped wetlands on the Property. The US Fish and Wildlife Service wetlands data is typically provided to Hillmann by Environmental Data Resources, Inc. (EDR).

2.2 Property Location/Legal Description

The Property is located on the east side of North Patrick Street (US Route 1), south of Wythe Street and north of Pendleton Street. The following street addresses correspond to the four residential buildings at the Property: 912/914 Wythe Street and 625/627 North Patrick Street (north building); 619/621/623 North Patrick Street (north-central building); 609/611/613/615 North Patrick Street (south-central building); and 605/607 North Patrick Street and 913/915 Pendleton Street (south building). According to online records of the City of Alexandria Office of Real Estate Assessments, the street address of 699 North Patrick Street corresponds to the overall Property. The latitude and longitude are approximately North 38.8117 degrees, West 77.0488 degrees. Online records of the City of Alexandria Office of Real Estate Assessments identify the Property as Map 054.04 – Block 12 – Lot Number 01.

2.3 Significant Assumptions

The following significant assumptions are made:

- Hillmann has assumed that the information obtained from EDR during the course of this assessment is an accurate and complete representative summary of the information contained in the referenced regulatory agency records, except when such information is obviously contradicted by other data.

- Hillmann has assumed that the information used to prepare this assessment that was obtained from ostensibly knowledgeable individuals, regulatory agency representatives or other secondary sources was an accurate and complete representative summary of the information possessed by those individuals, representatives or sources.

- Hillmann has assumed that the site operations at the time of the site visit reflect typical site conditions relative to potential environmental conditions and that no concealment of environmental conditions or releases by site owners or occupants has occurred. Likewise, Hillmann has also assumed that no areas of the Property with potential environmental concerns or RECs were concealed or otherwise not made known to us, intentionally or unknowingly, by the Property owners/occupants and/or site escort at the time of the site visit.

- For the purpose of estimating the approximate direction of groundwater flow in the absence of site specific groundwater data, unless indicated otherwise, Hillmann has assumed that the gradient of groundwater flow follows the surface topography of the Property and immediate surrounding area.

2.4 Limitations and Exceptions

2.4.1 Limiting Conditions

Hillmann was unaware of any significant limiting conditions at the time of the assessment.

2.4.2 Other Exceptions or Deletions:

No other exceptions or deletions from the ASTM Standard E 1527-13 are reported.

2.5 Data Gaps

A *data gap* is defined by the ASTM as a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap and the ability to determine the presence or absence of recognized environmental conditions.

Data Gap:	Significant (Yes/No)?	Discussion
Obtaining title record and environmental lien search was outside of the scope of this assessment.	No	In Hillmann's professional opinion, it is unlikely that additional investigation would result in any significant changes to the findings of this assessment.

2.6 Special Terms and Conditions

Hillmann has prepared this Phase I Environmental Site Assessment using reasonable efforts in each phase of its work to identify recognized environmental conditions associated with hazardous substances, wastes and petroleum products at the Property. The methodology of this Phase I Environmental Site Assessment was consistent with the ASTM Standard Practice for E 1527-13. Findings within this report are based on information collected from observations made on the day of the site visit and from reasonably ascertainable information obtained from governing public agencies and private sources.

This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation or other construction purposes. Hillmann makes no representation or warranty that the past or current operations at the Property are, or have been, in compliance with all applicable federal, state and local laws, regulations and codes.

Findings, conclusions and recommendations presented in this report are based on our visual observations of the Property, the research findings reasonably obtained, information provided by the Client, and/or a review of readily available and supplied drawings and documents. Hillmann relies completely on the information, whether written, graphic or verbal, provided by the subject Property contact(s) or as shown on any documents reviewed or received from the subject Property contact, owner or agent, or municipal source, and assumes that information to be true and correct. Although there may have been some degree of overlap in the information provided by these various sources, Hillmann did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this assessment.

Regardless of the findings stated in this report, Hillmann is not responsible for consequences or conditions arising from facts that were concealed, withheld or not fully disclosed at the time the assessment was conducted.

This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

The regulatory database report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The report focuses on the Property and neighboring properties that could impact the Property. Neighboring properties listed in governmental environmental records are identified within specific search distances. The search distance varies depending upon the particular government record being checked. The regulatory research is designed to meet the requirements of ASTM Standard E 1527-13. The information provided in the regulatory database report is assumed to be correct and complete.

Subsurface conditions may differ from the conditions implied by the surface observations and can only be reliably evaluated through intrusive techniques.

Reasonable efforts have been made during this assessment to identify aboveground and underground storage tanks and ancillary equipment. "Reasonable efforts" are limited to information gained from visual observation of largely unobstructed areas, recorded database information held in public record and available information gathered from interviews. Such methods may not identify subsurface equipment that may have been hidden from view due to parked automobiles and other vehicles, snow cover, vegetative growth, pavement, construction or debris pile storage or incorrect information from sources.

Unless otherwise specified in Section 2.1 of this report, an ASTM Vapor Encroachment Screening of the Property utilizing the information collected during the course of this assessment is excluded from the scope of service for this assessment.

Hillmann is not a professional title insurance firm and makes no guarantee, explicit or implied, that the records which were reviewed represent a comprehensive or precise delineation of past Property ownership or tenancy for legal purposes.

3.0 USER PROVIDED INFORMATION

3.1 Prior Environmental Reports/Documentation

Lead-Based Paint Risk Assessment; prepared by Tracor Technology Resources, Inc. (Tracor), dated May 13, 1994.

> Tracor performed limited lead dust wipe sampling and total lead soil screening sampling at the Property in April 1994. Dust wipe sampling was performed in five of the 14 residential units: 913 Pendleton Street, and 611, 615, 623 and 625 North Patrick Street. The total number of samples and locations for both lead dust wipes and soil samples were not included in the partial report document provided to Hillmann. The lead dust wipe sampling identified lead dust in one sample collected from a window sill in residential unit 925 North Patrick Street that exceeded the HUD guideline of 500 ug/ft^2. No additional information was included in the information provided to Hillmann with regards to any additional detectable levels of lead dust or detectable total lead in soil samples collected at the Property.

3.2 Title Records/Environmental Liens/Activity and Use Limitations

Review of title records is not included in the scope of work for this assessment project. No information regarding environmental liens or activity and use limitations was provided to Hillmann by the Client.

3.3 Specialized Knowledge or Experience

No indication of any specialized knowledge or experience regarding the Property was reported to Hillmann by the Client.

3.4 Commonly Known or Reasonably Ascertainable Information

No commonly known or specialized knowledge of the Property was reported to Hillmann by the Client.

3.5 Property Value Reduction due to Environmental Conditions

No information was provided by the Client to Hillmann regarding a reduction of the Property value due to environmental problems or conditions.

3.6 Reason for Performing Phase I ESA

It is Hillmann's understanding that the Phase I ESA was being performed in consideration of a pending real estate transaction involving the Property.

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

An EDR Radius Map report was obtained from Environmental Data Resources of Shelton, CT. The EDR Radius Map Report provided a search of standard environmental record sources in general accordance with the requirements of the ASTM E1527-13. Hillmann has reviewed the EDR Radius Map report and a summary of findings is presented in the following tables and report sections. Hillmann also reviewed the list of unmapped sites (referred to by EDR as "Orphan List" sites). Unmapped sites identified as falling within an applicable specific search distance or warranting discussion in the report, if any, have been included in the information presented below. Detailed descriptions of the meaning and significance of the regulatory databases can be found in the EDR Radius Map Report in Appendix E.

Regulatory Database	Search Distance	Property Listed?	Adj. Properties Listed?	Total Listings Within Search Distance
Fed. NPL/Proposed NPL	1-mile	No	No	0
Fed. Delisted NPL	½-mile	No	No	0
Fed. CERCLIS	½-mile	No	No	0
Fed. CERC-NFRAP	½-mile	No	No	1
Fed. RCRA CORRACTS	1-mile	No	No	0
Fed. RCRA TSD	½-mile	No	No	0
Fed. RCRA LQG	Site & Adj.	No	No	
Fed. RCRA SQG	Site & Adj.	No	No	
Fed. RCRA CESQG	Site & Adj.	No	No	
Fed. ENG Control List	Site	No		
Fed. INST Control List	Site	No		
Fed. ERNS	Site	No		
State/Tribal Hazardous Waste Site	1-mile	No	No	0
State/Tribal Landfill/Solid Waste	½-mile	No	No	0
State/Tribal Leaking Storage Tanks / VA LTANKS	½-mile	No	No	27 / 38
State/Tribal Registered Storage Tanks	Site & Adj.	No	No	
State/Tribal Eng. Control List	Site	No		
State/Tribal Inst. Control List	Site	No		
State/Tribal Voluntary Cleanup Sites	½-mile	No	No	4
State/Tribal Brownfields	½-mile	No	No	0
Supplemental Databases	Site & Adj.	No	No	

4.1.1 Property Listings

The Property was not identified in the database report.

4.1.2 Adjoining Property Listings

No adjoining property listings were identified in the database report.

4.1.3 ASTM Search Distance Findings

The following is a summary of the findings of the regulatory database review with regard to sites identified as located within the ASTM specified search distance surrounding the Property. In order to keep this report informative and yet concise, Hillmann has provided a brief discussion of the listed site(s) for each database category that appears most likely to impact the Property based on distance, topography and/or case status. A copy of the full EDR Radius Map Report, including available details of all listed sites, is included in Appendix E.

Note that listings for the following databases, if identified, would be discussed above in Sections 4.1.1 and 4.1.2: Registered Storage Tanks, Federal RCRA Generators, Federal and State INST and ENG Controls, ERNS.

Federal NPL: No NPL listings were identified within a one-mile radius of the Property.

Federal Delisted NPL: No DNPL listings were identified within a ½-mile radius of the Property.

Federal CERCLIS: No CERCLIS listings were identified within a ½-mile radius of the Property.

Federal CERCLIS-NFRAP: One CERCLIS-NFRAP listing was identified within a ½-mile radius of the Property. The listing is identified as QM Market Center, 1200 North Henry Street, located approximately 2,000 feet to the north of the Property. According to the database, Discovery was completed February 2, 2011 and a Preliminary Assessment and Archive Site was completed February 25, 2011. As of August 2011 the site did not qualify for the NPL "based on existing information". Considering the distance relative to the subject Property and current regulatory status, this site is not considered to be a REC in connection with the Property.

Federal RCRA-CORRACTS: No CORRACTS listings were identified within a one-mile radius of the Property.

Federal RCRA-TSD: No TSD listings were identified within a ½-mile radius of the Property.

State/Tribal Hazardous Waste Sites: No SHWS listings were identified within a one-mile radius of the Property.

State/Tribal Landfill/Solid Waste Disposal Sites: No SWF/LF listings were identified within a ½-mile radius of the Property.

State/Tribal leaking Storage Tanks: Twenty-seven (27) VA LUST listings and thirty-eight (38) VA LTANKS listings were identified within a ½-mile radius of the Property. The closest site at a higher elevation is listed as the Boyles Property, located approximately 900 feet to the west-southwest at 1201 Oronoco Street. The database listing indicates one DEQ Pollution Complaint case (96-3085) is associated with the site. The case was opened in 1995 and the current regulatory status of the case is "Closed". The case was reportedly closed in 1996.

Considering the distance, and "closed" case status, this site is not considered to be REC in connection with the Property.

State/Tribal Voluntary Cleanup Sites: Four (4) VCP listings were identified within a ½-mile radius of the Property. The closest listing in proximity to the Property is located approximately 750 feet to the northwest (The Madison – 800-840 North Henry Street) and at a lower elevation relative to the Property. No additional information is provided in the database report. Based on the distance from the Property and/or regulatory case statuses, the VCP sites are not considered to be a REC in connection with the Property.

State/Tribal Brownfields: No BROWNFIELDS listings were identified within a ½-mile radius of the Property.

Review of the sites identified within the ASTM search parameters did not identify any nearby or surrounding area sites that are considered to be a REC in connection with the Property, unless as discussed otherwise previously in this section.

4.2 Additional Environmental Record Sources

4.2.1 Supplemental Database Listings

Hillmann reviewed the EDR Radius Map report for listings on supplemental databases that were searched in addition to the Standard Environmental Record Sources. Any property or adjoining property listings on such databases, if identified, would be discussed in Section 4.1.1 and 4.1.2. None of the other supplemental database listings identified by the EDR Radius Map report are considered to be a REC in connection with the Property.

4.2.2 Local Agency & Internet Research

Hillmann performed a search of available local and municipal agencies for pertinent information pertaining to the Property, particularly with regard to potential environmental concerns such as petroleum storage tanks, storage and usage of hazardous substances and petroleum products, and/or known or suspected environmental contamination. Hillmann also conducted a cursory internet search of the Property addresses for information indicative of a REC. The following table summarizes the findings of the research:

Source:	Inquiry Made?	Type:	Outcome:
Virginia Department of Environmental Quality	Yes	FOIA Request	Response from VDEQ indicates no files/records exist for the Property.
USEPA Envirofacts search http://www.epa.gov/enviro/index.html	Yes	Internet	The Property address was searched. No results for the Property were found.
www.google.com	Yes	Internet	The Property address was searched. No information indicative of a REC was identified.
Other:	NA		

4.3 Physical Setting Sources

4.3.1 USGS 7.5 Minute Topographic Map

The USGS 7.5 minute series topographic map covering the Property (Alexandria – VA, DC, MD Quadrangle, 1994) was reviewed. The map indicates an approximate elevation at the Property of 50 feet above mean sea level. The topography indicated by the map appeared to be gently sloping downward toward the east. The nearest surface water body is the Potomac River, located approximately 3,700 feet to the east.

4.3.2 Soils

Based on USDA Soil Conversation Service (SCS) data summarized by the EDR Geocheck-Physical Setting Source Addendum, the soil type at the Property is classified as "Beltsville". The Beltsville soil type designation consists primarily of a sandy loam texture with moderate infiltration rates.

4.3.3 Geology

Based on geologic data summarized by the EDR Geocheck - Physical Setting Source Addendum, the geologic formation in the vicinity of the Property is described as a stratified sequence of the Mesozoic Era, Cretaceous System, and Lower Cretaceous Series.

4.3.4 Hydrology

Based on the drainage/topography of the Property and surrounding area, the inferred direction of groundwater flow appears to be towards the east. A detailed subsurface investigation of the Property would be needed to accurately determine site specific groundwater data such as depth, gradient and flow direction.

4.4 Historical Use – Property and Adjoining Properties

Hillmann has conducted research in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the Property. Standard historical sources have been sought in an attempt to document the past uses of the Property as far back as it can be shown that the Property contained structures; or from the time the Property was first used for residential, agricultural, commercial, industrial or governmental purposes.

4.4.1 Fire Insurance Maps

Hillmann obtained and reviewed a "Certified Sanborn Map Report" from EDR containing historic topographic maps of the Property and surrounding properties. The following interpretation of land usage was made by review of the maps:

YEAR(S)	SUMMARY	
1902, 1907,	**Property:**	The Property is not depicted on the map.

1912	**Adjacent Properties:**	The adjoining properties to the south, beyond Pendleton Street are depicted as row-style dwellings. The remainder of the adjoining properties are not depicted on the map.
1921, 1941	**Property:**	No structural improvements are depicted on the Property.
	Adjacent Properties:	Row-style dwellings are depicted to the west, south and east. A school is depicted to the north beyond Wythe Street.
1959, 1989, 1993, 1996	**Property:**	Four building structures are depicted on the maps, corresponding to the existing site improvements. No environmentally significant details noted on maps.
	Adjacent Properties:	Multi-family buildings are depicted to the west. Row-style homes are depicted to the south, corresponding to existing conditions. A garage structure is depicted to the east corresponding to the existing structure.

4.4.2 City Directories

City Directories provide listings, arranged by street address, of businesses and residences for the year in which the directory was published. A City Directory Abstract report was obtained from EDR. The City Directory Abstract report provided a search of City Directories in approximately five year intervals from 1921 to 2013. Copies of the City Directory Abstract report are included in Appendix D. Based on the review of the report, Property addresses were listed in the 1952, 1958, 1962, 1971, 1974, 1979 and 2003 city directories as various individual's names corresponding to current and former residential occupants.

4.4.3 Historical Topographic Map Review

Hillmann obtained and reviewed an "EDR Historical Topographic Map Report" from EDR containing historic aerial photography of the Property and adjoining properties. The following interpretation of land usage was made by review of the maps:

YEAR(S)	SUMMARY	
1885, 1894	**Property:**	The scale of the map is too small to discern any details.
	Adjacent Properties:	
1947, 1951, 1956, 1965, 1971, 1972, 1979, 1983, 1994	**Property:**	Red shading is depicted on the Property and surrounding vicinity indicating developed/urbanized land.
	Adjacent Properties:	

4.4.4 Aerial Photograph Review

Due to the availability of alternate historic sources, as well as the likelihood that this source would not provide any significant data, historical aerial photographs were not researched for this assessment.

4.4.5 Petroleum/Natural Gas Well Review

Hillmann reviewed historical record sources for evidence of historic petroleum and/or natural gas wells at the Property. No record of any historical petroleum/natural gas wells at the Property was identified.

4.4.6 Historical Records Data Failure

Historic land use data prior to 1885 was not obtained during assessment. The earliest usage of the Property was determined to be multi-family residential (sometime from 1941 - 1959). It is Hillmann's opinion that a data gap regarding historical records was not encountered during this assessment.

4.4.7 Summary of Historic Use Research

The existing multi-family apartment buildings were constructed sometime between 1941 and 1959 (circa 1942). Prior to 1941, the Property consisted of vacant, unimproved land. Adjoining properties appear to have been historically occupied by residential buildings. The initial development of the surrounding area included the majority of the existing buildings in the areas.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The site reconnaissance consisted of visual and/or physical observations of the Property and improvements, adjoining properties as viewed from the Property boundaries and the surrounding area based on visual observations from adjacent public thoroughfares. Building exteriors were observed at ground level, unless otherwise indicated. Where applicable, Hillmann accessed and observed representative areas of building interiors to the extent they were made safely accessible with the cooperation of the site escort.

The site reconnaissance was conducted by Mr. James Riggs on September 3, 2014. Weather conditions at the time of the assessment included a temperature of approximately 80 degrees F and cloudy skies. Hillmann was escorted by Ms. Elly Merica, a representative of ARHA.

5.1.1 Significant Inaccessible Areas

Hillmann is not aware of any areas of the Property that were inaccessible at the time of the inspection.

5.2 General Site Setting

5.2.1 Site and Vicinity Characteristics

The Property consists of one rectangular shaped parcel totaling approximately 0.7 acres. The Property is located on the east side of North Patrick Street, south of Wythe Street. The Property is located in an urban developed area characterized primarily by residential buildings.

5.2.2 Topographic Characteristics

The terrain of the Property appears to be relatively flat. No natural surface water bodies were noted at the Property.

5.2.3 General Description of Structures

The Property is improved with four residential buildings. The four residential buildings are aligned in a north-to-south orientation across the Property. Three of the buildings have four residential units and one of the buildings has three residential units. The following street addresses correspond to the four residential buildings: 912/914 Wythe Street and 625/627 North Patrick Street (north building); 619/621/623 North Patrick Street (north-central building); 609/611/613/615 North Patrick Street (south-central building); and 605/607 North Patrick Street and 913/915 Pendleton Street (south building). Each of the residential building are two levels and slab on grade construction.

5.2.4 Sources of Heating and Cooling

The Property buildings are heated via natural gas fired air handling units located in each of the apartment units. Cooling is provided to the apartment units by electric window mounted air conditioning units at the discretion of the individual residential tenants.

5.2.5 Potable Water Source/Sewage Disposal System

Potable water and sewer services are provided via municipal utility services (City of Alexandria).

5.2.6 Current Use(s) of the Property

The Property buildings are occupied by a total of 15 residential apartment units.

5.2.7 Past Use(s) of the Property

Prior to 1941, the property was undeveloped. Otherwise, the past Property usage was reportedly the same as the current Property usage since the construction of the existing Property building sometime between 1941 and 1959 (circa 1942).

No obvious indication of past Property usage likely to have involved the use, treatment, storage, disposal or generation of hazardous substances or petroleum products was observed at the time of the site visit. Please refer to Section 4.4 for findings of historical site use research.

5.2.8 Current Use(s) of the Adjoining Properties

The following describes adjoining properties:

Dir	Street Address	Description
N	Wythe Street	Community recreation center
E	911 Pendleton Street	Garage structure
S	Pendleton Street	Row-style residential
W	North Patrick Street	Townhome and row-style residential

No visual observations indicative of a potential environmental concern were noted on the adjoining properties.

5.2.9 Past Use(s) of the Adjoining Properties

No indication of past uses of the adjoining properties was noted at the time of the site visit. Please refer to Section 4.4 for the findings of historical site use research.

5.2.10 Current/Past Uses of Surrounding Area

The Property is located in an urban developed area characterized primarily by residential buildings. No indications of past Property uses that differ substantially from current conditions were observed at the time of the site visit.

5.3 Interior & Exterior Observations

5.3.1 Storage/Usage of Hazardous Substances and Petroleum Products

No significant quantity of hazardous substance/petroleum product storage or handling was noted at the Property at the time of the assessment.

No evidence of any spills or releases of hazardous substances or petroleum products was noted at the Property during the site reconnaissance.

5.3.2 Drums

No drums were noted on the Property at the time of the site visit.

5.3.3 Other Hazardous Substances/Petroleum Products

No containers of hazardous substances or petroleum products were noted on the Property at the time of the site visit.

5.3.4 Unidentified Substance Containers

No unidentified containers suspected of containing hazardous substances or petroleum products were noted on the Property at the time of the site visit.

5.3.5 Storage Tanks

No evidence of any past or present underground storage tanks (USTs) or aboveground storage tanks (ASTs) was identified on the subject Property at the time of the site reconnaissance.

Considering the age of the building, heating oil may have been previously used as a primary heat source at the Property although no indications of former storage tanks were identified during the course of the assessment. If prior storage tanks are discovered during the course of site redevelopment, and environmental professional should notified and provide appropriate direction.

5.3.6 Polychlorinated Biphenyls (PCBs)

Pole-mounted electric transformers were observed outdoors in the vicinity of the Property. The transformers are owned and maintained by the local electric utility. No indications of leakage or staining were observed on, or in the vicinity of the pole-mounted transformers.

No other suspected PCB containing electrical or hydraulic equipment was identified.

5.3.7 Odors

No strong, unusual or pungent odors were noted on the Property.

5.3.8 Pools of Liquid

No pools of liquid were noted at the Property.

5.3.9 Interior Stains or Corrosion

No interior stains or corrosion were noted at the Property.

5.3.10 Interior Drains/Sumps

No floor drains were observed at the Property.

5.3.11 Exterior Pits/Ponds/Lagoons

No evidence of exterior pits, ponds or lagoons was identified on the Property in connection with waste treatment or disposal.

5.3.12 Stained Soil, Pavement/Stressed Vegetation

No evidence of stained soils or stressed vegetation was identified on the Property.

5.3.13 On-Site Solid Waste Dumping/Fill Material

No evidence of recently deposited or non-native fill materials was noted at the Property. No indications of on-site solid waste dumping were observed.

5.3.14 Wastewater

Sanitary sewage and storm water runoff generated on-site are discharged into the municipal sewer system (City of Alexandria). No other waste discharges were noted at the Property.

5.3.15 Septic Systems

No indication of septic systems was noted on the Property.

5.3.16 Wells

No indication of wells was noted on the Property.

6.0 INTERVIEWS

6.1 Interviews with Past and Present Owners and Occupants

Type	Name; Affiliation/Title	Summary
Key Site Manager	Ms. Elly Merica / ARHA Representative	Ms. Merica interviewed regarding the uses and conditions of the Property relative this assessment and compliance with ASTM E1527-13. Pertinent information, where obtained, is referenced in the appropriate sections of the report.
Past Owners, Occupants, Operators	Not applicable	Past owners/occupants of the Property were not available for interview at the time of the assessment.
Owners/Occupants of Adjacent or Nearby Properties	Not applicable	The Property was not an abandoned property with evidence of unauthorized uses or uncontrolled access; therefore, interviews with adjacent or nearby property owners or occupants were not conducted.

6.2 Interviews with State and/or Local Government Officials

Written and on-line requests for environmental records of the Property from State and Local governmental agencies are detailed in Section 4.2.2.

7.0 NON-ASTM SCOPE CONCERNS

In accordance with our contract agreement, Hillmann has conducted cursory evaluations of the following "Non-ASTM Scope Considerations" that are outside of the requirements of the ASTM E1527-13 standard:

7.1 Asbestos-Containing Material (ACM)

Considering the dates of construction of the buildings, asbestos containing materials (ACM) may be present in the building. Suspected ACM noted during a cursory visual screening included roofing materials, plaster walls, wallboard walls and ceilings, and vinyl floor tiles and mastic, in good condition. Additional quantities of ACM may exist in enclosed areas or areas not accessed during the assessment. It is emphasized that this limited screening does not constitute a comprehensive asbestos survey of the premises and is meant only to provide a cursory evaluation regarding the potential presence of ACM at the Property. No prior asbestos sampling data was provided to Hillmann.

Suspect ACM, and suspect lead based paint at the Property should be managed in compliance with all applicable rules and regulations, and an Operations and Maintenance (O&M) Plan.

Prior to any renovations, alterations or building demolition at the Property, sampling of suspect ACM should be performed. If ACM is identified, the owner at the time of renovation, alteration or demolition is required to comply with regulations regarding these materials, including appropriate notifications.

7.2 Lead-Based Paint

Considering the date of construction of the buildings, lead-based paint may be present at the Property. In general, painted surfaces within the space were noted to be in good condition in the accessed areas. Prior lead dust wipe screening sampling performed by others in 1994 identified lead dust in one sample collected from a window sill that exceeded the HUD guideline of 500 ug/ft^2. The prior lead dust wipe screening sampling was limited to five of the 14 residential units at the Property.

7.3 Radon

According to USEPA Region 3 Statistical Summary Readings for ZIP Code 22314, approximately 93% of 549 sites tested for radon in the 22314 ZIP Code were below the guidance level of 4.0 pCi/L.

7.4 Mold

During the assessment, Hillmann conducted a cursory inspection of the accessed areas of the building for evidence of excessive or amplified mold growth, or for conditions favorable for mold growth. No obvious evidence of excessive or amplified mold growth, or conditions favorable for mold growth, was observed on the Property during the site assessment.

7.5 Wetlands

Based on a review of the EDR Radius Map Report with GeoCheck, no NWI mapped wetlands were indicated on or immediately adjacent to the Property.

It is emphasized that the absence of NWI mapped wetland areas indicated by the EDR report does not necessarily rule out the potential presence of regulated wetland areas on or immediately adjoining the Property. A wetland delineation should be sought from a qualified firm if a more comprehensive determination regarding the presence or absence of wetlands on or adjacent to the Property is warranted.

8.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a *property* of the nature, history and setting of the subject *property*. Hillmann has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

James M. Riggs, MS, CHMM
Environmental Professional

9.0 REFERENCES

EDR City Directory Abstract Report, Environmental Data Resources, 2014

EDR Radius Map Report with GeoCheck, Environmental Data Resources, 2014

EDR Sanborn Map Report, Environmental Data Resources, 2014

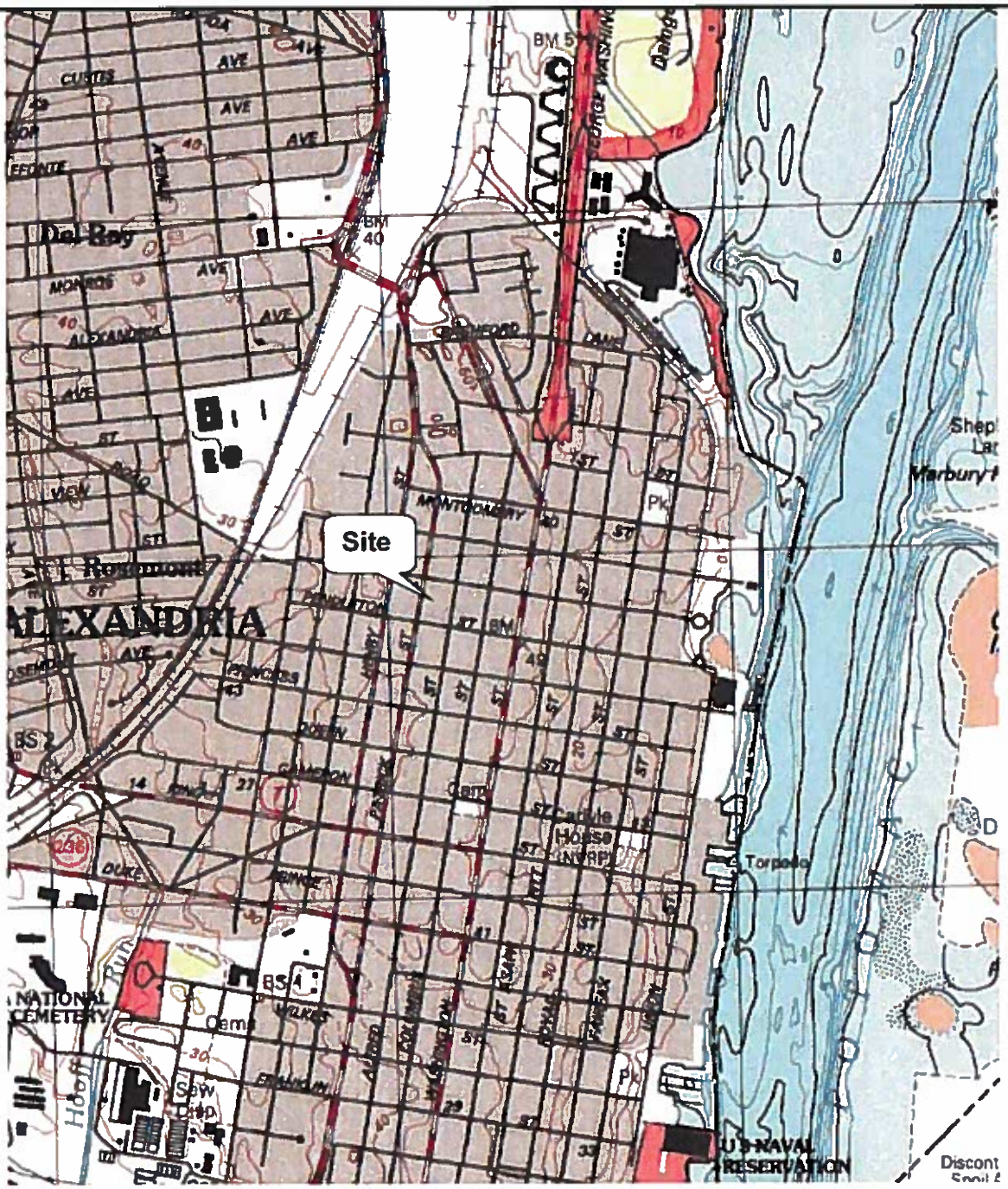
EDR Topographic Map Report, Environmental Data Resources, 2014

10.0 APPENDICES

Appendix A	Site Diagram / Vicinity Map
Appendix B	Site Photographs
Appendix C	Questionnaires / User Provided Information
Appendix D	Historical Records Documentation
Appendix E	Regulatory Records Documentation
Appendix F	Other Documents
Appendix G	Project Personnel Qualifications

APPENDIX A

SITE DIAGRAM / VICINITY MAP



Source: USGS 7.5 Min. Topographic Map, Alexandria, VA-DC-MD, 1994

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Site Vicinity Map

Ramsey Homes
699 N. Patrick Street
Alexandria, Virginia

N

Source: Google Earth

HILLMANN CONSULTING

Site Diagram

Ramsey Homes
699 N. Patrick Street
Alexandria, Virginia

N

APPENDIX B

SITE PHOTOGRAPHS

PHOTO LOG
Ramsey Homes
699 N. Patrick Street
Alexandria, Virginia

Subject Property frontage along Pendleton Street

Subject Property frontage along Wythe Street

West side of the Property building

East side of Property building

Natural gas connection

Typical living room

PHOTO LOG
Ramsey Homes
699 N. Patrick Street
Alexandria, Virginia

Typical air handling unit

Typical floor tile

Former natural gas connection

Adjoining property to the east

Adjoining property to the north

Adjoining properties to the west

APPENDIX C

QUESTIONNAIRES / USER PROVIDED INFORMATION

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Phase I ESA - Environmental Questionnaire

Instructions: The following questionnaire should be completed by a person designated by the Property Owner/Manager that is most knowledgeable about its usage, condition and history. Please complete and return to Hillmann via email (jriggs@hillmanngroup.com), fax at (703) 914-1175, or in person during the site inspection.

General:

Property Name: Ramsey Homes Alexandria, VA

Street Address: 627 North Patrick Street
City, ST Zip: 22314

Completed by: Chaba Josa *(Name)*

Company: ARHA

Signature: _____

Date: 9/18/2014

Number of years at or familiar with the Property: 13

Site Description:

Block & Lot #(s): 054.04-12

Property Size: 30,798 SF

Number of building(s): 4

Building Size(s) _____

Year(s) Built: 1944

# of units: (if appl.) 15

Type of Property: Residential, attached 2 story homes

Utilities and Services: (please check "Yes", "No" or "NA-Not Applicable") and indicate provider if "Yes".

Utility	Yes	No	NA	Name of Provider	Service	Yes	No	NA	Name of Provider
Water	x			City Alexandria	Fuel Oil		x		
Sewer	x			City Alexandria	HVAC Maint.	x			ARHA
Power	x			Dominion Power	Elev Maint.				ARHA
Nat Gas	x			WA Gas company	Septic Maint.		x		
Telephone			x	various	Pool Maint.		x		

Instructions: Please answer each question. Check "D/K" if you don't know, or otherwise lack sufficient knowledge of the Property to answer the question.

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	PREVIOUS INVESTIGATIONS	
1.	Have any previous environmental investigations (e.g.- Phase I Environmental Site Assessment, soil/groundwater testing, radon testing, asbestos survey, tank closure/removal reports, etc.) been performed at the Property?	☐ Yes ■ No ☐ D/K
2.	If yes, what concerns were indicated or recommendations made? *(please provide a copy of all previous environmental reports)*	
	PROPERTY USAGE	
3.	To the best of your knowledge, is the Property or any adjoining property currently occupied or formerly occupied for industrial purposes? If yes, please elaborate:	Property: ☐ Yes ■ No ☐ D/K Adj. Property: ☐ Yes ■ No ☐ D/K
4.	Is the property or any adjoining property currently used, or have they ever been used, as a gasoline filling station, dry cleaning facility, automotive service/repair shop, auto body repair shop, commercial printing facility, photo development laboratory shop, junkyard, landfill, or as a waste treatment, storage disposal, recycling or processing facility? If yes, please elaborate:	Property: ☐ Yes ■ No ☐ D/K Adj. Property: ☐ Yes ■ No ☐ D/K
5.	Have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries,, or any other waste materials been dumped above grade, buried and/or burned on the property?	☐ Yes ■ No
	BULK STORAGE TANKS	
6.	Are there currently, or have there been previously, any registered or unregistered above ground or underground storage tanks located at the Property? *If YES, please provide number, size, age of tanks, permits, closure reports, regulatory agency correspondence, and related information.*	Current Tanks: ☐ Yes ■ No ☐ D/K Previous Tanks: ☐ Yes ■ No ☐ D/K
7.	Are there currently, or have there been previously, any vent pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Current: ☐ Yes ■ No ☐ D/K Previous: ☐ Yes ■ No ☐ D/K
8.	Are there currently, or have there been previously, any leakage of hazardous substances or petroleum products from above ground or underground storage tank systems at the Property?	Current: ☐ Yes ■ ☐ D/K Previous: ☐ Yes ■ No ☐ D/K

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	SPILLS, RELEASES, WASTES	
9.	Are there currently, or have there been previously, any waste discharges on or adjacent to the property, other than storm water or into a municipal sanitary sewer system? If yes, please elaborate:	Current: ☐ Yes ■ No ☐ D/K Previous: ☐ Yes ■ No ☐ D/K
10.	Are there currently, or have there been previous, any septic systems, dry wells or leach fields on the property? If yes, please elaborate:	Current: ☐ Yes ■ No ☐ D/K Previous: ☐ Yes ■ No ☐ D/K
11.	Are there currently, or have there been previously, any flooring, drains or walls located within the facility that are, or have been, stained by substances (or, in the case of drains, used for) other than water or are emanating foul odors? If yes, please elaborate:	Current: ☐ Yes ■ No ☐ D/K Previous: ☐ Yes ■ No ☐ D/K
12.	Are there currently, or have there been previously, any spills or releases of hazardous substances or petroleum products within the building(s) or on the exterior of the Property?	Current: ☐ Yes ■ No ☐ D/K Previous: ☐ Yes ■ No ☐ D/K
13.	Has any non-native and/or contaminated fill material been deposited on the Property?	☐ Yes ■ No ☐ D/K
14.	Have any current or former property occupants generated hazardous wastes or other wastes (such as waste oil, or medical wastes) that required non-conventional storage, handling and/or disposal methods? *If YES, please indicate type of waste and the name of the waste handling contractor:* _____	☐ Yes ■ No ☐ D/K
	TRANSFORMERS/HYDRAULIC EQUIPMENT	
15.	Are any power transformers, capacitors or hydraulic equipment present at the Property? If yes, please elaborate:	☐ Yes ■ No ☐ D/K
16.	If power transformers are present, who owns them? _____	☐ Yes ■ No ☐ D/K
17.	If hydraulic equipment is present, indicate age of equipment and name/telephone # of service contactor:	☐ Yes ■ No ☐ D/K

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	REGULATORY DISCLOSURE	
18.	Have there been any environmental liens or governmental notification or involvement relating to past or current use or disposal of hazardous substances with respect to the property of any facility or structure located on the property?	☐ Yes ☐ No ☐ D/K
19.	If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system, or has the well been designated as contaminated by any government environmental/health agency? *(if not applicable, please check* NO*)*	☐ Yes ☐ No ☐ D/K
20.	Is there any environmental litigation, administrative action or cleanup action involving the property related to a release or threatened release of any hazardous substance or petroleum product?	☐ Yes ☐ No ☐ D/K
21.	Are you aware of testing of any environmental media (soil, groundwater, surface water, etc.) at the property which identified levels of contaminants in excess of regulatory standards and/or cleanup guidelines?	☐ Yes ☐ No ☐ D/K
	ENVIRONMENTAL/BUILDING CONDITIONS	
22.	Has asbestos testing ever been conducted at the Property? *If YES, please forward a copy of test results and/or survey reports: (not available)*	☒ Yes ☐ No ☐ D/K
23.	Are any asbestos containing materials present at the Property? If yes, please elaborate: Floor tiles contain asbestos; currently encapsulated at some units; other units had the tiles removed.	☒ Yes ☐ No ☐ D/K
24.	Has lead paint testing ever been conducted at the Property? *If YES, please forward a copy of test results. (Not available)*	☒ Yes ☐ No ☐ D/K
25.	Is lead-based paint present at the Property? If yes, please elaborate: Drywall was replaced, removing any lead paint. Dated approximately 1995..	☒ Yes ☐ No ☐ D/K
26.	Has radon testing ever been conducted at the Property? *If YES, please forward a copy of test results.*	☐ Yes ☒ No ☐ D/K
27.	Are there any problems with water intrusion, water damaged surfaces or excessive mold growth within the buildings? If yes, please elaborate:	☐ Yes ☒ No ☐ D/K

COMMENTS:

For any questions answered "YES" that warrant further elaboration, please use the following space as necessary:

1. Because of the building age we lack records regarding some of the questionaire issues.

Attachment B

TRACOR

Tracor Technology Resources, Inc.
1601 Research Boulevard
Rockville, MD 20850-3173
301 251-4911

Project No.: 6535-001
Serial No.: JDE-94-035

May 13, 1994

Mr. Terrence L. Roselle
Modernization Coordinator/
Construction Manager
Alexandria Redevelopment and
Housing Authority
600 North Fairfax Street
Alexandria, VA 22314

Subject: LEAD-BASED PAINT RISK ASSESSMENT

Dear Mr. Roselle:

On April 19 through 26, 1994, Tracor Technology Resources, Inc. (TTR) conducted a Lead-Based Paint Risk Assessment which included lead dust wipes and soil sampling at the Alexandria Redevelopment and Housing Authority Development. Sample location and analytical results are in the attached report. The development and units are listed below:

Samuel Madden Homes (Uptown) — Project No. 4-3

1001 Montgomery Street
909 N. Henry Street
939 N. Henry Street
1001 Madison Street
1022 Montgomery Street

Samuel Madden Home (Downtown) — Project No. 4-3

409 Oronoco Street
519 N. Pitt Street
406 Pendleton Street
421 Princess Street
432 N. Royal Street (Royal Daycare)
408 Oronoco Street

James Bland Homes — Project No. 4-4

811 N. Alfred Street
926 N. Columbus Street
814 Montgomery Street
733 N. Alfred Street
813 Wythe Street
829 N. Patrick Street
823 N. Alfred Street

Ramsey Homes — Project No. 4-5

625 N. Patrick Street
623 N. Patrick Street
611 N. Patrick Street
913 Pendleton Street
615 N. Patrick Street

James Bland Addition — Project No. 4-7

902 First Street
920 N. Alfred Street
909 Montgomery Street
907 N. Patrick Street
925 N. Patrick Street

Andrew Adkins Homes — Project No. 4-8

734 N. Fayette Street
1221 Wythe Street
1204 Madison Street
1243 Wythe Street
1332 Madison Street
1315 Wythe Street

Two hundred and seventy (270) lead dust wipe samples were collected during the survey. Sampling and analysis were conducted in accordance with the Department of Housing and Urban Development "Lead-Based Paint Risk Assessment Protocol". The samples were submitted and analyzed by the Atomic Absorption Spectrophotometry Analytical Method, Number ASTM D3335-85a for total lead content.

According to the HUD Interim Guidelines, dust readings in excess of 200 micrograms per square foot ($\mu g/ft^2$) on floors, 500 $\mu g/ft^2$ on window sills or 800 μg/sq ft on window wells are considered positive readings. Two (2) window sills at two different apartment unit locations were above 500 $\mu g/ft^2$ (see Conclusion and Recommendations).

Soil samples were also collected and analyzed according to HUD "Lead-Base Paint Risk Assessment Protocol". The samples were analyzed by atomic absorption spectrophotometry, analytical method SW846, method 7420 for total lead content. Soil sample results ranged from 39 parts per million (ppm) to 618 ppm. The Environmental Protection Agency recommend level in lead in soil is 500 ppm, only one area was slightly above the recommended level (Samuel Madden, uptown). This is not uncommon for the Washington, DC area. The soil sample levels can be used as the baseline reference level for future lead abatement in the near future.

Conclusion and Recommendations

Units 909 Montgomery Street and 925 North Patrick Street in the James Bland Addition communities were the only two apartments that exceed the HUD Guideline for the maximum level of lead dust for window sills (500 $\mu g/ft^2$) with levels of 982 $\mu g/ft^2$ and 1077 $\mu g/ft^2$ respectively in the living rooms.

Each living room area shall be cleaned according to the attached In-Place Management Plan (Periodic Cleanup Procedures to Control Lead Dust using the following steps).

- The living room areas shall be HEPA vacuumed to remove all surface dust and small debris.
- A wet washing shall follow using TSP detergent and warm water solution. Care should be taken each time the cleaning mixture is exchanged to ensure the dirty water is not allowed to contaminate other surfaces. The area should be rewashed with clean water.
- A final HEPA vacuuming of the entire area shall be done.

Should you have any questions or require additional information please contact this office at (301) 251-4921.

Sincerely,

TRACOR TECHNOLOGY RESOURCES, INC.

Joseph D. Eichenlaub, IH
Manager, Environmental and
Industrial Hygiene Services

Unhee Kim, CIH
Director, Environmental and
Industrial Hygiene Services

JDE:srp

Enclosure

TABLE OF CONTENTS

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Location Map	Section 7
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APPENDICES

A-1 Job Request Form

A-2 Maintenance Work Approval Form

A-3 Evaluation of Work Affecting Lead

A-4 Documentation of Training Form

UNITS SCHEDULED FOR TESTING

VA 4-4	811 N. Alfred Street
	926 N. Columbus Street
	814 Montgomery Street
	733 N. Alfred Street
	813 Wythe Street
	829 N. Patrick Street
	823 N. Alfred Street
VA 4-8	734 N. Fayette Street
	1221 Wythe Street
	1204 Madison Street
	1243 Wythe Street
	1332 Madison Street
	1315 Wythe Street
* VA 4-5	625 N. Patrick Street
	623 N. Patrick Street
	611 N. Patrick Street
	913 Pendleton Street
	615 N. Patrick Street
VA 4-7	902 First Street
	920 N. Alfred Street
	909 Montgomery Street
	907 N. Patrick Street
	925 N. Patrick Street
VA 4-3 D	409 Oronoco Street
	519 N. Pitt Street
	406 Pendleton Street
	421 Princess Street
ARHA Day Care]	432 N. Royal Street
	408 Oronoco Street
VA 4-3 UP	1001 Montgomery Street
	909 N. Henry Street
	939 N. Henry Street
	1001 Madison Street
	1022 Montgomery Street

VA 4-4 James Bland

N. Alfred Street - (Townhomes)	707,709,711,713,715,717,719,721,723,725,727,729,731, 733,735,737, 806,807,808,809,810,811,812,813,814,815,816,817,818,819, 820,821,822,823,824,825,826,827,828,829,830,831,832,833, 834,835,836,837,838,840 907,911,913,915,917,919,921,923,925,927,929,931,933,935, 937
N. Columbus Street - (Townhomes)	734,736,738,740, 826,828,830,832,834,836, 924,926,928,930,932,934
First Street - (Townhomes)	806,808,810,812,814,816,818,820,
Madison Street - (Townhomes)	806,808,810,811,812,813,814,815,816,817,818,819,820,821 901,903,905,907,909,911,913,915
Montgomery Street - (Townhomes)	806,808,810,812,814,816,818,820 900,902,904,906,908,910,912,914
N. Patrick Street - (Townhomes)	801,803,805,807,813,815,817,819,821,823,829,831,833,835
Wythe Street - (Townhomes)	811,813,815,817,819,821,

VA 4-5 Ramsey Homes

N. Patrick Street - (Townhomes)	605,609,611,613,615,619,621,623,625,627
Pendleton Street - (Townhomes)	913,915
Wythe Street - (Townhomes)	912,914

VA 4-7 James Bland Addition

N. Alfred Street - (Townhomes)	902,904,906,908,910,912,914,916,918,920,922,924,926,928
First Street - (Townhomes)	902,904,906,908,910,912,914,916,918
Montgomery Street - (Townhomes)	901,903,905,907,909,911,913,915,917
N. Patrick Street - (Townhomes)	901,903,905,907,909,911,913,915,917,919,921,923,925,927

Va 4-8 Andrew Adkins

N. Fayette Street - (Townhomes)	700,702,704,706,708,710,712,714,716,718,720,722,724,726, 728,730,732,734,736,738
Madison Street - (Townhomes)	1200,1202,1204,1206,1208,1210,1212,1214,1216 1300,1302,1304,1306,1308,1310,1312,1314,1316,1318,1320, 1322,1324,1326,1328,1330,1332,1334,1336,1338,1340,1342, 1344,1346,1348,1350
Wythe Street - (Townhomes)	1201,1203,1205,1207,1209,1211,1213,1215,1217,1219,1221, 1223,1225,1227,1229,1231,1233,1235,1237,1239,1241,1243, 1245,1247,1249,1251,1253, 1301,1303,1305,1307,1309,1311,1313,1315

PART II

ASSESSMENT REPORT FORM

Ramsey Homes
Development Name

4-5
HUD Project Number

Contact Information

ARHA
Housing Authority (PHA/IHA)

Terrence Roselle
Housing Authority Contact for this Development

Tracor Technology Resources, Inc.
Risk Assessment Firm

Date Document Completed by Housing Authority

PART II: RISK ASSESSMENT REPORT FORM

To Be Completed By The Risk Assessor

RISK ASSESSMENT MEETING

A meeting is to be held between the Risk Assessor and housing authority management to discuss the completeness and accuracy of submitted or gathered Development Data.

ARHA
Housing Authority

600 North Fairfax Street
Alexandria, Virginia 22314
Address

Tracor Technology Resources, Inc.
Risk Assessment Firm

Joseph D. Eichenlaub
Name of Risk Assessor

April 4, 1994 - April 12, 1994
Date

LIST ALL ATTENDEES AT SITE ASSESSMENT MEETING

Name	Position	Organization
Terrence Rosselle	Modernization Coordinator	ARHA
Unhee Kim	Director, Env.&IH Svcs.	Tracor Tech.
Joe Eichenlaub	Manager, Env.&IH Svcs.	Tracor Tech.

PART II: RISK ASSESSMENT REPORT FORM

SECTION I: CLARIFICATION OF DEVELOPMENT DATA FORM

A. Required Development Data

1. List all documents which were submitted or made available by the housing authority.

   - Part I Development Data Form
   - Development Diagrams
   - Address Location List
   - Keys to each unit included in the Risk Assessment

2. Please explain if the housing authority did not submit or make available documents which were requested in the DDF, Part I, Required Development Information. Will any missing documents be available in the future? (Refer to Required Development Information #17.)

B. Housing Development History

1. Probable Lead-Based Paint (LBP) Surfaces: (See Item 11 in Part I, Section I) Was the housing authority's list complete? Note surfaces which were not included. Discuss the accuracy of the housing authority's ratings (good, fair, and poor) of the overall conditions of painted surfaces. (Good = intact; Fair = intact but worn, minor chips from wear and tear but no adhesion or substrate problems; Poor = severely worn or no longer adhering or substrate deteriorating, i.e., peeling, flaking, cracking, etc.)

   - The housing authority's list is complete
   - All surfaces were included
   - The accuracy of the housing authority was good, fair/poor conditions

2. Is the overall condition of probable LBP surfaces uniform? Are there surfaces which were observed in exceptionally good or poor condition?

   - Yes, the overall condition of probable LBP surfaces is uniform
   - No

3. Lead-based Paint Abatement: (See Item 13 in Part I, Section I)

   Has any systematic lead-based paint abatement taken place in this development?

   yes___ no_X_

   If yes, describe the extent to which lead-based paint was abated.

a. Was abatement part of a systematic plan or in response to an EBL?

No. The Health Department has not informed ARHA of any children with elevated blood lead levels.

b. Was the decision to abatement based on reliable test results?

No

c. Is there evidence that lead-based paint hazards remain in the building environment after abatement? (Example: window replaced but not the sill)

N/A - No abatement has been done

d. Has any clearance testing been performed? If yes, describe protocol used.

N/A

4. Substantial Maintenance: (See Item 12 in Part I, Section I)

Have any previous substantial maintenance projects resulted in the abatement of lead-based paint? Please describe.

N/A

Is it likely that any of the previous substantial maintenance work resulted in a substantial increase of lead available in the housing environment, e.g., recent scraping of exterior siding? Please describe.

N/A

C. Development Use and Occupancy

1. Overcrowded Units: (See Item 14 in Part I, Section I)

What percent of the development's units are overcrowded?
N/A %

2. Child Care: (See Item 3 in Part I, Section I)

   If known, what percent of the units are used on a regular basis for day care of children?

   N/A % Unknown

3. Number of Children: (See Item 16 in Part I, Section I)

   Calculate the average number of children aged 0-7 per unit.

   .66 /unit

4. Turnover Rate: (See Item 15 in Part I, Section I)

   For this development calculate the percentage of units vacated in the past 12 months.

   .6 %

   What is the housing authority's explanation of its turnover rate if it is over 20%?

D. Elevated Blood Lead Level Cases

1. Based on your interviews and discussions, is there a local blood screening program?

   No. However, children can have their blood screening at the Health Department at no cost to the individual.

Is there a reporting procedure for children identified as having EBL such that the PHA would be automatically notified when EBL children are identified?

No written policy. However, ARHA would be notified by the Health Department of EBL levels.

2. Based on interviews and discussions, does an EBL constitute an emergency under the housing authority's Resident Selection and Assignment Plan?

   Yes

3. If there are or have been EBL cases, summarize how they were managed by the housing authority. Were the residents relocated promptly to a "lead-free unit?" Have the units from which they were relocated been abated and reoccupied?

   No EBL's have been reported to the Housing Authority by the Health Department or by individual living in the development.

4. Is the housing authority in compliance with HUD's regulation regarding children with an EBL?

   No. The ARHA has no written policy for EBL or handling cases concerning children with EBL. However, the children can have blood lead level check at the Health Department at no cost to the parents.

5. Based on interviews, does the housing authority have a lead-based paint resident education policy for this development, including encouragement to have children screened for lead poisoning, specific information on the location of lead paint hazards, and housekeeping and cleaning information regarding reducing lead dust levels?

   The ARHA has no written policy.

E. Review of Previous Testing: **(THE HOUSING AUTHORITY HAS THE OPTION OF NOT SUBMITTING THIS INFORMATION FOR REVIEW.)**

Please report on the following if this information is provided by the housing authority in the requested submittals.

N/A

1. Apartment Interiors: Summarize the Scope of Testing work including the number of units tested, the areas in each unit, the surfaces tested in each area, and the number of readings taken on each surface.

   Lead wipe testing was conducted in the kitchen, living room and 2 children's bedrooms or one adult bedroom (if 2 child bedrooms were not available).

   Test locations included window sill and floor in each area. Floor areas were random corner, entrance or under window (12" x 12" area). Window sills were wiped and the sills measured.

   All wipe samples were collected according to Section I Inspections and Dust Sample to be Collected - HUD Lead Based Paint Risk Assessment Protocol.

2. Common Areas/Community Facilities: Wee common areas tested? Describe the Scope of Testing using the same criteria as the above.

   No common areas were tested, all units were walk-up units.

3. Soil: Was soil tested? Describe the protocol and explain why used.

   Yes, soil samples were collected as a composite sample. One sample (1"x 1" and 1" in depth) outside of each unit tested was added to the composite sample. Most of the parking was street parking with an alleyway behind each row of units. (No parking lots).

   Playgrounds were also included in the Risk Assessment and composite soil samples collected in each area.

   All soil samples were collected according to Section IV Soils Sample Collection "HUD Lead-Based Paint Risk Assessment Protocol".

4. Quality Control: Describe the measures taken to ensure the accuracy of XRF testing.

   a. Substrate correction:
      XRF testing by different contract

   b. Averaging multiple readings:
      N/A

   c. XRF calibration check:
      N/A

   d. Other:
      N/A

5. Confirmation by Laboratory Analysis:

Were inconclusive XRF readings confirmed by laboratory analysis?
N/A

6. Sample Collection Procedures:

How were the laboratory samples collected?
N/A

7. HUD Guidelines: Was testing performed in conformance with the recommendations outlined in the HUD Interim LBP Guidelines? If not, specifically describe non-conforming items.

All Risk Assessment testing was performed as outlined in the HUD Interim LBP Guidelines.

PART II: RISK ASSESSMENT REPORT FORM

To Be Completed By The Risk Assessor

SECTION II: CLARIFICATION OF HOUSING AUTHORITY'S MAINTENANCE, MANAGEMENT, AND STAFFING INFORMATION

Note: The Risk Assessor should respond to each maintenance, management, and staffing question in relationship to how the housing authority's policies address lead-based paint.

A. Maintenance

1. Based on your interviews and observations:

   Is the housing authority maintaining its paint surfaces in good condition?

   The paint surface range from fair to poor inside the units tested.

   Are these surfaces maintained in a non-defective condition?

   Some of the window sills have flaking paint.

2. Based on your interviews and observations:

Are there extraordinary or chronic maintenance items (e.g., roofs, leaky plumbing) that need attention?

No

Do any of these items affect the condition of painted surfaces?

No

3. Work Order System: (See Item 4 in Part I, Section II)

Did your discussion, inspection, or review of required submissions indicate that work orders were being completed in a timely and effective manner? [Timely and effective manner means that at least 95% of the housing authority's emergency items were corrected within 24 hours or emergency status was abated, and the number of non-emergency work orders outstanding at the end of the authority's immediate past fiscal year is greater than 8% and less than or equal to 10% of the total number of work orders received during the immediate past fiscal year, excluding cyclical work orders.] **THIS QUESTION IS NOT APPLICABLE TO INDIAN HOUSING AUTHORITIES.**

Yes

Is the work order system adequate to address LBP issues, E.g., identifying units with lead-based paint, prioritizing maintenance of those units with lead-based paint?

No

4. Repairing Policy: (See Item 5 in Part I, Section II)

Summarize the housing authority's repainting policy.

ARHA has no policy.

Discuss how this policy addresses lead-based paint and the overall condition of painted surfaces in the development.

ARHA has no written policy.

B. Management

1. Turnover Procedure: (See Item 6 in Part I, Section II)

Summarize the housing authority's unit turnover policy as it relates to the routine preparation of units for reoccupancy.

ARHA does not have a unit turnover policy and does not address lead-based paint in units to be turned over for reoccupancy.

The housing authority does repair chipping, peeling paint when preparing a vacant unit for reoccupancy. However, the ARHA has no written policy at this time.

Approximately, how many units were prepared for reoccupancy in the past 12 months?

1 unit for the development

2. Modernization: (See Item 8 in Part I, and Item 2 in Part I, Section II)

Evaluate the housing authority's modernization plans for adequacy of LBP abatement for the development.

The housing authority has not implemented a modernization plan at this time.

B. Management

1. Turnover Procedure: (See Item 6 in Part I, Section II)

Summarize the housing authority's unit turnover policy as it relates to the routine preparation of units for reoccupancy.

ARHA does not have a unit turnover policy and does not address lead-based paint in units to be turned over for reoccupancy.

The housing authority does repair chipping, peeling paint when preparing a vacant unit for reoccupancy. However, the ARHA has no written policy at this time.

Approximately, how many units were prepared for reoccupancy in the past 12 months?

1 unit for the development

2. Modernization: (See Item 8 in Part I, and Item 2 in Part I, Section II)

Evaluate the housing authority's modernization plans for adequacy of LBP abatement for the development.

The housing authority has not implemented a modernization plan at this time.

3. What is the schedule for modernization?

   Unknown at this time.

   Is the schedule consistent with the presence of lead-based paint hazards (immediate and potential)?

   Unknown

4. At what stage is the housing authority in the implementation of the modernization program for the development?

   Preliminary

C. Staffing

1. Summarize the housing authority's programs for protecting workers from hazardous substances.

   The housing authority has a Right to Know Program.

2. Based on interviews with housing authority managers and maintenance workers, briefly describe any worker training programs relative to lead-based paint?

   No training programs have been implemented.

3. What indication is there that the housing authority's workers are trained in the use of respirators, HEPA vacuums, and clearance procedures?

   None

4. Does it appear that the housing authority is deploying its maintenance staff properly to handle lead-based paint hazards? Explain.

yes___ no_X_

The ARHA is planning to train the maintenance staff to handle lead-based paint in the near future.

APPENDIX D

HISTORICAL RECORDS DOCUMENTATION

Ramsey Homes
627 N. Patrick Street
Alexandria, VA 22314

Inquiry Number: 3810516.3
December 13, 2013

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

12/13/13

Site Name:
Ramsey Homes
627 N. Patrick Street
Alexandria, VA 22314

Client Name:
Hillmann Environmental Co.
6121 Lincolnia Road
Alexandria, VA 22312

EDR Inquiry # 3810516.3

Contact: Jim Riggs

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Hillmann Environmental Co. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Ramsey Homes
Address: 627 N. Patrick Street
City, State, Zip: Alexandria, VA 22314
Cross Street:
P.O. # V3-8454
Project: Ramsey Homes V3-8454
Certification # 2745-42D7-BF09

Sanborn® Library search results
Certification # 2745-42D7-BF09

Maps Provided:

1996	1912
1993	1907
1989	1902
1959	
1941	
1921	

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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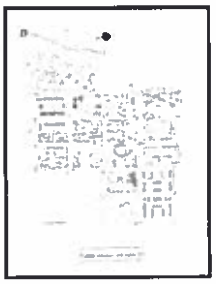
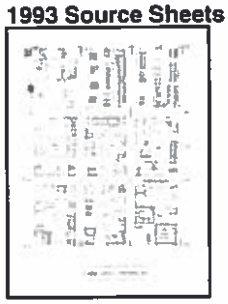


Volume 1, Sheet 23

1993 Source Sheets



Volume 1, Sheet 21

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Volume 1, Sheet 25

1989 Source Sheets

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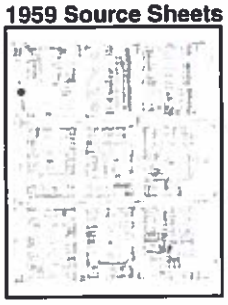
Volume 1, Sheet 21

Volume 1, Sheet 25

1959 Source Sheets



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Volume 1, Sheet 23

Volume 1, Sheet 25

1941 Source Sheets

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Volume 1, Sheet 21

Volume 1, Sheet 23

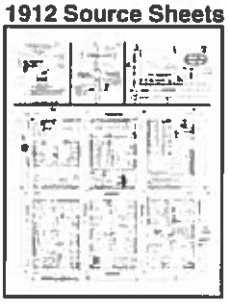
1921 Source Sheets

Volume 1, Sheet 17

Volume 1, Sheet 18

Volume 1, Sheet 21

1912 Source Sheets



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1907 Source Sheets

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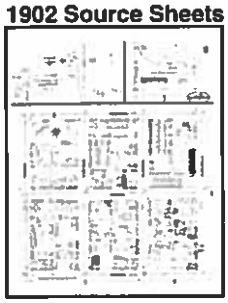
1902 Source Sheets



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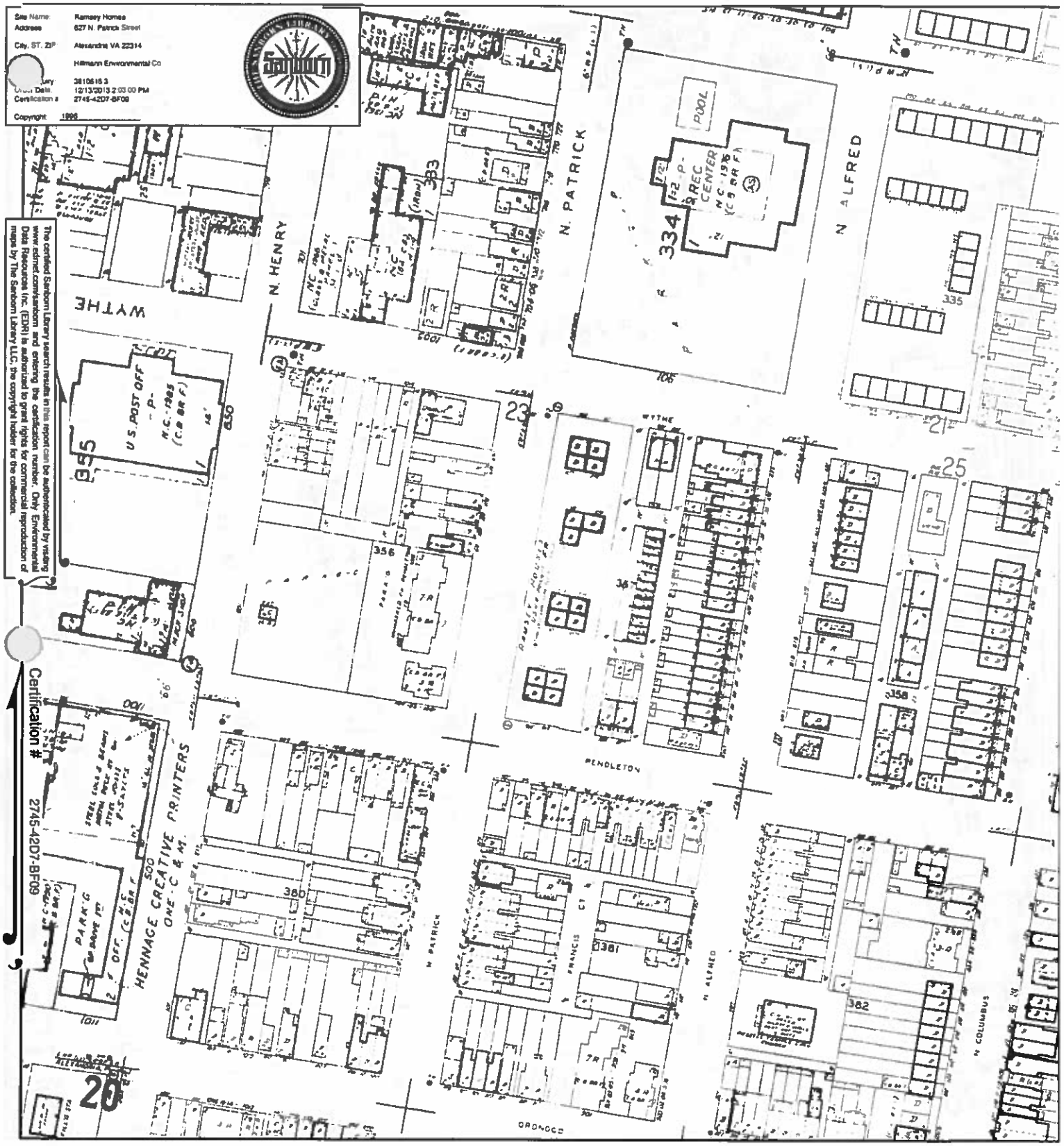

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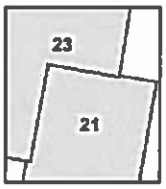

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3810516 - 3 page 6

1993 Certified Sanborn Map

Site Name: Ramsey Homes
Address: 627 N. Patrick Street
City, ST, ZIP: Alexandria VA 22314
Client: Hillmann Environmental Co
EDR Inquiry: 3810516 3
Order Date: 12/13/2013 2:03:00 PM
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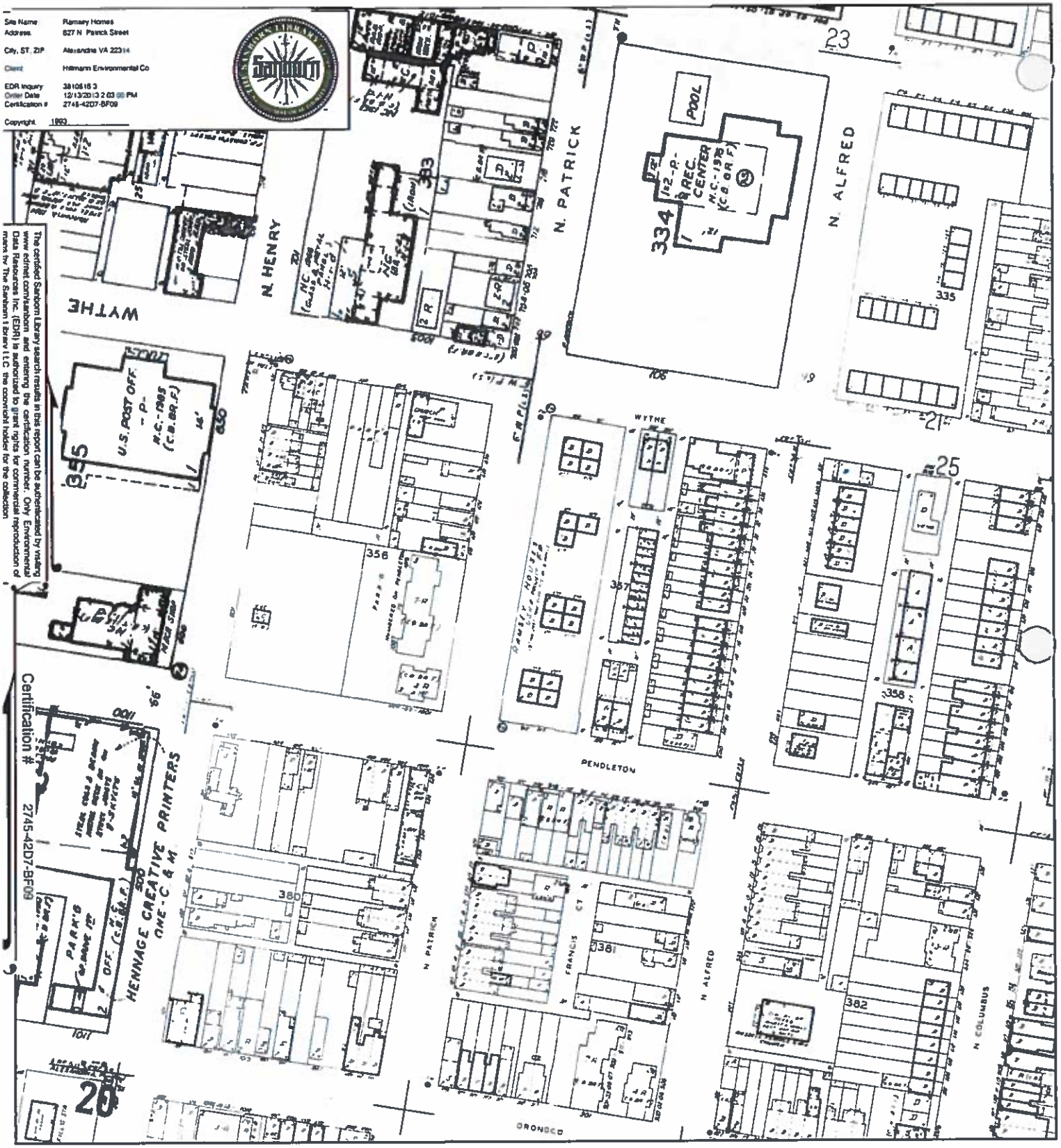
Copyright: 1993



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3810516 - 3 page 7

1989 Certified Sanborn Map

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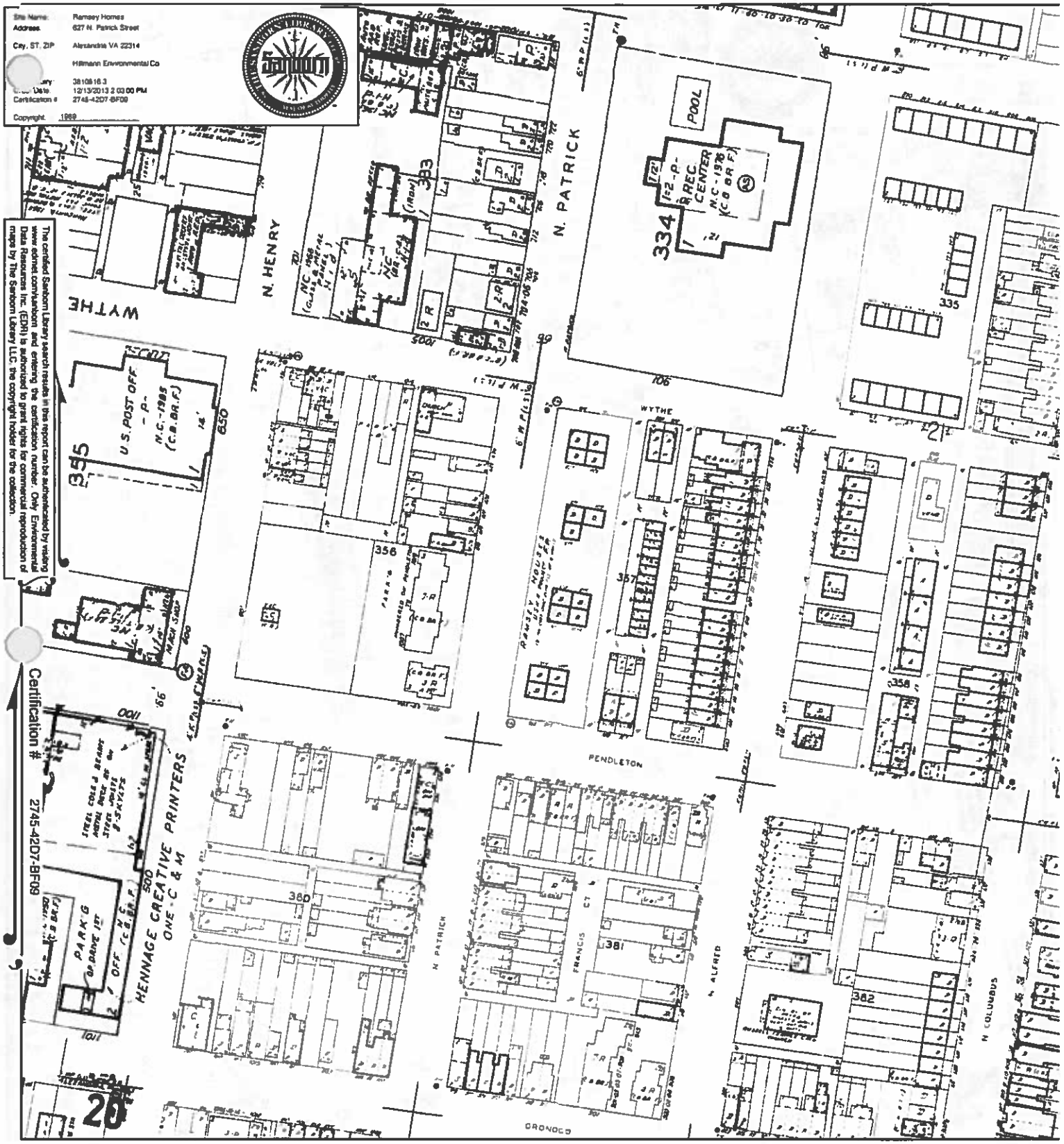

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3810516 - 3 page 8

1959 Certified Sanborn Map

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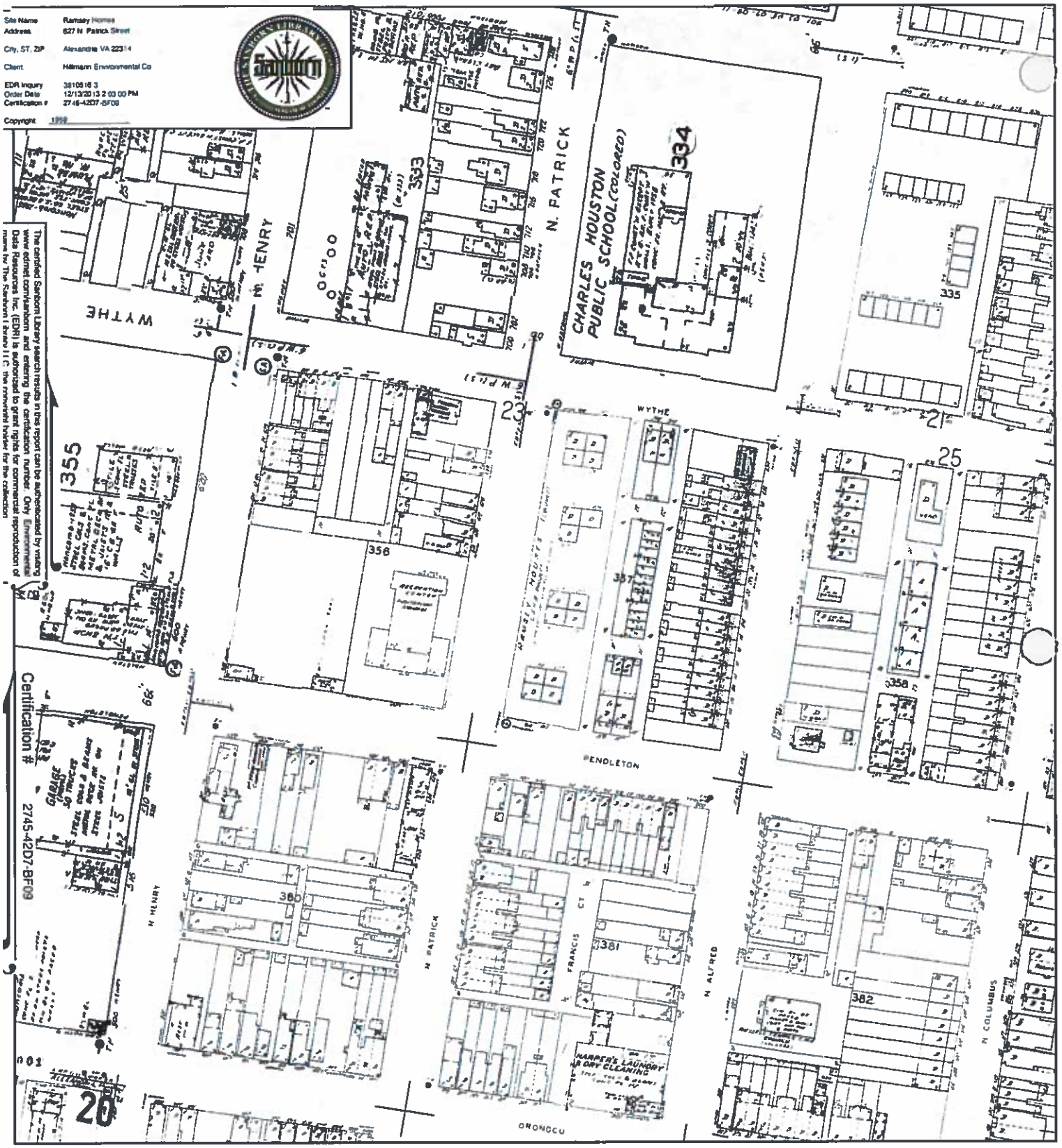

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1941 Certified Sanborn Map

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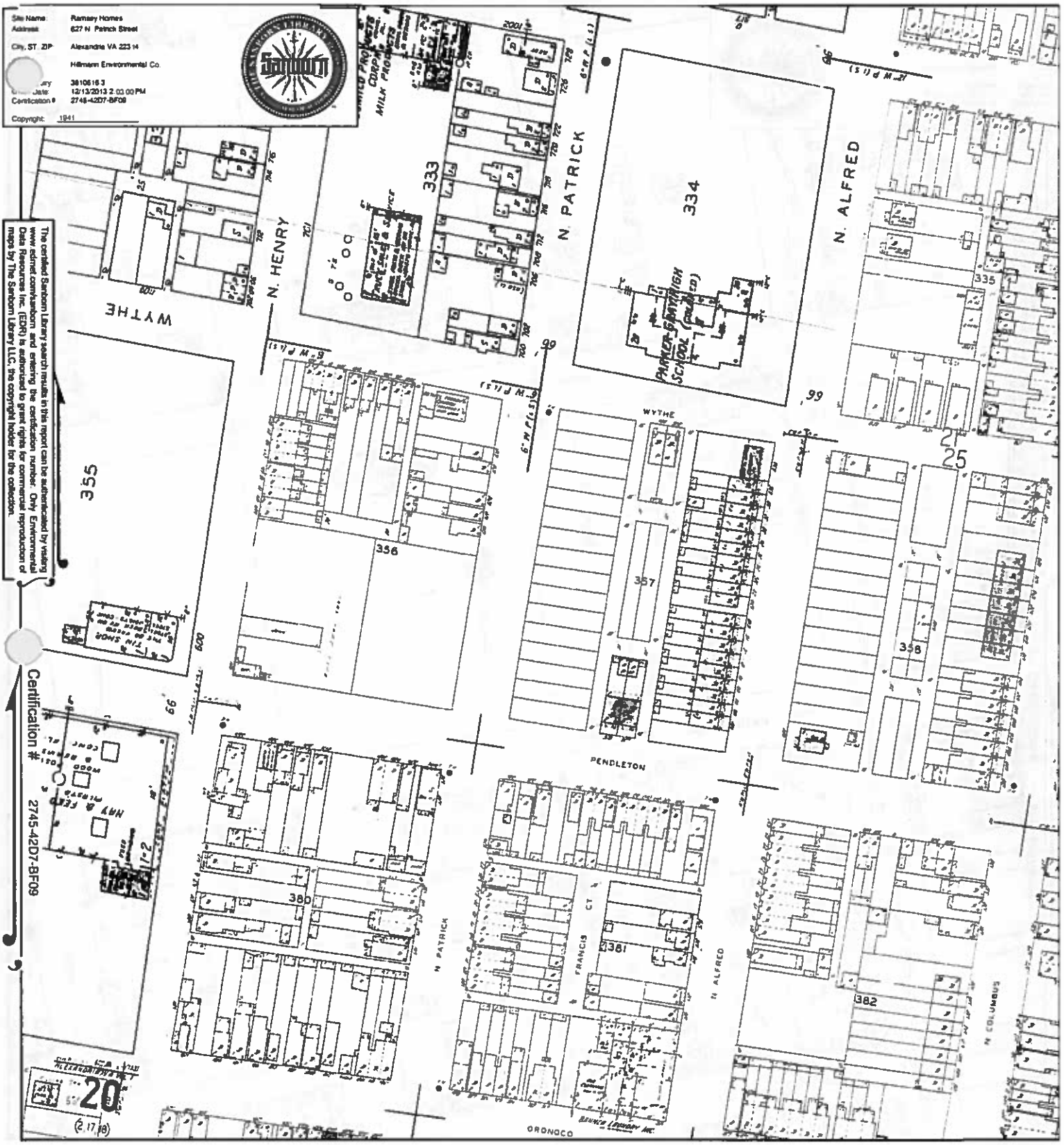

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1921 Certified Sanborn Map

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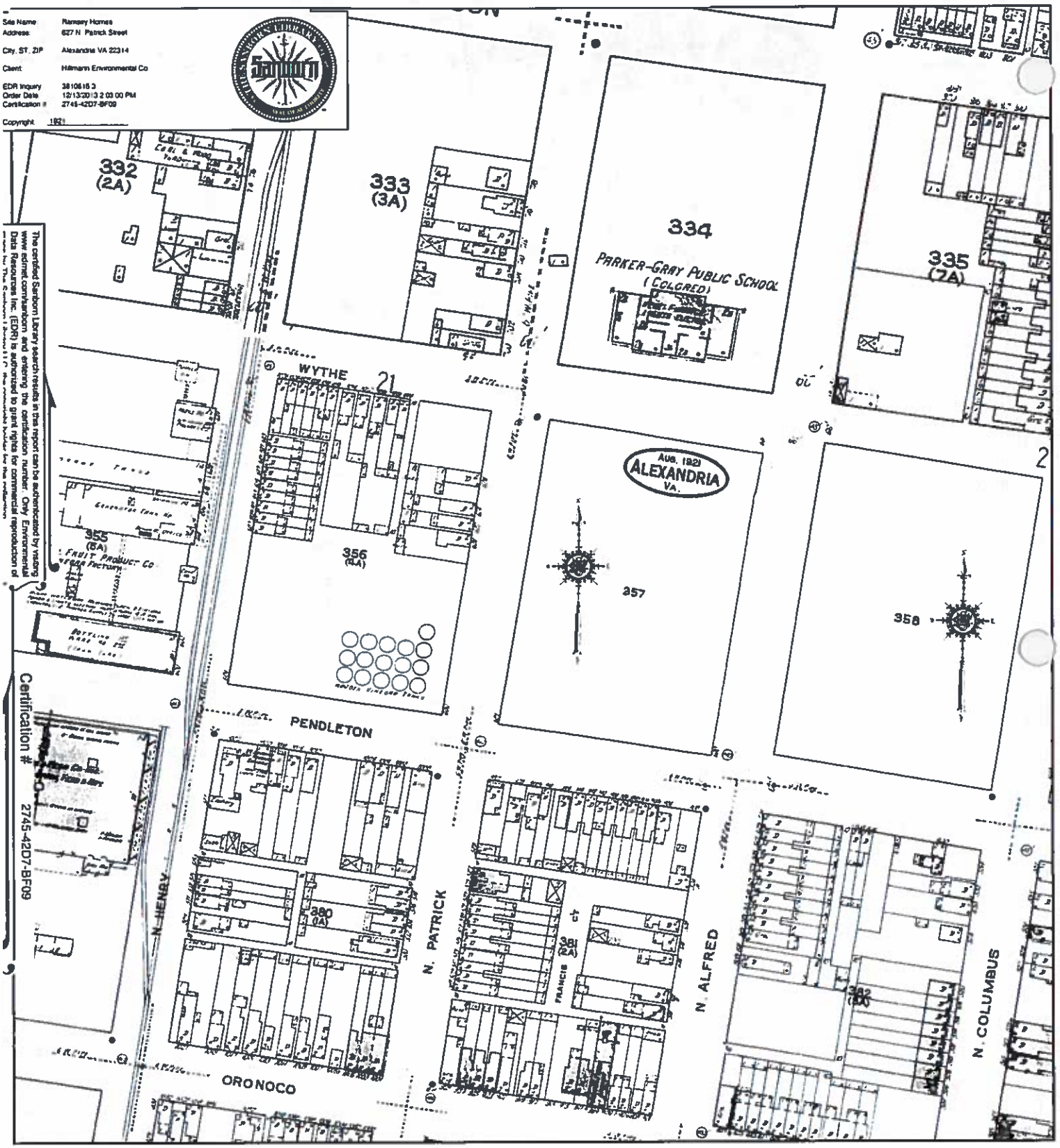

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1912 Certified Sanborn Map

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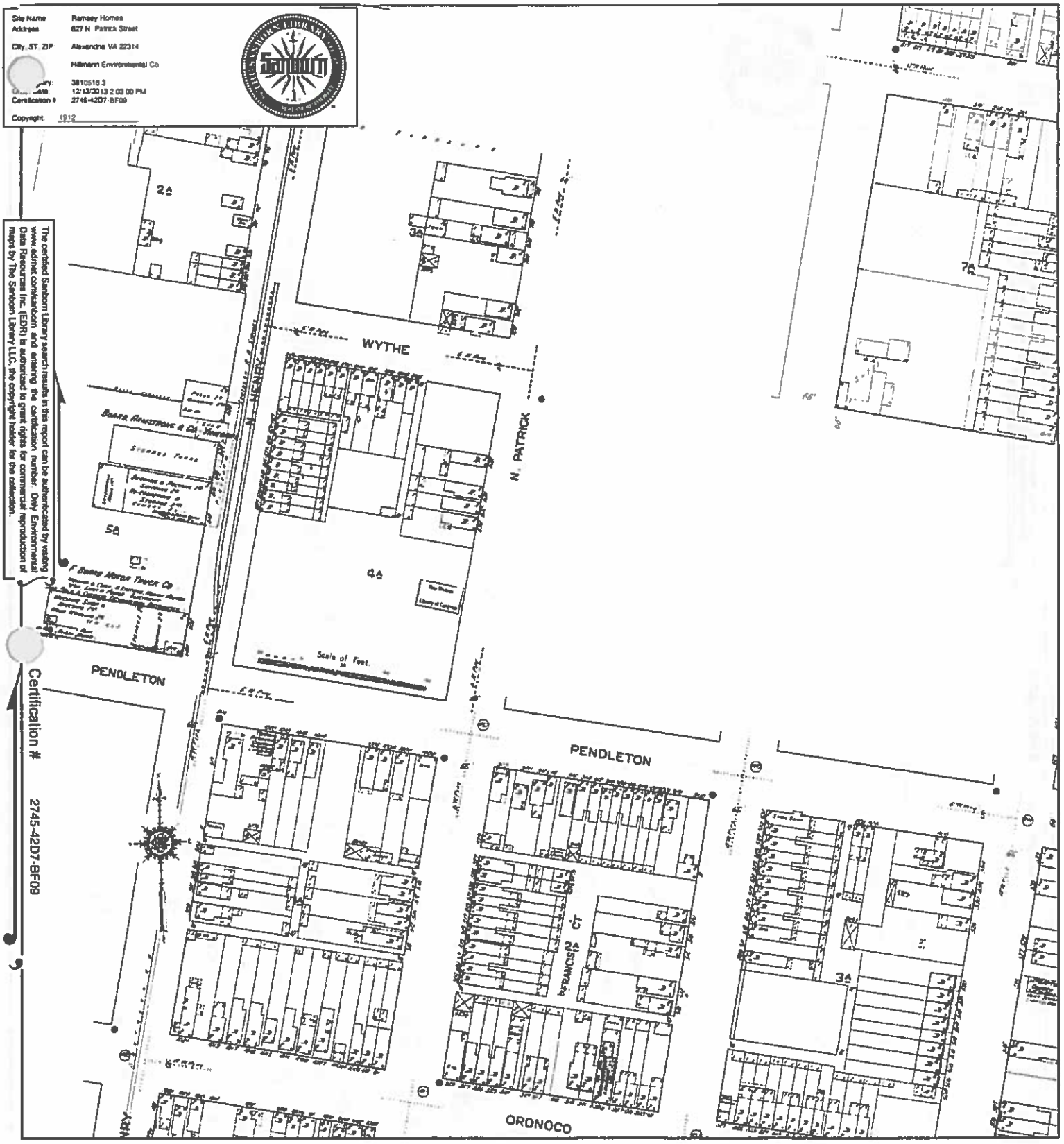

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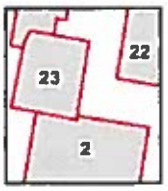

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1907 Certified Sanborn Map

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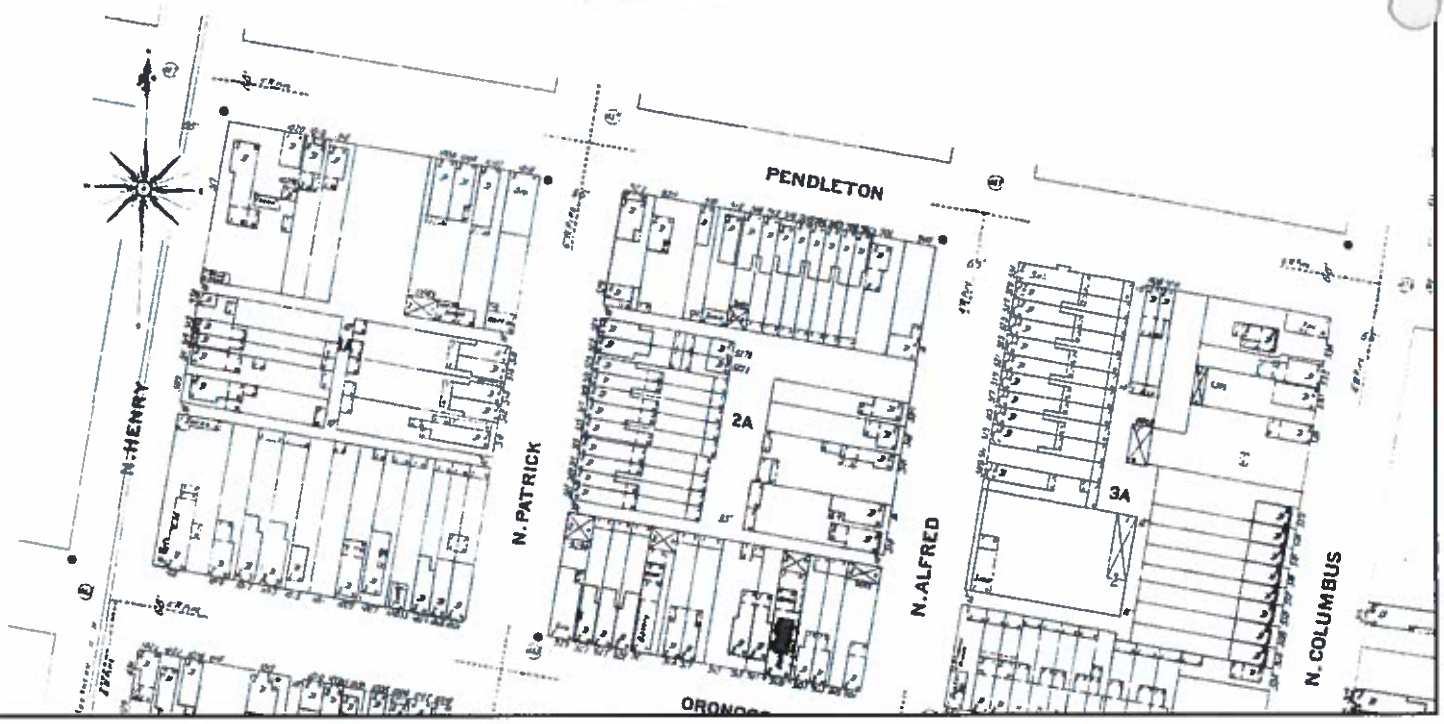

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3810516 - 3 page 13

1902 Certified Sanborn Map

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Address: 627 N Patrick Street
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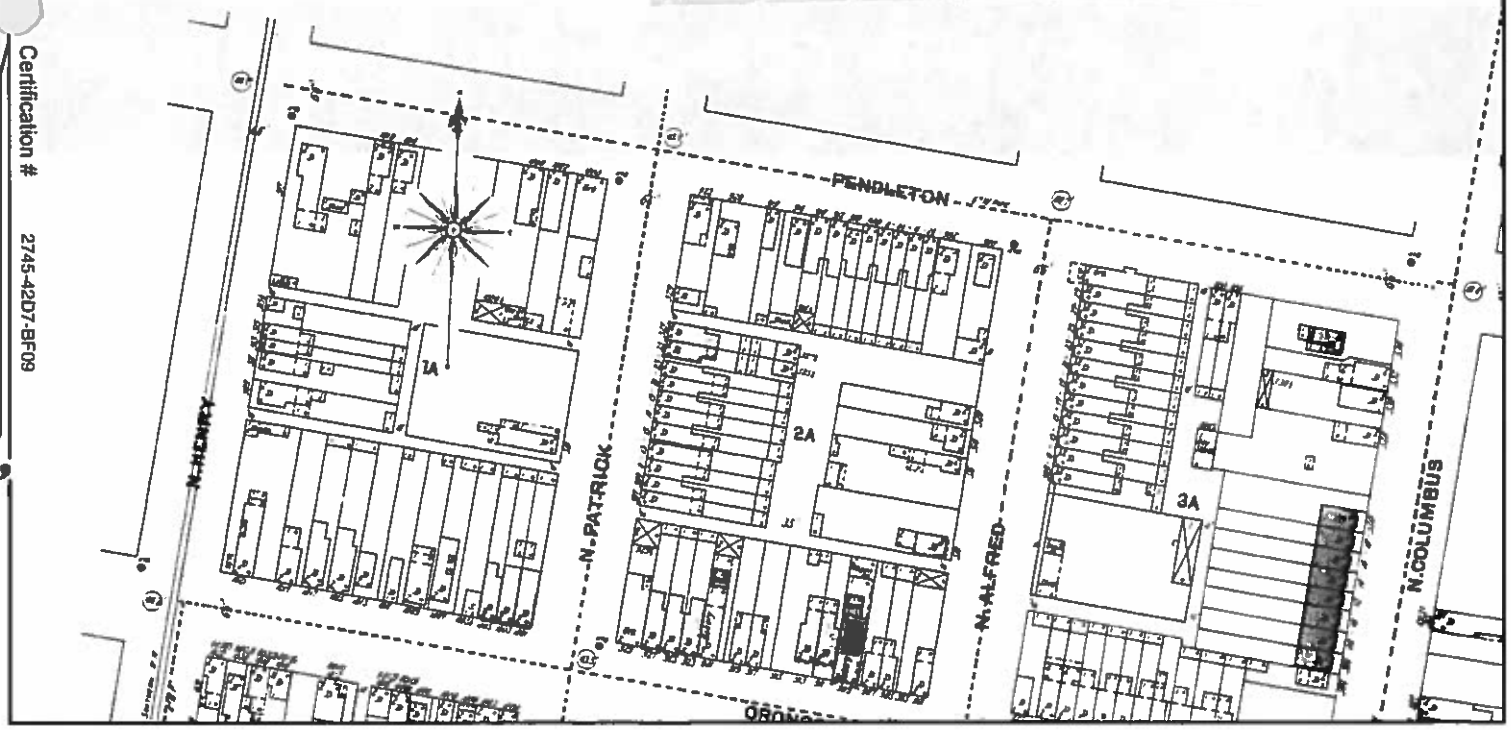

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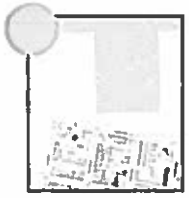

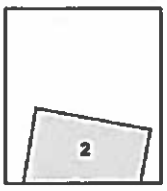

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Ramsey Homes
627 N. Patrick Street
Alexandria, VA 22314

Inquiry Number: 3810516.6
December 13, 2013

The EDR-City Directory Abstract

EDR® Environmental Data Resources Inc

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1921 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2013	Cole Information Services	-	X	X	-
2008	Cole Information Services	-	X	X	-
2003	HAINES & CO INC	X	X	X	-
1979	HILL DIRECTORY CO INC. PUBLISHERS	X	X	X	-
1974	HILL DIRECTORY CO INC. PUBLISHERS	X	X	X	-
1971	HILLS DIRECTORY CO.	X	X	X	-
1969	HILLS DIRECTORY CO.	-	X	X	-
1966	HILLS DIRECTORY CO.	-	-	-	-
1962	HILL DIRECTORY CO. INC PUBLISHERS	X	X	X	-
1961	HILL DIRECTORY CO. INC PUBLISHERS	-	-	-	-
1958	HILL DIRECTORY CO. INC PUBLISHERS	X	X	X	-
1952	HILL DIRECTORY CO. INC PUBLISHERS	X	X	X	-
1948	HILL DIRECTORY CO. INC PUBLISHERS	-	X	X	-
1942	HILLS DIRECTORY CO. INC. PUBLISHERS	-	X	X	-
1936	HILL DIRECTORY CO. INC PUBLISHERS	-	X	X	-
1930	HILL DIRECTORY CO. INC PUBLISHERS	-	X	X	-
1926	HILL DIRECTORY CO. INC PUBLISHERS	-	X	X	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1921	HILL DIRECTORY CO. INC PUBLISHERS	-	X	X	-

TAB 7

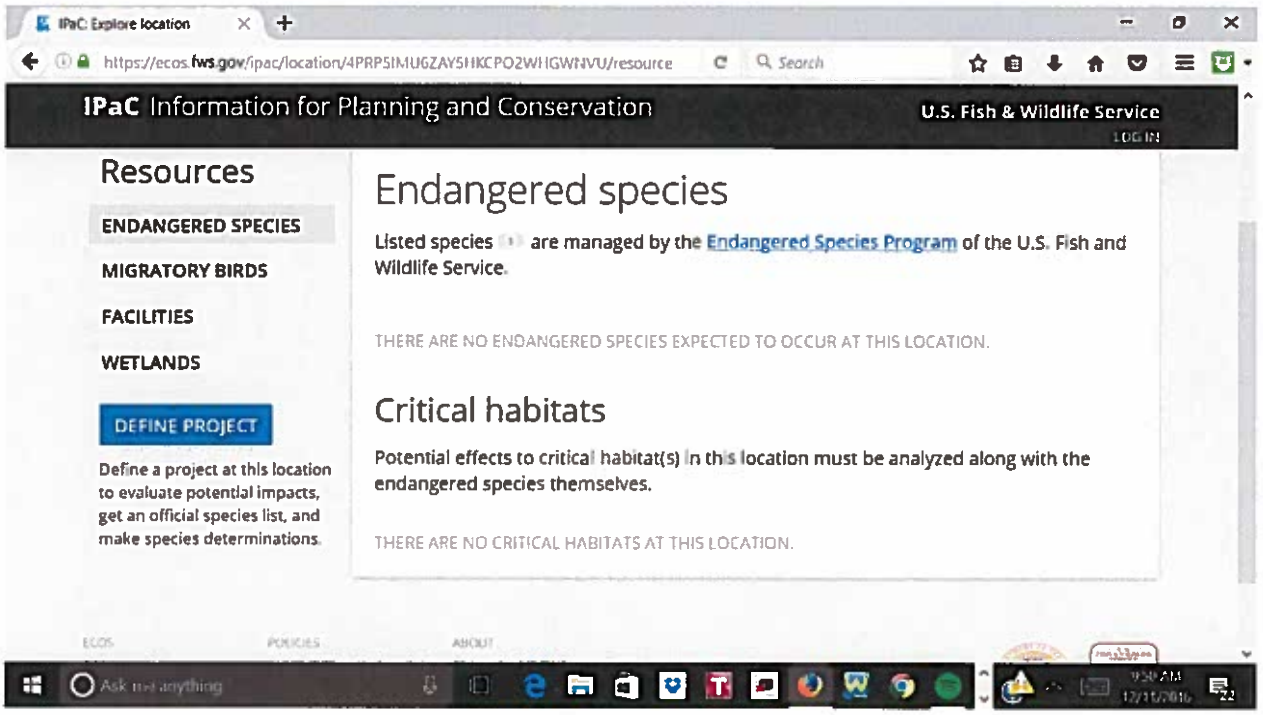
ENDANGERED SPECIES

Endangered Species – Migratory Birds

As several species of migratory birds have been identified as endangered. During the construction, and after, several measures will be taken to minimize and lessen negative impacts:

1. Minimize stockpiling construction debris on-site which would promote nesting opportunities;
2. Avoid the production of a stressor/impact to birds altogether by not taking a certain action;
3. Minimize the exposure of birds and their resources to project-related stressors by limiting the degree or magnitude of the action and its implementation;
4. Rectify the effects of an impact by repairing, rehabilitating, or restoring the affected environment;
5. Reduce or eliminate the stressor/impact over time; or
6. Compensate for the impact by replacing or providing substitute resources or environments.

699 N. Patrick Street



Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act

[2].

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.
Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data http://www.birdscanada.org/birdmon/default/datasummaries.jsp

RELATED LINKS

Birds of Conservation Concern

Measures for avoiding and minimizing impacts to birds

Nationwide conservation measures for birds

Year-round bird occurrence data

Additional information on migratory bird data is provided below.

The migratory birds species listed below are species of particular conservation concern (e.g. Birds of Conservation Concern) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the AKN Histogram Tools and Other Bird Data Resources. To

fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Thumbnails List

-

  Bird of Conservation Concern

  American Bittern Botaurus lentiginosus

-

  Bird of Conservation Concern

  American Oystercatcher Haematopus palliatus

-

  Bird of Conservation Concern

  Bald Eagle Haliaeetus leucocephalus

- No photo available

  Bird of Conservation Concern

  Black-billed Cuckoo Coccyzus erythropthalmus

- No photo available

  Bird of Conservation Concern

  Blue-winged Warbler Vermivora pinus

- No photo available

  Bird of Conservation Concern

  Cerulean Warbler Dendroica cerulea

- No photo available

  Bird of Conservation Concern

  Fox Sparrow Passerella iliaca

-

  Bird of Conservation Concern

  Gull-billed Tern Gelochelidon nilotica

- No photo available

  Bird of Conservation Concern

  Kentucky Warbler Oporornis formosus

- No photo available

  Least Bittern Ixobrychus exilis

-

  Bird of Conservation Concern

  Peregrine Falcon Falco peregrinus

- No photo available

  Bird of Conservation Concern

Pied-billed Grebe Podilymbus podiceps

- No photo available

Bird of Conservation Concern

Prairie Warbler Dendroica discolor

- No photo available

Bird of Conservation Concern

Prothonotary Warbler Protonotaria citrea

- No photo available

Bird of Conservation Concern

Purple Sandpiper Calidris maritima

-

Bird of Conservation Concern

Red Knot Calidris canutus rufa

- No photo available

Bird of Conservation Concern

Red-headed Woodpecker Melanerpes erythrocephalus

- No photo available

Bird of Conservation Concern

Rusty Blackbird Euphagus carolinus

- No photo available

  Bird of Conservation Concern

  Saltmarsh Sparrow Ammodramus caudacutus

-

  Bird of Conservation Concern

  Short-eared Owl Asio flammeus

- No photo available

  Bird of Conservation Concern

  Snowy Egret Egretta thula

-

  Bird of Conservation Concern

  Willow Flycatcher Empidonax traillii

- No photo available

  Bird of Conservation Concern

  Wood Thrush Hylocichla mustelina

- No photo available

  Bird of Conservation Concern

  Worm Eating Warbler Helmitheros vermivorum

TAB 8

EXPLOSIVE AND FLAMMABLE HAZARDS

Explosive and Flammable Hazards (CEST and EA)

General requirements	Legislation	Regulation
HUD-assisted projects must meet Acceptable Separation Distance (ASD) requirements to protect them from explosive and flammable hazards.	N/A	24 CFR Part 51 Subpart C
Reference		
https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities		

1. **Does the proposed HUD-assisted project include a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?**

   ☒ No

   → *Continue to Question 2.*

   ☐ Yes

   Explain:

   → *Continue to Question 5.*

2. **Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?**

   ☐ No

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒ Yes

   → *Continue to Question 3.*

3. **Within 1 mile of the project site, are there any current *or planned* stationary aboveground storage containers:**
   - Of more than 100 gallon capacity, containing common liquid industrial fuels OR
   - Of any capacity, containing hazardous liquids or gases that are not common liquid industrial fuels?

   ☐ No

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide all documents used to make your determination.*

☒ Yes
→ *Continue to Question 4.*

4. **Is the Separation Distance from the project acceptable based on standards in the Regulation?**
   Please visit HUD's website for information on calculating Acceptable Separation Distance.
   ☒ Yes
   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."*

   ☐ No
   → *Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."*
   Continue to Question 6.

5. **Is the hazardous facility located at an acceptable separation distance from residences and any other facility or area where people may congregate or be present?**
   Please visit HUD's website for information on calculating Acceptable Separation Distance.
   ☐ Yes
   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*

   ☐ No
   → *Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*
   Continue to Question 6.

6. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to make the Separation Distance acceptable, including the timeline for implementation. If negative effects cannot be mitigated, cancel the project at this location.**
   Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, provide approval from a licensed professional engineer.

Worksheet Summary

Compliance Determination

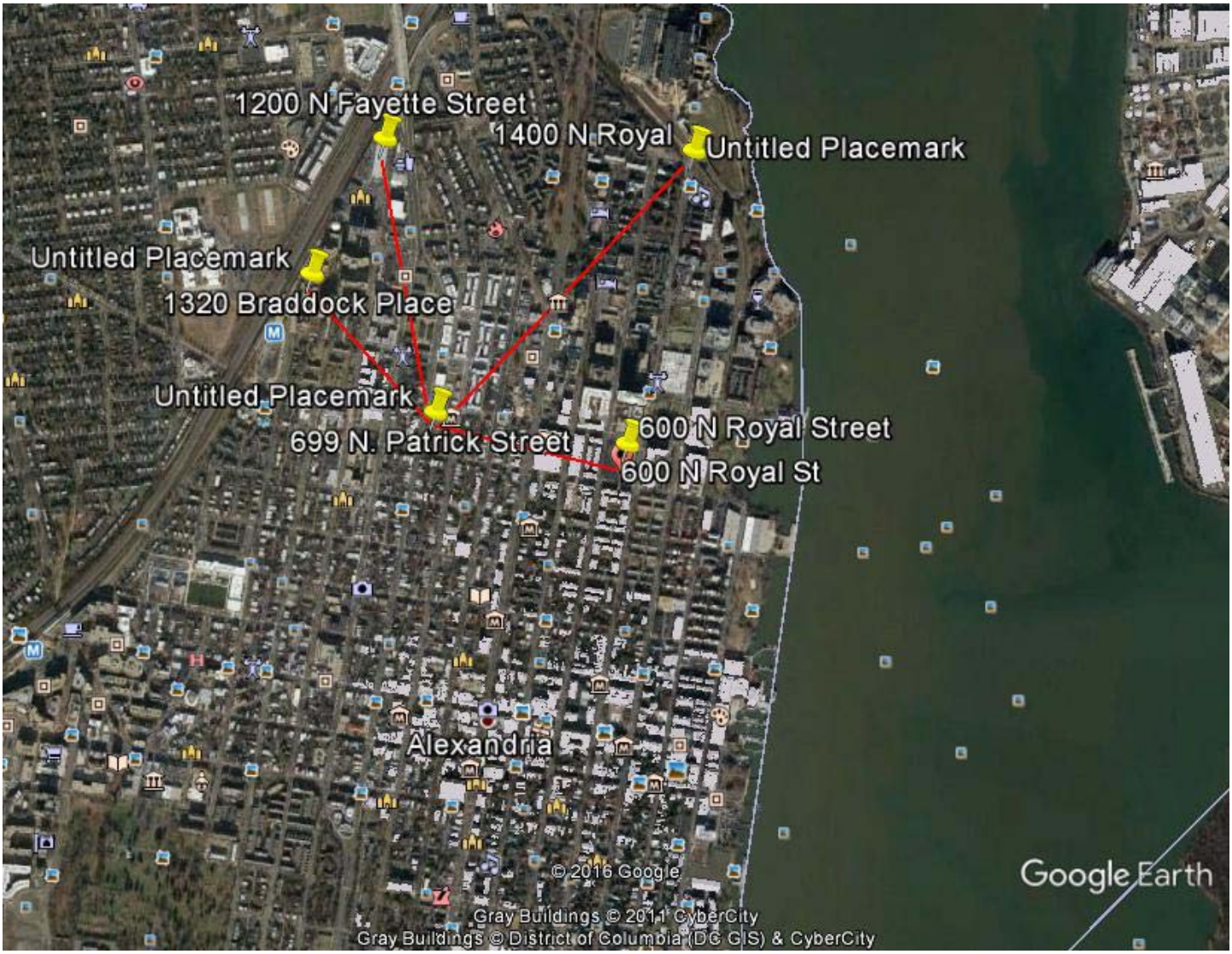
Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

In populating the above form, the Alexandria Office of Housing, the Office of Code Enforcement for Alexandria VA, and the Virginia Department of Environmental Quality were contacted. There were four active above ground storage tanks identified at the addresses below. A summary of findings based on the location, size of storage facility, content, and the acceptable standoff distance from the AST was calculated.

Facility ID	*AST Location*	*Jurisdiction*	*Capacity/ GAL*	*Contents*	*ASD for Thermal Radiation for People*	**ASD for Thermal Radiation for Buildings**
1	1200 N Fayette Street	Alexandria City	1000	Used Oil	276.57	50.28
2	1320 Braddock PL	Alexandria City	2000	Diesel	369.16	69.27
3	1400 N Royal Street	Alexandria City	4000	Diesel	492.74	95.44
4	600 N Royal Street	Alexandria City	1000	Used Oil	276.57	50.28

The site, 699 N. Patrick is more than the required acceptable separation distance (ASD) from each of the AST locations. Only the active tanks were calculated. Tanks that are no longer active or identified as "closed" were not included in the ASD calculation. However, all AST's, both active, closed and inactive, are included in the attached tank data sheets.



Google Earth

miles 1

km 1

Aboveground Storage Facility and Tank Summary

Facility Name & Address:
Facility ID: 3016413
Enterprise Rent A Car
1200 N Fayette St Alexandria, VA 22314
County: Alexandria City
Phone: (703)684-8184

Tank Id: 1

Owner Information: Enterprise RAC Company of Maryland LLC (45764), 2273 Research Blvd FL 7 , Rockville, MD 20850, Phone: (301) 670-8649

Content: USED OIL **Capacity:** 1000 gal **Status:** CURRENTLY IN USE

Release Detection: None Reported **Release Prevention:** None Reported

Installed Date: **Date Closed:** N/A

	Tank	Piping	Roofing	Foundation
Material	Bare Steel, Concrete Coated	None Reported	None Reported	Unknown
Type	Double Wall	Double Wall	N/A	N/A

Aboveground Storage Facility and Tank Summary

Facility Name & Address:
Facility ID: 3039499
Public Broadcasting Service
1320 Braddock Pl Alexandria, VA 22314
County: Alexandria City
Phone: (703)739-5000

Tank Id: MH7572

Owner Information: Public Broadcasting Service (37923), 1320 Braddock Pl , Alexandria, VA 22314, Phone: (703) 739-5000

Content: DIESEL **Capacity:** 2000 gal **Status:** CURRENTLY IN USE

Release Detection: None Reported **Release Prevention:** Double Wall

Installed Date: 1/1/1986 **Date Closed:** N/A

	Tank	Piping	Roofing	Foundation
Material	Mild Carbon Steel; Shop Fabricated; Vaulted Below Grade; UL142	None Reported	Horizontal Tank	Concrete
Type	Double Wall	None Reported	N/A	N/A

Aboveground Storage Facility and Tank Summary

Facility Name & Address:
Facility ID: 3020343
Potomac River Generating Station
1400 N Royal St Alexandria, VA 22314
County: Alexandria City
Phone: (703)838-8202

Tank Id: AST2-C

Owner Information: GenOn Potomac River Limited Liability Corp (46749), 1400 N Royal St , Alexandria, VA 22314, Phone: (703) 838-3701

Content: DIESEL
Capacity: 4000 gal
Status: CURRENTLY IN USE
Release Detection: Curbing
Release Prevention: Coated Concrete
Installed Date: 5/1/1996
Date Closed: N/A

	Tank	Piping	Roofing	Foundation
Material	Bare Steel, Reinforced W/I Beams	Bare Steel	In Building	Concrete
Type	None Reported	None Reported	N/A	N/A

Tank Id: AST2-P

Owner Information: Potomac Electric Power Company (36843), 1900 Pennsylvania Ave NW , Washington, DC 20068, Phone: (202) 872-2000

Content: OTHER
Capacity: 3500 gal
Status: PERM OUT OF USE
Release Detection: Unknown
Release Prevention: None
Installed Date: 1/1/1978
Date Closed: N/A

	Tank	Piping	Roofing	Foundation
Material	Bare Steel	Bare Steel	PRECAST CONCRETE WITH BUILTUP ROOFING INSIDE THE BUILDING	Concrete
Type	None Reported	None Reported	N/A	N/A

Tank Id: AST3-C

Owner Information: NRG Energy (47652), 1400 N Royal St , Alexandria, VA 22314, Phone: (713) 537-5458

Content: LUBE OIL
Capacity: 5500 gal
Status: CLOSED IN PLACE
Release Detection: Curbing
Release Prevention: Coated Concrete
Installed Date: 10/30/1949
Date Closed: 9/20/2013

	Tank	Piping	Roofing	Foundation
Material	Bare Steel, Reinforced W/I Beams	Bare Steel	PRECAST CONCRETE WITH BUILTUP ROOFING INSIDE THE BUILDING	Concrete
Type	None Reported	None Reported	N/A	N/A

Tank Id: AST4-C

Owner Information: NRG Energy (47652), 1400 N Royal St , Alexandria, VA 22314, Phone: (713) 537-5458

Content: LUBE OIL
Capacity: 6000 gal
Status: CLOSED IN PLACE
Release Detection: Curbing
Release Prevention: Coated Concrete
Installed Date: 10/30/1949
Date Closed: 9/20/2013

	Tank	Piping	Roofing	Foundation
Material	Bare Steel, Reinforced W/I Beams	Bare Steel	In Building	Concrete
Type	None Reported	None Reported	N/A	N/A

Tank Id: AST5-C

Owner Information: NRG Energy (47652), 1400 N Royal St , Alexandria, VA 22314, Phone: (713) 537-5458

Content: LUBE OIL
Capacity: 5500 gal
Status: CLOSED IN PLACE
Release Detection: None Reported
Release Prevention: None Reported
Installed Date: 10/30/1949
Date Closed: 9/20/2014

	Tank	Piping	Roofing	Foundation
Material	None Reported	None Reported	None Reported	None Reported
Type	None Reported	None Reported	N/A	N/A

Tank Id: PR 299

Owner Information: NRG Energy (47652), 1400 N Royal St , Alexandria, VA 22314, Phone: (713) 537-5458

Content: USED OIL
Capacity: 700 gal
Status: CLOSED IN PLACE
Release Detection: None Reported
Release Prevention: None Reported
Installed Date: 10/1/2006
Date Closed: 9/20/2013

	Tank	Piping	Roofing	Foundation
Material	Bare Steel, welded, single walled, totally above ground, shop fabricated	Bare Steel, welded, single walled, copper/brass	None Reported	Concrete, steel saddle/runner/beam
Type	None Reported	None Reported	N/A	N/A

Aboveground Storage Facility and Tank Summary

Facility Name & Address:
Facility ID: 3010958
WMATA Royal Street Bus Facility
600 N Royal St Alexandria, VA 22314
County: Alexandria City
Phone: (202)962-5077

Tank Id: 1

Owner Information: Washington Metro Area Transit Authority (33042), 600 Fifth St NW , Washington, DC 20001, Phone: (202) 962-5077

Content: USED OIL
Capacity: 1000 gal
Status: CURRENTLY IN USE
Release Detection: None Reported
Release Prevention: None Reported
Installed Date: 1/1/1998
Date Closed: N/A

	Tank	Piping	Roofing	Foundation
Material	Bare Steel	None Reported	None Reported	Concrete
Type	Double Wall	None Reported	N/A	N/A

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	1000
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	

ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	276.57
ASD for Thermal Radiation for Buildings (ASDBPU)	50.28
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options **(/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)**

Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using **Ask A Question (/ask-a-question/my-question/)**. Enter "Environmental Review" in the "My question is related to" field.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

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Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	4000
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	

ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	492.74
ASD for Thermal Radiation for Buildings (ASDBPU)	95.44
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

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Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	2000
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	

ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	369.16
ASD for Thermal Radiation for Buildings (ASDBPU)	69.27
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

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- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	1000
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	

ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	276.57
ASD for Thermal Radiation for Buildings (ASDBPU)	50.28
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options **(/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)**

Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using **Ask A Question (/ask-a-question/my-question/)**. Enter "Environmental Review" in the "My question is related to" field.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

TAB 9

FARMLANDS PROTECTION

Farmlands Protection (CEST and EA)

General requirements	Legislation	Regulation
The Farmland Protection Policy Act (FPPA) discourages federal activities that would convert farmland to nonagricultural purposes.	Farmland Protection Policy Act of 1981 (7 U.S.C. 4201 et seq.)	7 CFR Part 658
Reference		
https://www.hudexchange.info/environmental-review/farmlands-protection		

1. **Does your project include any activities, including new construction, acquisition of undeveloped land or conversion, that could convert agricultural land to a non-agricultural use?**

   ☐Yes → *Continue to Question 2.*

   ☒No

   Explain how you determined that agricultural land would not be converted:

   The subject Project is located in an urban area that has been developed for nearly 150 years.

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting your determination.*

2. **Does "important farmland," including prime farmland, unique farmland, or farmland of statewide or local importance regulated under the Farmland Protection Policy Act, occur on the project site?**

   You may use the links below to determine important farmland occurs on the project site:

   - Utilize USDA Natural Resources Conservation Service's (NRCS) Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm
   - Check with your city or county's planning department and ask them to document if the project is on land regulated by the FPPA (zoning important farmland as non-agricultural does not exempt it from FPPA requirements)
   - Contact NRCS at the local USDA service center http://offices.sc.egov.usda.gov/locator/app?agency=nrcs or your NRCS state soil scientist http://soils.usda.gov/contact/state_offices/ for assistance

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

   ☐Yes → *Continue to Question 3.*

3. **Consider alternatives to completing the project on important farmland and means of avoiding impacts to important farmland.**
   - Complete form **AD-1006**, "Farmland Conversion Impact Rating" http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045394.pdf and contact the state soil scientist before sending it to the local NRCS District Conservationist.
     (NOTE: for corridor type projects, use instead form **NRCS-CPA-106**, "Farmland Conversion Impact Rating for Corridor Type Projects: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045395.pdf.)
   - Work with NRCS to minimize the impact of the project on the protected farmland. When you have finished with your analysis, return a copy of form AD-1006 (or form NRCS-CPA-106 if applicable) to the USDA-NRCS State Soil Scientist or his/her designee informing them of your determination.

Document your conclusion:

☐ Project will proceed with mitigation.

Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide form AD-1006 and all other documents used to make your determination.*

☐ Project will proceed without mitigation.

Explain why mitigation will not be made here:

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide form AD-1006 and all other documents used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

TAB 10

FLOODPLAIN MANAGEMENT

Floodplain Management (CEST and EA)

General Requirements	Legislation	Regulation
Executive Order 11988, Floodplain Management, requires Federal activities to avoid impacts to floodplains and to avoid direct and indirect support of floodplain development to the extent practicable.	Executive Order 11988	24 CFR 55
Reference		
https://www.hudexchange.info/environmental-review/floodplain-management		

1. **Does 24 CFR 55.12(c) exempt this project from compliance with HUD's floodplain management regulations in Part 55?**

   ☒ Yes

   Provide the applicable citation at 24 CFR 55.12(c) here. If project is exempt under 55.12(c)(7) or (8), provide supporting documentation.

   The Project is situated outside of the 100 and 500 year floodplain.

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☐ No → *Continue to Question 2.*

2. **Provide a FEMA/FIRM or ABFE map showing the site.**

   The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs) or Advisory Base Flood Elevations (ABFEs). For projects in areas not mapped by FEMA, use the best available information to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site.

   Does your project occur in a floodplain?

   ☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☐ Yes

   Select the applicable floodplain using the FEMA map or the best available information:

   ☐ Floodway → *Continue to Question 3, Floodways*

☐ Coastal High Hazard Area (V Zone) → *Continue to Question 4, Coastal High Hazard Areas*

☐ 500-year floodplain (B Zone or shaded X Zone) → *Continue to Question 5, 500-year Floodplains*

☐ 100-year floodplain (A Zone) → *The 8-Step Process is required. Continue to Question 6, 8-Step Process*

3. **Floodways**

Is this a functionally dependent use?

☐ Yes

The 8-Step Process is required. Work with your HUD FEO to determine a way to satisfactorily continue with this project. Provide a completed 8-Step Process, including the early public notice and the final notice.

→*Continue to Question 6, 8-Step Process*

☐ No

Federal assistance may not be used at this location *unless a 55.12(c) exception applies.* You must either choose an alternate site or cancel the project at this location.

4. **Coastal High Hazard Area**

Is this a critical action?

☐ Yes

Critical actions are prohibited in coastal high hazard areas. Federal assistance may not be used at this location. Unless the action is excepted at 24 CFR 55.12(c), you must either choose an alternate site or cancel the project.

☐ No

Does this action include construction that is not a functionally dependent use, existing construction (including improvements), or reconstruction following destruction caused by a disaster?

☐ Yes, there is new construction.

New construction is prohibited in V Zones ((24 CFR 55.1(c)(3)).

☐ No, this action concerns only a functionally dependent use, existing construction(including improvements), or reconstruction following destruction caused by a disaster.

This construction must have met FEMA elevation and construction standards for a coastal high hazard area or other standards applicable at the time of construction.

→ *Continue to Question 6, 8-Step Process*

5. **<u>500-year Floodplain</u>**
   Is this a critical action?
   ☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☐Yes → *Continue to Question 6, 8-Step Process*

6. **<u>8-Step Process</u>.**
   Does the 8-Step Process apply? Select one of the following options:
   ☐ 8-Step Process applies.
   Provide a completed 8-Step Process, including the early public notice and the final notice.
   → *Continue to Question 7, Mitigation*

   ☐ 5-Step Process is applicable per 55.12(a)(1-3).
   Provide documentation of 5-Step Process.
   Select the applicable citation:
   - ☐ *55.12(a)(1)* HUD actions involving the disposition of HUD-acquired multifamily housing projects or "bulk sales" of HUD-acquired one- to four-family properties in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24).
   - ☐ *55.12(a)(2)* HUD's actions under the National Housing Act (12 U.S.C. 1701) for the purchase or refinancing of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, and intermediate care facilities, in communities that are in good standing under the NFIP.
   - ☐ *55.12(a)(3)* HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, intermediate care facilities, and one- to four-family properties, in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and are in good standing, provided that the number of units is not increased more than 20 percent, the action does not involve a conversion from nonresidential to residential land use, the action does not meet the thresholds for "substantial improvement" under § 55.2(b)(10), and the footprint of the structure and paved areas is not significantly increased.
   - ☐ *55.12(a)(4)* HUD's (or the recipient's) actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing nonresidential buildings and structures, in communities that are in the

Regular Program of the NFIP and are in good standing, provided that the action does not meet the thresholds for "substantial improvement" under § 55.2(b)(10) and that the footprint of the structure and paved areas is not significantly increased.

→ *Continue to Question 7, Mitigation*

☐ 8-Step Process is inapplicable per 55.12(b)(1-4).

Select the applicable citation:

☐ *55.12(b)(1)* HUD's mortgage insurance actions and other financial assistance for the purchasing, mortgaging or refinancing of existing one- to four-family properties in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24), where the action is not a critical action and the property is not located in a floodway or coastal high hazard area.

☐ *55.12(b)(2)* Financial assistance for minor repairs or improvements on one- to four-family properties that do not meet the thresholds for "substantial improvement" under § 55.2(b)(10)

☐ *55.12(b)(3)* HUD actions involving the disposition of individual HUD-acquired, one- to four-family properties.

☐ *55.12(b)(4)* HUD guarantees under the Loan Guarantee Recovery Fund Program (24 CFR part 573) of loans that refinance existing loans and mortgages, where any new construction or rehabilitation financed by the existing loan or mortgage has been completed prior to the filing of an application under the program, and the refinancing will not allow further construction or rehabilitation, nor result in any physical impacts or changes except for routine maintenance.

☐ *55.12(b)(5)* The approval of financial assistance to lease an existing structure located within the floodplain, but only if—

(i) The structure is located outside the floodway or Coastal High Hazard Area, and is in a community that is in the Regular Program of the NFIP and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24);

(ii) The project is not a critical action; and

(iii) The entire structure is or will be fully insured or insured to the maximum under the NFIP for at least the term of the lease.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

7. **Mitigation**

For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

Which of the following mitigation/minimization measures have been identified for this project in the 8-Step or 5-Step Process? Select all that apply.

- ☐ Permeable surfaces
- ☐ Natural landscape enhancements that maintain or restore natural hydrology
- ☐ Planting or restoring native plant species
- ☐ Bioswales
- ☐ Evapotranspiration
- ☐ Stormwater capture and reuse
- ☐ Green or vegetative roofs with drainage provisions
- ☐ Natural Resources Conservation Service conservation easements or similar easements
- ☐ Floodproofing of structures
- ☐ Elevating structures including freeboarding above the required base flood elevations
- ☐ Other

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

Worksheet Summary

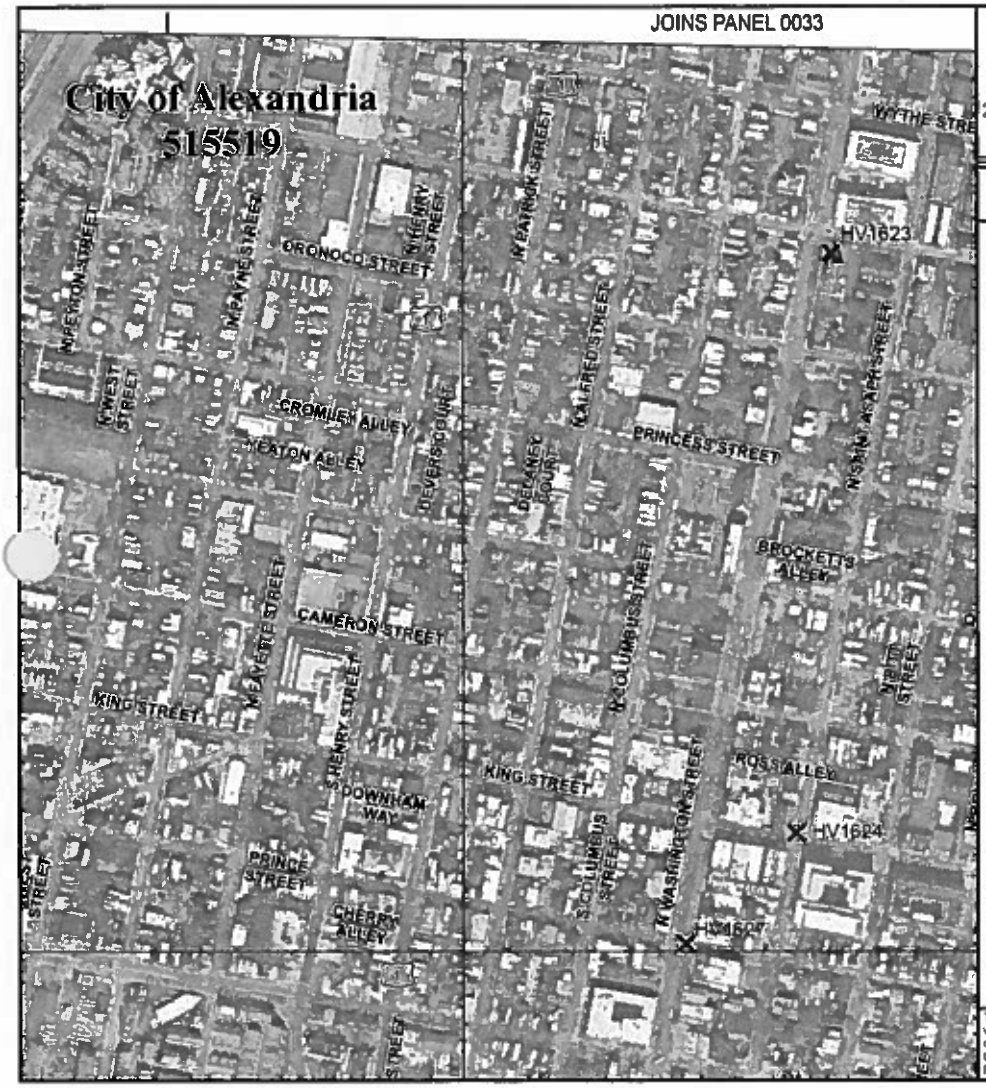
Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Are formal compliance steps or mitigation required?

- ☐ Yes
- ☐ No



MAP SCALE 1" = 600'

250 0 500 1000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0041E

FIRM

FLOOD INSURANCE RATE MAP

CITY OF ALEXANDRIA, VIRGINIA

INDEPENDENT CITY

PANEL 41 OF 45

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALEXANDRIA, CITY OF INDEPENDENT CITY	515519	0041	E

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
5155190041E

MAP REVISED
JUNE 16, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Floodplain Management

Checklist for HUD or Responsible Entity

General requirements	Legislation	Regulation
Avoid the adverse impacts associated with the occupancy and modification of floodplains. Avoid floodplain development whenever there are practicable alternatives.	Executive Order 11988, May 24 1977	24 CFR Part 55

1. Is the Project located in a floodway or a 100 or 500-year flood plain?

☐ For projects in areas mapped by FEMA, maintain the FEMA map panel that includes your project site. Make sure to include the map panel number and date. For projects in areas not mapped by FEMA, use the best information available to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site.

☒ No: STOP here. The Floodplain Management regulations do not apply. Record your determination that the project is not in a floodplain or floodway.

☐ Yes—Floodway. **STOP. The National Flood Insurance Program prohibits federal financial assistance for use in a floodway.** The only exception is for functionally dependent uses, such as a marina, a port facility, a waterfront park, a bridge or a dam. If your project is a functionally dependent use in a floodway, proceed to #3

☐ Yes—500-year flood plain (Zone B or X on FEMA maps or best information). **PROCEED to #2**

☐ Yes—100 Year flood plain (Zone A or V on FEMA maps or best information). **PROCEED to #3**

☐ Yes—Flood prone area. **PROCEED to #3**

2. For projects in the 500-year flood plain: Does your project involve a critical action, defined as an activity for which even a slight chance of flooding would be too great because it might result in loss of life, injury or property damage? Specific examples include:

- Structures or facilities that produce, use or store highly volatile, flammable, explosive, toxic or water-reactive materials.
- Structures or facilities that provide essential and irreplaceable records or utility or emergency services that may become lost or inoperative during flood and storm events (e.g., data storage centers, generating plants, principal utility lines, emergency operations centers including fire and police stations, and roadways providing sole egress from flood-prone areas).
- Structures or facilities that are likely to contain occupants who may not be sufficiently mobile to avoid loss of life or injury during flood or storm events, e.g. persons who reside in hospitals, nursing homes, convalescent homes, intermediate care facilities, board and care facilities, and retirement service centers. Housing for independent living for the elderly is not considered a critical action.

☐ No: STOP here. The project can proceed without further analysis. Record your determination and attach flood plain map and documentation that project does not involve a critical action.

☐ Yes: PROCEED to #3

3. Does your project meet one of the categories of proposed action for which the floodplain management regulations do not apply?

(Below are several common exemptions--please see 24 CFR 55.12 for additional categories of proposed action)

- Financial assistance for minor repairs or improvements on one-to-four-family properties that do not meet the thresholds for 'substantial improvement' under 55.2 (b)(8). HUD defines substantial improvement as any repair, reconstruction, modernization or improvement of a structure, the cost of which equals or exceeds 50% of the market value before the improvement (and before any damage occurred.)

- A minor amendment to a previously approved action with no additional adverse impact on or from a floodplain.
- Approval of a project site, an incidental portion of which is situated in an adjacent floodplain, but only with certain further conditions (see 24 CFR 55.12(c)(6)).
- A project on any site in a floodplain for which FEMA has issued a final Letter of Map Amendment or Letter of Map Revision that removed the property from a FEMA-designated floodplain location.
- A project on any site in a floodplain for which FEMA has issued a conditional LOMA or LOMR if the approval is subject to the requirements and conditions o f the conditional LOMA or LOMR.

☐ Yes: Stop here. Record your determination that the project is exempt from floodplain management regulations per 24 CFR 55.12. Maintain copies of all of the documents you have used to make your determination.
Please note that you may still have to maintain flood insurance on the project per the Flood Disaster Protection Act.

☐ **No: Reject Project Site or Request a Letter of Map Amendment or Revision from FEMA or Complete the 8-step decision-making process described in 24 CFR Section 55.20.** Please note that both options take time and resources. The 8-step decision-making process requires two public notice and comment periods. If you find that there are no practicable alternatives to locating the proposal in a floodplain, you must notify any private party participating in a financial transaction for the property of the hazards of the floodplain location before the execution of documents completing the transaction. (24 CFR Section 55.21)

Please note that you must maintain flood insurance on the project per the Flood Disaster Protection Act.

DISCLAIMER: This document is intended as a tool to help HUD Region X grantees and HUD staff complete environmental requirements. This document is subject to change. This is not a policy statement, and the Floodplain Executive Order and Regulations take precedence over any information found in this document.

TAB 11

HISTORIC PRESERVATION

Historic Preservation (CEST and EA)

General requirements	Legislation	Regulation
Regulations under Section 106 of the National Historic Preservation Act (NHPA) require a consultative process to identify historic properties, assess project impacts on them, and avoid, minimize, or mitigate adverse effects	Section 106 of the National Historic Preservation Act (16 U.S.C. 470f)	36 CFR 800 "Protection of Historic Properties"
References		
https://www.hudexchange.info/environmental-review/historic-preservation		

Threshold

Is Section 106 review required for your project?

☐ No, because the project consists solely of activities listed as exempt in a Programmatic Agreement (PA). (See the PA Database to find applicable PAs.)
Either provide the PA itself or a link to it here. Mark the applicable exemptions or include the text here:

→ *Continue to the Worksheet Summary.*

☐ No, because the project consists solely of activities included in a No Potential to Cause Effects memo or other determination [36 CFR 800.3(a)(1)].
Either provide the memo itself or a link to it here. Explain and justify the other determination here:

→ *Continue to the Worksheet Summary.*

☒Yes, because the project includes activities with potential to cause effects (direct or indirect). → *Continue to Step 1.*

The Section 106 Process
After determining the need to do a Section 106 review, initiate consultation with regulatory and other interested parties, identify and evaluate historic properties, assess effects of the project on properties listed on or eligible for the National Register of Historic Places, and resolve any adverse effects through project design modifications or mitigation.
Note that consultation continues through all phases of the review.
Step 1: Initiate consultation
Step 2: Identify and evaluate historic properties
Step 3: Assess effects of the project on historic properties
Step 4: Resolve any adverse effects

Step 1 - Initiate Consultation

The following parties are entitled to participate in Section 106 reviews: Advisory Council on Historic Preservation; State Historic Preservation Officers (SHPOs); federally recognized Indian tribes/Tribal Historic Preservation Officers (THPOs); Native Hawaiian Organizations (NHOs); local governments; and project grantees. The general public and individuals and organizations with a demonstrated interest in a project may participate as consulting parties at the discretion of the RE or HUD official. Participation varies with the nature and scope of a project. Refer to HUD's website for guidance on consultation, including the required timeframes for response. Consultation should begin early to enable full consideration of preservation options.

Use the When To Consult With Tribes checklist within Notice CPD-12-006: Process for Tribal Consultation to determine if you should invite tribes to consult on a particular project. Use the Tribal Directory Assessment Tool (TDAT) to identify tribes that may have an interest in the area where the project is located. Note that consultants may not initiate consultation with Tribes.

Select all consulting parties below (check all that apply):

☒State Historic Preservation Officer (SHPO)
☐Advisory Council on Historic Preservation
☒Indian Tribes, including Tribal Historic Preservation Officers (THPOs) or Native
☐Hawaiian Organizations (NHOs)

List all tribes that were consulted here and their status of consultation:

Eastern Band of Cherokee Indians
Mattaponi
Pamunkey
Each of the above tribes and tribal representatives were notified in writing by way of individual letters dated March 18, 2016. There have been three Section 106 meetings. None of the tribes or contact persons have responded or attended any of the Section 106 meetings to date.

☒Other Consulting Parties

List all consulting parties that were consulted here and their status of consultation:

Describe the process of selecting consulting parties and initiating consultation here:

Please refer to the attached list to identify consulting parties. The lists includes Historic Preservation Groups, Civic Associations, Housing Advocates, adjacent property owners, Native American Tribes. These groups were selected from those impacted by the project, those who live in the vicinity of the proposed project, and those who which to participate in evaluating any mitigating effects.

Provide all correspondence, notices, and notes (including comments and objections received) and continue to Step 2.

Step 2 - Identify and Evaluate Historic Properties

Define the Area of Potential Effect (APE), either by entering the address(es) or providing a map depicting the APE. Attach an additional page if necessary.

699 North Patrick Street, Alexandria, VA 22314
It is anticipated that direct effects will remain onsite due to the open space and parking available. If offsite utility work is required, Thunderbird will consult with Alexandria Archaeology and DHR on modifications to the direct APE. Three 18th century archeological resources have been previously surveyed within the direct APE, including a military facility (44AX0160) and two temporary military campsites, Site 44AX0208-0001 (000-9800-0149) and Site 44AX0208-0002 (000-9800-0127).

Gather information about known historic properties in the APE. Historic buildings, districts and archeological sites may have been identified in local, state, and national surveys and registers, local historic districts, municipal plans, town and county histories, and local history websites. If not already listed on the National Register of Historic Places, identified properties are then evaluated to see if they are eligible for the National Register.
Refer to HUD's website for guidance on identifying and evaluating historic properties.

In the space below, list historic properties identified and evaluated in the APE.
Every historic property that may be affected by the project should be listed. For each historic property or district, include the National Register status, whether the SHPO has concurred with the finding, and whether information on the site is sensitive. Attach an additional page if necessary.

On January 5, 2017, the Virginia Department of Natural Resources forwarded a letter informing ARHA and its consultant that a portion of the site should be treated as eligible for listing on the NRHP for the purposes of Section 106 compliance. In addition the SHPO found the complex individually eligible for NRHP listing at the local level under Criteria A and C in the areas of Ethnic Heritage, Social History, Politics/Government, and Architecture with a period of significance from 1942 to 1966

Provide the documentation (survey forms, Register nominations, concurrence(s) and/or objection(s), notes, and photos) that justify your National Register Status determination.

Was a survey of historic buildings and/or archeological sites done as part of the project?
If the APE contains previously unsurveyed buildings or structures over 50 years old, or there is a likely presence of previously unsurveyed archeological sites, a survey may be necessary. For Archeological surveys, refer to HP Fact Sheet #6, Guidance on Archeological Investigations in HUD Projects.

☒ Yes → *Provide survey(s) and report(s) and continue to Step 3.*
Additional notes:

See attached Survey

☐ No → *Continue to Step 3.*

Step 3 - Assess Effects of the Project on Historic Properties

Only properties that are listed on or eligible for the National Register of Historic Places receive further consideration under Section 106. Assess the effect(s) of the project by applying the Criteria of Adverse Effect. (36 CFR 800.5)] Consider direct and indirect effects as applicable as per HUD guidance.

Choose one of the findings below - No Historic Properties Affected, No Adverse Effect, or Adverse Effect; and seek concurrence from consulting parties.

☐ No Historic Properties Affected
Document reason for finding:

☐ No historic properties present. → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

☐ Historic properties present, but project will have no effect upon them. → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

If consulting parties concur or fail to respond to user's request for concurrence, project is in compliance with this section. No further review is required. If consulting

parties object, refer to (36 CFR 800.4(d)(1)) and consult further to try to resolve objection(s).

☐ No Adverse Effect

Document reason for finding:

Does the No Adverse Effect finding contain conditions?

☐ Yes

Check all that apply: (check all that apply)

☐ Avoidance

☐ Modification of project

☐ Other

Describe conditions here:

→ *Monitor satisfactory implementation of conditions. Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

☐ No → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

If consulting parties concur or fail to respond to user's request for concurrence, project is in compliance with this section. No further review is required. If consulting parties object, refer to (36 CFR 800.5(c)(2)) and consult further to try to resolve objection(s).

☒ Adverse Effect

Document reason for finding:

Copy and paste applicable Criteria into text box with summary and justification.

Criteria of Adverse Effect: 36 CFR 800.5]

The adverse effect on historic properties must be resolved through the development of a mitigation plan and Memorandum of Agreement. Clearly, effects to archaeological site 44AX0160 can be mitigated through data recovery and archaeological monitoring and we support this approach. Given the historical complexities of the property, appropriate mitigation for the adverse effects to the Ramsey Homes and Uptown/Parker-Gray Historic District is not as clear cut. It is the opinion of the SHPO, that appropriate mitigation should not only recognize and commemorate the African-American history of the site, but also further the continued study and educational dissemination of historical information about the property.

Notify the Advisory Council on Historic Preservation of the Adverse Effect and provide the documentation outlined in 36 CFR 800.11(e). The Council has 15 days to decide whether to enter the consultation (Not required for projects covered by a Programmatic Agreement).

→ *Continue to Step 4.*

Step 4 - Resolve Adverse Effects

Work with consulting parties to try to avoid, minimize or mitigate adverse effects. Refer to HUD guidance and 36 CFR 800.6 and 800.7.

Were the Adverse Effects resolved?

☒ Yes

Describe the resolution of Adverse Effects, including consultation efforts and participation by the Advisory Council on Historic Preservation:

The negotiated Memorandum of Agreement is provided as evidence of the agreed mitigation to be taken.

For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

Please see a copy of the signed MOA.

→ *Provide signed Memorandum of Agreement (MOA) or Standard Mitigation Measures Agreement (SMMA). Continue to the Worksheet Summary.*

☐ No

The project must be cancelled unless the "Head of Agency" approves it. Either provide approval from the "Head of Agency" or cancel the project at this location.

Describe the failure to resolve Adverse Effects, including consultation efforts and participation by the Advisory Council on Historic Preservation and "Head of the Agency":

Explain in detail the exact conditions or measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Provide correspondence, comments, documentation of decision, and "Head of Agency" approval. Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Are formal compliance steps or mitigation required?

☒ Yes

☐ No

COMMONWEALTH of VIRGINIA

Molly Joseph Ward
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
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January 5, 2017

Mr. Boyd Sipe, M.A., RPA
Thunderbird Archeology
5300 Wellington Branch Drive, Suite 100
Gainesville, VA 20155

Re: Ramsey Homes
City of Alexandria, VA
DHR File No. 2015-0558

Dear Mr. Sipe:

We have received for review and comment several documents in support of the project referenced above. The project, as presented, involves the demolition of four (4) existing apartment buildings and the construction of new multi-family housing. Our comments are provided as assistance to the City of Alexandria in meeting its delegated responsibilities under Section 106 of the National Historic Preservation Act.

As you are aware, the Ramsey Homes are considered contributing resources to the Uptown/Parker-Gray Historic District (DHR ID #100-0133), which is listed in the National Register of Historic Places (NRHP). As such, the subject buildings are historic properties for the purposes of compliance with Section 106. Their demolition would, by definition, constitute adverse effect on historic properties.

We appreciate your October 31, 2016 response to our April 18, 2016 comments and accept the proposed Area of Potential Effects and list of consulting parties. Further, we acknowledge the City's exploration of alternatives that could avoid or minimize impacts to historic properties. Finally, we find that the proposed re-development plan adequately takes into consideration its historic setting.

Based on the information provided in the documents prepared by Thunderbird Archeology for the Ramsey Homes project entitled *Documentary Study and Archeological Resource Assessment*, *Archaeological Evaluation (Phase I/II Archeological Investigations)*, and *Historic American Building Survey*, we provide the following recommendations:

1. The portion of archaeological site **44AX0160** that extends into the project area should be *treated as eligible* for listing in the NRHP for the purposes of Section 106 compliance; however, DHR cannot formally evaluate the NRHP-eligibility of site 44AX0160 because the site boundary has not been

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962 Kime Lane
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Tel: (540) 387-5443
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Stephens City, VA 22655
Tel: (540) 868-7029
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fully delineated nor has the archaeological integrity and research potential of the portion of the site outside the project area been fully assessed.

2. On December 22, 2016, DHR's National Register Evaluation Committee met to consider the NRHP-eligibility of the Ramsey Homes complex (DHR ID #**100-0133-0745**, **0747**, **0749**, **0751**, **0754**, **0948**, and **1328**) and found the complex individually *eligible* for NRHP listing at the local level under Criteria A and C in the areas of Ethnic Heritage, Social History, Politics/Government, and Architecture with a period of significance from 1942 to 1966.

As discussed at our November 29, 2016 consulting parties meeting, the adverse effect on historic properties must be resolved through the development of a mitigation plan and Memorandum of Agreement. Clearly, effects to archaeological site 44AX0160 can be mitigated through data recovery and archaeological monitoring and we support this approach. Given the historical complexities of the property, appropriate mitigation for the adverse effects to the Ramsey Homes and Uptown/Parker-Gray Historic District is not as clear cut. It is our opinion that appropriate mitigation should not only recognize and commemorate the African-American history of the site, but also further the continued study and educational dissemination of historical information about the property. It seems to us that the adjacent Alexandria Black History Museum would be a logical partner in these efforts. Also, DHR's Evaluation Committee recognized the engineering significance of the Ramsey Homes and further study and documentation of the "Fabcrete" used in their construction would add to our understanding of this innovative product. Finally, as this project is part of a larger city-wide effort to address low-income housing needs and demolition of other public housing complexes is under consideration, mitigation could include a NRHP Multiple Property Documentation (MPD) Form or comprehensive historic context for government housing in Alexandria, which would provide a basis for evaluating the historic significance of other public housing in the city.

We look forward to working with the City and other consulting parties to develop a mitigation plan and agreement for this project. If you have any questions regarding these comments, please do not hesitate to contact me at roger.kirchen@dhr.virginia.gov.

Sincerely,

Roger W. Kirchen, Director
Review and Compliance Division

MEMORANDUM

To: Roger Kirchen
cc: Leroy Battle; Eric Keeler; Connie Staudinger; Al Cox; Consulting Parties
From: Boyd Sipe
Re: Ramsey Homes, City of Alexandria Section 106 Consultation (DHR Project No. 2015-0558)
Date: September 30, 2016

Thunderbird Archeology (Thunderbird), a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia is assisting the Alexandra Housing and Redevelopment Authority (ARHA) of Alexandria, Virginia, Ramsey Homes, LP of Alexandria, Virginia, and the City of Alexandria Office of Housing with review of the proposed Ramsey Homes redevelopment project under Section 106 of the National Historic Preservation Act.

In advance of the initiation of Section 106 review for the site, Thunderbird conducted several cultural resources studies pursuant to meeting local agency requirements. Thunderbird prepared Ramsey Homes, City of Alexandria, Virginia Historic Context and Significance Statement in June 2015. Said report was submitted to the Parker-Gray District Board of Architectural Review and City Council. Thunderbird prepared a Historic American Buildings Survey (HABS) of Ramsey Homes (Enclosure 1) and submitted this documentation to the National Park Service Heritage Documentation Programs of Washington, D.C., the Alexandria Black History Museum of Alexandria, Virginia, and the Kate Waller Barrett Branch Library of Alexandria, Virginia in December 2015. A copy of the HABS document is enclosed. Thunderbird also prepared a Documentary Study and Archeological Resource Assessment for Alexandria Archaeology. Said report recommended that a Phase I/II archeological investigation (*Archaeological Evaluation*) be conducted of the site; these investigations were conducted. Two printed copies of the Documentary Study and Archeological Resource Assessment and two copies of the Phase I/II archeological investigation (*Archaeological Evaluation*) report are enclosed (Enclosures 2 and 3).

On behalf of the City of Alexandria Office of Housing, Thunderbird formally initiated Section 106 coordination by contacting the Virginia Department of Historic Resources (VA SHPO) and the owner (ARHA) on February 9, 2016. On this same date, Thunderbird invited fourteen (14) local, state, and national governmental agencies and non-governmental groups to participate in the Section 106 process as consulting parties. On March 1, 2016, the VA SHPO requested additional information and completion of a project review form for the project, including contacts and general project information, HUD involvement, project description, current and past land use, proposed redevelopment plans, proposed Area of Potential Effect (APE), previously identified cultural resources, and methods for identifying consulting parties and seeking public involvement. Thunderbird completed the review form, which was accepted by the VA SHPO on March 18, 2016.

On April 18, 2016, Amanda Lee in the Division of Review and Compliance at the VA SHPO responded requesting additional materials to make an informed decision about the undertaking. Copies of Ms. Lee's response were provided to the client and consulting parties on May 18, 2016. On May 24, 2016, the VA SHPO indicated that Amanda Lee is on extended leave. The DHR staff member now assigned to this project is Mr. Roger Kirchen, whose contact information is contained on the contact list

on the following page. Following additional work by ARHA, this memo is in response to DHR's requests, which are italicized below.

Federal Agency

Please provide contact information for the appropriate staff member at the City of Alexandria Office of Housing, Virginia Housing Development LLC of Alexandria and ARHA responsible for this undertaking and the associated Section 106 consultation.

See Enclosure 4 for Contact List.

Consulting Parties

In your most recent submission to DHR, you note a number of groups and organizations that you contacted and requested if they would like to participate in consultation regarding this undertaking. Please provide a list of the entities that requested to consult as well as their contact information.

As requested by ARHA, the VA SHPO, the City of Alexandria Office of Housing, and other consulting parties, on March 18, 2016, Thunderbird invited additional entities and individuals to consult on the project including: The Mataponi Indian Tribe, the Pamunkey Indian Tribe, Eastern Band of Cherokee Indians, National Public Housing Museum, the Parker-Gray District Board of Architectural Review, fifteen (15) residents of the Ramsey Homes, and the owners of fifty-six properties located in the close vicinity of the project site. Thunderbird also sent follow-up letters to all of the agencies and groups that failed to respond to the initial invitation letters on March 18, 2016. On May 3, 2016, Thunderbird invited an additional 32 consulting parties at the request of current consulting parties.

See Enclosure 4 for Contact List.

Photographs

The photographs you provided did not accurately convey the project site and adjacent resources. Please provide photographs that document the existing conditions at Ramsey Homes including all elevations (sides) of the buildings as well as the setting, landscape, and association with each other and adjacent properties. Provide streetscape photographs of the adjacent properties. Place no more than two (2) photographs per page and include a caption that notes the direction in which the photographer was looking and what was viewed. Key the photographs to a site plan or map of the project area.

Please see the enclosed HABS documentation and Documentary Study for further description of the buildings and their setting. Enclosure 5 includes exhibits prepared by the architect showing streetscapes and photographs taken by Thunderbird Archeology to illustrate the existing conditions of the site and neighborhood context. The captions refer to Buildings I-IV based on labels originally used by the architect in 1942 and corresponding to the following addresses and DHR numbers:

Building I.	912 and 914 Wythe Street (DHR No. 100-0133-1328)
	625 and 627 Patrick Street (DHR No. 100-0133-0754)
Building II.	619, 621, and 623 Patrick Street (DHR No. 100-0133-0751)
Building III.	609 and 611 Patrick Street (DHR No. 100-0133-0747)
	613 and 615 Patrick Street (DHR No. 100-0133-0749)
Building IV.	605 and 607 Patrick Street (DHR No. 100-0133-0745)
	913 and 915 Pendleton Street (DHR No. 100-0133-0948)

Area of Potential Effect

You are proposing the APE for direct effects to be the development parcel. Have you considered the placement of equipment and/or supplies for the proposed demolition and redevelopment into the APE for direct effects? Provide a map of the proposed APE for direct effects as created in DHR's Virginia Cultural Resources Information System (VCRIS). Note all resources previously identified in the proposed APE for direct effects. DHR would like to refine the mapping of the APE for indirect effects. Provide a map of the proposed APE for indirect effects as created in VCRIS. Note all previously identified NRHP-listed or eligible resources within the APE for indirect effects.

It is anticipated that direct effects will remain onsite due to the open space and parking available. If offsite utility work is required, Thunderbird will consult with Alexandria Archaeology and DHR on modifications to the direct APE. Three 18th century archeological resources have been previously surveyed within the direct APE, including a military facility (44AX0160) and two temporary military campsites, Site 44AX0208-0001 (000-9800-0149) and Site 44AX0208-0002 (000-9800-0127).

Four architectural resources and one historic district are directly affected by the project. As indicated above, the four buildings were recorded as seven contributing resources when surveyed for the Uptown/Parker-Gray Historic District NRHP nomination.

Within the potential APE for indirect effects up to a one-mile radius, there are over 1,000 resources recorded in V-CRIS associated with four NRHP historic districts and two Multiple Property Documentations (MPD). Alexandria Historic District (100-0121) contains 92 resources; Uptown/Parker-Gray Historic District (100-0133) contains 574 resources; Del Ray/Town of Potomac Historic District (100-0136) contains 115 resources; and Rosemont Historic District (100-137) contains 214 resources. Six resources are listed under the Colonial Revival Apartment Complexes of Alexandria (100-5266). Seven resources are listed under the African-American Historic Resources of Alexandria MPD (100-5015).

In addition, 288 individual resources were previously surveyed, but have not been evaluated by the DHR; three resources have been determined eligible; six are designated National Historic Landmarks (NHL); 13 are listed on the NRHP and VLR; and one is listed only on the VLR. Due to the number of resources and the ongoing survey of properties in Alexandria, a complete table was not included. The APE for direct effects and indirect effects as generated in V-CRIS is included in Enclosure 6. We have

proposed that the APE for indirect effects be limited to the Uptown/Parker-Gray Historic District (100-0133).

Exploration of Alternatives

Given that demolition of an historic property is an automatic adverse effect, what alternatives other than demolition and redevelopment were explored? When describing the alternatives please identify them as "A,B,C" or "1,2,3" for ease of discussion. If cost was a factor, provide a cost analysis. What is the existing number of "affordable housing" units at Ramsey Homes, and what is the proposed number of "affordable housing" units in the proposed redevelopment?

The following is a timeline of milestones in the process of developing concept plans and alternatives, which are included in Enclosure 7:

September 9, 2014	ARHA and City staff hold a kick-off meeting
February 25, 2015	BAR Work Session 1 with Concept Stage 1
March 3, 2015	BAR Submission of Concept Stage 2
April 22, 2015	BAR Work Session 2. The BAR denied the request for a Permit to Demolish by a vote of 5-0. The BAR denial was based on the finding that "demolition of Ramsey Homes would be detrimental to the public interest because the buildings were representative of African American wartime housing and contributed to our understanding of that history in the middle of the 20th Century".
April 29, 2015	ARHA appealed the decision of the Parker-Gray District Board of Architectural Review's denial of a Permit to Demolish the four (4) Ramsey Homes buildings to the City Council.
June 8, 2015	Submission of Development Special Use Permit (DSUP) Combined Concept Stage 1 and 2
June 25, 2015	City Issues Comments on DSUP Combined Concept Stage 1 and 2
July 17, 2015	DSUP Submission for Completeness Review
August 7, 2015	City Issues Comments on Completeness Review
August 21, 2015	DSUP Submission of Preliminary Plan
September 12, 2015	City Council hears appeal of BAR denial of Permit to Demolish and overturns BAR decision.

November 25, 2015	City staff concluded that creating development alternatives is not an application completeness issue, and therefore, the application was technically complete, subject to some additional comments.
January 21, 2016	ARHA presented five alternative options and cost analysis (see Enclosure 7). ARHA drafted a cost analysis of five alternatives prior to final demolition approval by City Council and additional work with the BAR on the preferred demolition alternative. Alternative options 1 and 2 proposed rehabilitation of two buildings and do not qualify for Low Income Housing Tax Credits (LIHTC). Options 3 and 4 show one building rehabilitated and does not include as many units as the preferred option. All alternatives would require ARHA to make significant land and developer fee contributions with not enough income potential to repay ARHA. In all scenarios, the current occupants of the Ramsey Homes have the first right to return to the new units and the site specific waiting list will have a preference for income-qualified city employees, including police officers, fire fighters, school teachers, chefs, and retail employees.
February 04, 2016	Planning Commission votes to approve Master Plan Amendment #2015-0003 and Rezoning #2015-0003 but denies the Development Special Use Permit (the "DSUP") #2014-0035 and the Transportation Management Plan SUP #2015-0081.
March 8, 2016	ARHA approves Resolution 613 whereby agreeing to adopt a Joint City-ARHA Work Plan for Ramsey Homes (the "Work Plan"), that would guide the efforts of the joint staffs in analyzing other concepts and permutations of those concepts for the redevelopment, which would construct some number of new units that would be competitive for tax credits and be sustainable operationally and which considered the preservation of one or more of the existing buildings.
March 12, 2016	City Council votes to approve Master Plan Amendment #2015-0003 and Rezoning #2015-0003 but deferred the DSUP as requested in a letter dated February 16, 2016 to the Mayor and Members of Council, from counsel for ARHA, asking that Council defer action back to the Planning Commission to allow all stakeholders the time to explore other economically viable redevelopment schemes for the Ramsey Homes site. City Council additionally approve Resolution 2713 adopting the Joint City-ARHA Work Plan adopted by ARHA on March 8, 2016.
April 14, 2016	Joint Work Group Meeting. Group is comprised of Vice Mayor Wilson, Councilman Chapman, Planning Chairwoman Mary Lyman, the ARHA Chairman and Vice Chairwoman.

May 19, 2016	Joint Work Group Meeting
May 26, 2016	Ramsey Homes Community Meeting
June 9, 2016	Joint Work Group Meeting
June 28, 2016	City Council recommends the Alternate Concept with permutations that would remove the requirement to preserve a building, so demolish all four of the structures, and shift the new construction building from its current location north to the Wythe Street end of the parcel, uniting the majority of the open space at the Pendleton Street or south end of the parcel. Additionally, the program was scrutinized for efficiencies and unit sizes reduced. With this action, the mass and size of the building are set.
July 7, 2016	Submission of Joint Work Group Preferred Concept to BAR
July 14, 2016	Joint Work Group Meeting
July 22, 2016	Submission of Joint Work Group Concept 2 to BAR
July 27, 2016	BAR Work Session 4. ARHA presents the city endorsed concept with the open space permutation that was approved by the Council on June 28, 2016. This concept consists of a single 52-unit, 3/4-story split, building that represents a true expression of contemporary multi-family architecture.
August 26, 2016	Preliminary Plan Completeness and BAR Submissions
September 14, 2016	BAR Work Session 5

Site Plan

Provide a site plan (24" x 36" preferred) of the existing conditions and a site plan of the proposed redevelopment.

Enclosure 8 includes an existing conditions site plan dated July 7, 2016. Enclosure 9 includes the most recent proposed site plan dated August 26, 2016 as well as proposed elevations discussed below.

Design

How is the proposed new construction in-keeping with the (NRHP)-listed Parker-Gray Historic District (DHR ID# 100-0133) and appropriate infill? Provide the most recent elevation plans (24" x 36" preferred) of the proposed redevelopment noting materials to be used.

Enclosure 9 includes the Joint Work Group Preferred Concept Site Plans, Elevations, Perspectives, and Details from August 2016. For an interactive timeline of the evolution of the design, including interior floor plans, from September 2014 to September 2016, please visit the website of the Virginia Housing Development LLC:
http://www.vhdllc.us/evolution-of-design.html

The Parker-Gray Historic District BAR accepted the scale, mass and general location on the site that was selected by City Council. The July 27, 2016 discussion was primarily about architectural character in the context of the historic district. The below represent a summary of the comments from the BAR members and our proposed solutions.

Comment 1: Make the building entrances prominent and inviting architectural focal points.

Response 1: The main building entry has been relocated to the center of the courtyard. Increasing the door size and adding sidelights increases the amount of glazing, making the main building entry the center focal point on this courtyard elevation. Similar building materials are used on the adjacent courtyard to balance the overall elevation. A large canopy above the main entry doors along with the revised landscape design creates a patio space that provides a transition between North Patrick and the residential building. Applicant has worked with staff to design a pergola feature highlighting the side entries along Wythe Street and Pendleton Street. Fenestrations and building materials were also studied and revised to enhance the prominence of the side building entries.

Comment 2: Set the building back 10' to 15' farther from Wythe Street and provide porches or pergolas at ground level to create a gathering space and an architectural dialogue with the recreation center and museum buildings.

Response 2: The building has been further shifted to the south to be 34 feet from the face of curb along Wythe Street and 11 feet south from the front face of the Watson Reading Room. In its current position the Watson Reading Room by in its civic use is afforded more prominence. The pergolas are a one story feature that serves to provide a connection to the lower Watson Reading Room structures on Wythe Street and the residential scale townhomes on Pendleton Street. The areas also feature benches to encourage informal, short-term gathering.

Comment 3: Restudy the overall building composition, particularly the size, shape, color and grouping of the fenestration. Consider corner windows.

Response 3: Fenestration types and sizes have been redesigned to clearly differentiate between the foreground and background elements along the elevations as well as articulate the distinction between the lower and upper floors providing additional depth, detailing and visual interest. This redesign includes the additional Juliette balconies along the second floor. Building materials and colors have been revised and simplified to create a composition of hierarchy between the building elements. The paneling at the building corners along with the sun shades that wrapped the corner have been removed and replaced with brick to simplify the corner elements.

Comment 4: Restudy and enhance the canopies over the windows and particularly around the entrances.

Response 4: Canopies over windows and the main entry canopy have progressed to a louver sun shade design. The canopy above the main building entry will be steel and glass to provide coverage for the tenants without blocking natural light from the adjacent unit windows. Entry canopies along Wythe and Pendleton Street have progressed to be integrated with the pergolas on each side. A portion of these pergolas will also have glass to provide coverage at the entry doors.

Comment 5: Enhance the depth of the balconies, either inset or projecting, and the design of the railings.

Response 5: Balconies have been enhanced by widening the inset and using the darker siding/panel color to recess the Juliette balconies from the brick plane. Projecting the bottom of the balcony out from the face of the building further enhances the depth.

Comment 6: Study patterns and textures for the wall surfaces. Consider accent colors for details and brick bands.

Response 6: Patterns on the elevations have been improved and clearly articulated with the redesign of the fenestrations and materials. The use of materials such as metal panel, split face block, and molded brick are going through a cost analysis and would provide additional texture to the elevation if feasible.

Comment 7: Study the additional use of brick and other durable wall materials besides fiber cement panels. Use secondary materials in the recessed bays and at higher elevations.

Response 7: Additional brick has been added at the lower levels and corners to improve the wear of the materials that are at the lower level and therefore most vulnerable to excessive use. Siding and panel colors have been selected to differentiate the 4th story and insets from the siding / panels between windows, around the Juliette balconies and around the main building entries.

Comment 8: Reduce the floor-to-floor height and eliminate the parapets to reduce the building’s scale.

Response 8: The ceiling heights are maintained at the 9-foot floor to ceiling height to be consistent with prevailing market standards for multi-family residential construction. In addition, per direction from

Director Moritz at the ARHA Redevelopment Work Group meeting of 8/18/2016; 9'-0" ceiling heights are typical in residential rentals and, therefore the ceiling heights will not be reduced.

Comment 9: Group the rooftop mechanical equipment in the center of the fourth floor roof so that the rooftop mechanical screening may be minimized or eliminated.

Response 9: The mechanical units are grouped in the center of the rooftop to assist in limiting visibility from the ground elevation. The parapets cannot be reduced as they are set at the minimum required for the sloped insulation at its densest point. Roof Plan will be provided to demonstrate.

The Project includes the removal of all existing improvements and the construction of a total of fifty-two (52) rental units in one (1), 3-4 story building. The parking will be accommodated below grade in a structured parking facility. The number of parking spaces required under the recently adopted Parking Standards for Multi-Family Buildings is 26, this Project exceeds those standards at 32 spaces therefore a parking reduction SUP will not be required.

The development team has worked closely with city staff to develop the Project size, massing, height and architectural character so as to achieve compatibility with the historic Parker-Gray District and to have a competitive tax credit application. The multi-family buildings have been skillfully designed in a contemporary vernacular of architecture; 3 to 4 stories in height. The proposed Project additionally complies with the fundamental intent and height envisioned by the Braddock East Master Plan (BEMP) by providing shoulders at the Wythe, Pendleton and Patrick Street faces of the building; effectively dropping the height to 3-stories where the Project addresses the adjacent, smaller scale and townhouse neighbors. The recent inclusion of single story height pergolas at Wythe Street and Pendleton Street further serve to provide a connection to the lower Watson Reading Room structures on Wythe and the residential scale townhomes on Pendleton Streets. The areas also feature benches to encourage informal, short-term gathering.

The 3-4 story configuration and the relationship of height and width being proposed reflects the prevailing pattern along the block-face. The development proposal is for structures that are not higher than 45 feet per the BEMP. The height is also consistent with the BEMP in that it recognizes the suggestion that new buildings should be generally no more than one-story higher than adjacent buildings by incorporating the suggested shoulders. The team has studied color and materials and will continue to work with staff in order to transition the 4-story height in a manner that is sensitive to the context of the adjacent properties.

Wythe Street is noted in the Braddock Metro Neighborhood Plan as a "walking" street (between West and Washington), and was therefore being treated as such by providing a generous street level setback from the curb to the face of the building. In this current submission, pursuant to a BAR comment, the building has been pushed further to the south to accommodate the 8'-0" pergola. The building has been further shifted to the south to be 34 feet from the face of curb along Wythe Street and 11 feet south from

the front face of the Watson Reading Room and that the Watson Reading Room can be viewed by pedestrian traffic on Patrick Street.

The proposed is considerate of a majority of the recommendations and balances the need for open space (increased to 35%), parking (required 26, proposed 32), setbacks and financially viability. A generous green edge has been provided along all street edges and gathering spaces are incorporated at all entrances. The entrances are more prominent and the gathering spaces are inviting. The North Patrick Street elevation includes two courtyards and Pendleton Street sets back almost 100 feet creating a beautiful open lawn area.

The building has its main lobby off of the North Patrick Street face which will help bring a human and pedestrian scale to the building and engage the street. The expansive lawn at the south end of the parcel will provide a safe area for children and families to gather and play. The vocabulary is urban and contemporary in style, with clean lines and simple geometry. There are indentations that become natural transition points for material breaks. With this submission there are less materials with one brick and two cementitious siding/panel colors and the balconies have been studied in depth.

The interior of the buildings will function as multifamily rental units. Six of the units will be constructed as Accessible (as defined in the code) for individuals with special needs, meaning that all required accessibility features are present at first occupancy. The remaining units will be designed to meet Type B units, consistent with the design and construction requirements of the American National Standards Institute (ANSI) and federal Fair Housing Act. A Type B unit is constructed to an adaptable level of accessibility than an Accessible unit, geared more toward persons with lesser mobility impairments. In order to accommodate the Accessible units, there are two accessible parking spaces in the parking garage and elevator access on the garage level with stops on each of the four floors so that the amenities for the accessible units are identical to the other units.

Ground Disturbance

You note that details regarding potential disturbances are not presently available; however, it is anticipated that disturbance will occur in the range of 10-to-15 feet deep on 85% of the property and potentially deeper where the underground parking is proposed. Provide more information regarding ground disturbance as it is available. How will any previously identified archaeological resources within the project area be managed?

For further detail, please find attached a Documentary Study and Archeological Assessment prepared for City of Alexandria Archaeology for the site as part of the local government land use review process. The Archeological assessment includes a scope of work for Archeological Evaluation (Phase I/II archeological investigations) of the site. Phase I/II archeological investigations, conducted in accordance with the scope approved by Alexandria Archaeology, have been completed and documented in a report provided to the DHR and consulting parties.

Comments or questions regarding this memorandum may be addressed to:

Boyd Sipe, M.A., RPA
Manager – Archeology
Thunderbird Archeology a Division of Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive, Suite 100 Gainesville, VA 20155
o: 703.679.5623
m: 703.307.6951
bsipe@wetlandstudies.com

Sincerely,

Boyd Sipe, M.A., RPA
Manager – Archeology

Enclosures:

1. Historic American Buildings Survey (HABS) Documentation
2. April 2016 (Revised September 2016) Documentary Study and Archeological Resource Assessment
3. September 2016 Phase I/II Archeological Investigation (*Archaeological Evaluation*)
4. Agency and Consulting Parties Contact List
5. Exhibits and Photographs of Resources and Neighborhood Context
6. Area of Potential Effects Generated in V-CRIS
7. January 21, 2016 ARHA Alternative Options Design and Cost Analysis
8. Existing Conditions Site Plan
9. Joint Work Group Preferred Concept Site Plans, Elevations, Perspectives, and Details

ENCLOSURE 1

DHR Project No. 2015-0558

Historic American Buildings Survey (HABS) Documentation

Ramsey Homes

City of Alexandria, Virginia

WSSI #22386.02

Historic American Building Survey

December 2015

Prepared for:
Ramsey Homes, LP
401 Wythe St.
Alexandria, VA 22314

Prepared by:

Anna Maas, MUEP, David Carroll, M.A., RPA, and Boyd Sipe, M.A., RPA

Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.®

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Gainesville, Virginia 20155
Tel: 703-679-5600 Email: contactus@wetlandstudies.com
www.wetlandstudies.com

RAMSEY HOMES
(Buildings I-IV)
(Lanham Act Alexandria Defense Housing Project VA-44133)
East side of the 600 block of North Patrick Street
Alexandria
Independent City
Virginia

HABS VA-1511
HABS VA-1511

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN BUILDINGS SURVEY
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

Photographer: Bill Lebovich August 2015

VA-1511-1 ALLEY EAST OF BUILDINGS, SHOWING SOUTH AND EAST ELEVATIONS OF BUILDINGS I THROUGH IV, LOOKING NORTH.

VA-1511-2 LAWN BETWEEN BUILDINGS I AND II, LOOKING EAST.

VA-1511-3 EAST LAWN OF BUILDINGS III AND IV, LOOKING SOUTHEAST.

VA-1511-4 SOUTH AND EAST ELEVATIONS OF BUILDING I, LOOKING NORTHWEST.

VA-1511-5 EAST AND NORTH ELEVATIONS OF BUILDING I, LOOKING SOUTHWEST.

VA-1511-6 STREETSCAPE WITH NORTH AND WEST ELEVATIONS OF BUILDING I IN FOREGROUND, LOOKING SOUTH.

VA-1511-7 SOUTH AND WEST ELEVATIONS OF BUILDING I, LOOKING NORTHEAST.

VA-1511-8 SOUTH AND EAST ELEVATIONS OF BUILDING II, LOOKING NORTHWEST.

VA-1511-9 SOUTH AND EAST ELEVATIONS OF BUILDING II, LOOKING NORTHWEST.

VA-1511-10 EAST ELEVATION OF BUILDING II, LOOKING WEST.

VA-1511-11 NORTH AND EAST ELEVATIONS OF BUILDING II, LOOKING SOUTHWEST.

VA-1511-12 ENTRANCE BAYS ON NORTH ELEVATION OF BUILDING II, LOOKING SOUTH.

VA-1511-13 NORTH AND WEST ELEVATIONS OF BUILDING II, LOOKING SOUTHEAST.

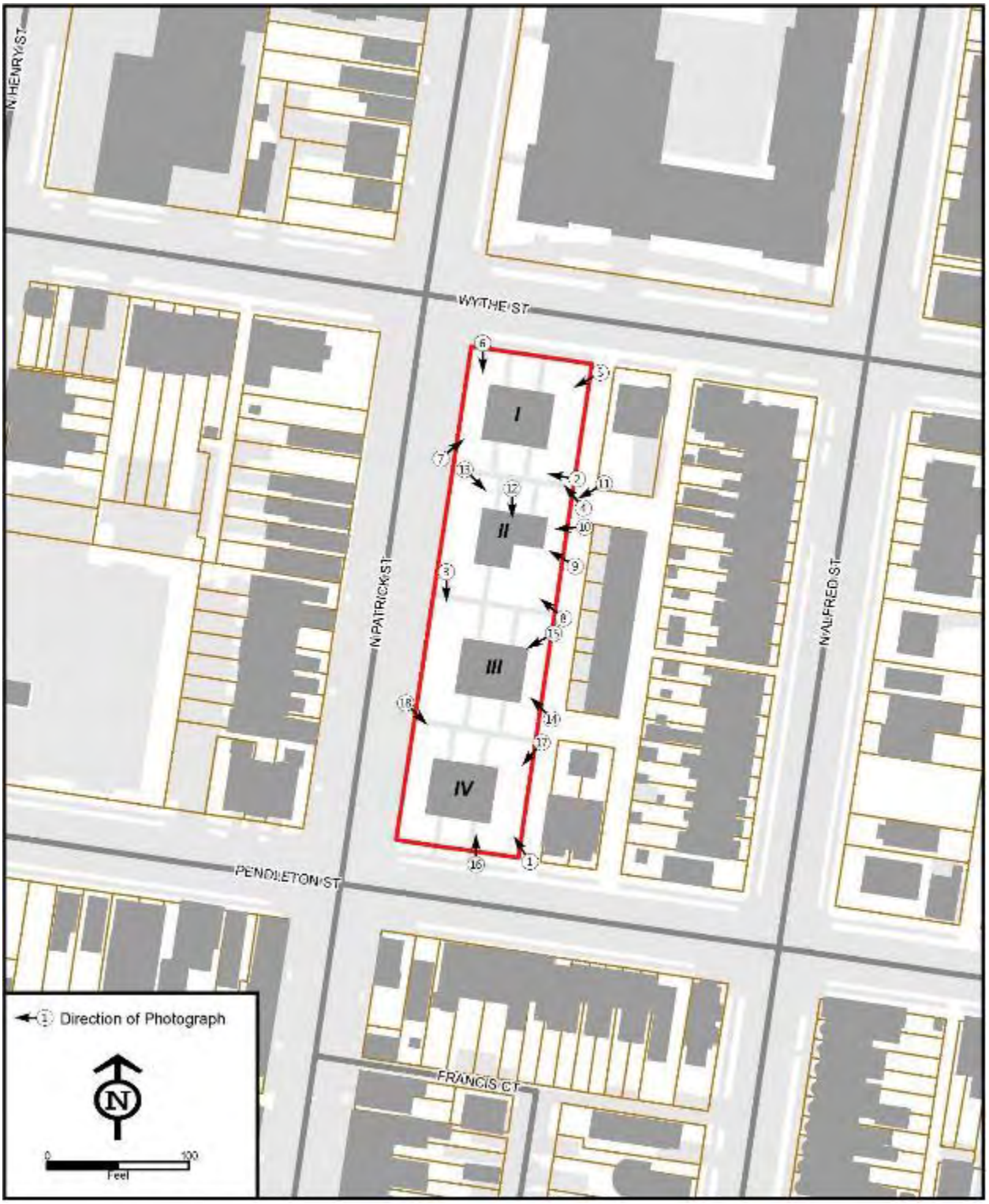
VA-1511-14 EAST AND SOUTH ELEVATIONS OF BUILDING III, LOOKING SOUTHEAST.

VA-1511-15 EAST AND NORTH ELEVATIONS OF BUILDING III, LOOKING SOUTHWEST.

VA-1511-16 SOUTH ELEVATION OF BUILDING IV, LOOKING NORTH.

VA-1511-17 EAST AND NORTH ELEVATIONS OF BUILDING IV, LOOKING SOUTHWEST.

VA-1511-18 NORTH AND WEST ELEVATIONS OF BUILDING IV, LOOKING SOUTHEAST.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HISTORIC AMERICAN BUILDINGS SURVEY

RAMSEY HOMES
(Buildings I-IV)
(Lanham Act Alexandria Defense Housing Project VA-44133)

HABS No. VA-1511

Location: East side of the 600 block of North Patrick Street
Building I. 912 and 914 Wythe Street / 625 and 627 Patrick Street
Building II. 619, 621, and 623 Patrick Street
Building III. 609, 611, 613 and 615 Patrick Street
Building IV. 605 and 607 Patrick Street / 913 and 915 Pendleton Street

Present Owner/Occupant: Alexandria Redevelopment Housing Authority (ARHA) / Tenants

Present Use: Affordable Housing

Significance: The Ramsey Homes were designed by Alexandria architect and architectural historian Delos H. Smith, FAIA, of Smith, Werner, and Billings Architects in the Modernist style in 1941 and completed by the United States Housing Authority (USHA) by 1942. The property contributes to the Uptown/Parker-Gray Historic District, which is listed on the Virginia Landmarks Register (VLR) and National Register of Historic Place (NRHP), and is located within the locally zoned Parker-Gray District. The district comprises most of the northwestern quadrant of the 1797 street grid and consists of small row houses and town houses, local businesses, and warehouses, highway-oriented buildings on U.S. Route 1, and public housing units. Ramsey Homes contains 15 units in three foursquare quadruplexes and one L-plan triplex. They contribute to the historic district in the areas of social history and architecture, as "an example of the housing constructed with public funds, between 1940 and 1945, for defense workers during World War II" (Necciai and Drumond 2008). They are individually significant due to their association with African-American defense workers and affordable housing.

Historian(s): Anna Maas, MUEP, Principal Architectural Historian
Boyd Sipe, M.A., Principal Archeologist
David Carroll, M.A., Associate Archeologist / Historian
Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive Suite 100, Gainesville, Virginia 20155

Project Information: The Board of Commissioners of ARHA determined that the property should be redeveloped to provide more units of affordable housing and meet goals within their 2012-2022 Strategic Plan, the Braddock East Master Plan (BEMP), and the City-adopted Housing Master Plan. ARHA requested HABS documentation to assist in understanding the evolution of the property and to use in its potential interpretation. City Council overturned a decision by the Parker-Gray District Board of Architectural Review (BAR) and granted a permit for demolition on September 12, 2015. Either all buildings will be demolished, or one or more may be incorporated into plans.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection:

   1941-42

2. Architect:

   Delos H. Smith, FAIA, of Smith, Werner, and Billings Architects, 220 King Street, Alexandria, Virginia; Robert K. Thulman, Mechanical Engineer; Associated Engineers Inc. The firm's architects were Delos H. Smith, FAIA, junior partner J. M. Billings, and engineer Sheldon Werner.

3. Original and subsequent owners, occupants, uses:

   April 16, 1941: Edward S. Holland, Jr., Certified Land Surveyor, 624 King Street, Alexandria, completed a "Property Line Map" for Defense Housing Project VA-44133 for the Housing Authority of the City of Alexandria. This plan, included with both sets of architectural drawings in 1941, showed 16 lots on the south side of Patrick Street between Pendleton and Wythe. Labeled 19-34, each measured 22' wide and 87' deep. Parcel 1 included Lot 19, Parcel 20 included Lot 20, Parcel 3 included Lots 21-33, and Parcel 4 included Lot 34.

   July 8, 1941: The United States Federal Government purchased the four vacant parcels from Edward E. Lawler, R. S. Reynolds, Marguerite F. Graham, and Julian M. Dove (Alexandria Deed Book 176:7). The property was managed by the United States Housing Authority (USHA), Nathan Strauss Administrator, under the Federal Works Agency (FWA), John M. Carmody Administrator. USHA became the Federal Public Housing Authority (FPHA) in February 1942.

   Four buildings with 15 units were completed in 1942 and occupied by African-American defense workers that November (NHA 1942a). In 1947, Alexandria City Directory listed the residents of the Ramsey Homes for the first time, including Carneal Coffee, USA (perhaps the Army); Cleveland B. Tivy, Clerk War Dept.; Will Daniels, barber; George W. Witherspoon, auto mechanic; and Charles E. Smith, janitor. All were noted as African American (Directories available at the Alexandria Library, Barrett Branch, Special Collections).

   October 6, 1946: The *Washington Post* reported, "Three large war housing projects in Alexandria-elected at a cost of $2,712,000-are now up for sale." FPHA gave the city the first chance to buy Chinquapin Village, Cameron Valley, and Ramsey Homes, all of which housed 2,000 people. FPHA designated the buildings permanent, but city official contended that they were temporary, and the Mayor claimed the housing did not meet city building codes and were thus substandard.

   July 26, 1951: FPHA entered a contract with ARHA for conveyance of low-rent housing "after the termination of the use of the project as defense housing during the Korean emergency" (United States 1956:48).

April 30, 1953: The Alexandria Redevelopment Housing Authority purchased the Ramsey Homes from the Federal Public Housing Authority (Alexandria Deed Book 356:407). The buildings have served as affordable housing units from 1953 to the present.

4. Builder, contractor, suppliers:

   Fabcrete Corporation, Richmond, Virginia supplied "Fabcrete", a pre-cast unit of cementitious material that did not require interior framework (Patent No. 259,885). The name of the builder and/or contractor is currently unknown.

5. Original plans and construction:

   July 15, 1941: Smith, Werner, and Billings Architects completed the first set of plans for the Ramsay Homes. The original plan submitted was for three buildings. Building A and C were to contain four units, including a living room and kitchen on the first floor and two bedrooms and a bathroom on the second floor. The architects described Building B as flats and included one three-room unit, three four-room units, and three five-room units. Each were to have shiplap siding, brick accents, and large cupolas. The landscape plan called for plantings, alley parking, patios, clotheslines, play area, and a spray basin (On file at ARHA).

   October 10, 1941: Smith, Werner, and Billings Architects submitted a second design, which was used by USHA. The second option prescribed three four-unit Modernist foursquares and a three-unit L-shaped building with more economical materials such as "Fabcrete". The plan shows the elimination of large cupolas in favor of small skylights over each bathroom as they were located in the core of the buildings and could not have windows. The plan included parallel parking in the alley, hexagonal clotheslines labeled "yard clothes dryers", and a simple paved play area within the L of the triplex. Sheet 5 has specifications for a wood plaque that reads "THESE HOMES WERE BUILT BY THE PEOPLE OF THE UNITED STATES FOR THE DEFENDERS OF THIS NATION Franklin D. Roosevelt President by United States Housing Authority for Federal Works Agency". If this was used it is no longer evident on the property (RG 196, Records of the Public Housing Administration, Architectural and Engineering Plans, the National Archives at College Park Maryland).

   November 22, 1941: The construction contract was awarded (NHA 1942a).

   July 31, 1942: The project was under construction and 95 percent complete with an estimated cost of $78,590 (NHA 1942a).

   September 18, 1942: The project was under construction and 97 percent complete with an estimated cost of $79,940 (NHA 1942a).

   October 2, 1942: The project was under construction and 99 percent complete with an estimated cost of $79,940 (NHA 1942a).

   October 30, 1942: The status of the project had not changed (NHA 1942a).

   November 30, 1942: Six units were occupied, eight units were available, and one unit was incomplete (NHA 1942a).

6. Alterations and additions:

By the 1970s, aerial imagery shows that ARHA removed the original door surrounds, skylights and flat roof and constructed large walled patios and hipped roofs. They likely added stucco and altered window placement at this time, removing coupled windows in favor of single windows

August 15, 1995: Sorg and Associates prepared plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community. The plan called for a Colonial Revival makeover, showing vinyl replacement windows with clip-on six-over-six muntins, inoperable aluminum shutters, and replacement vinyl paneled doors. The BAR approved the plans for exterior renovations with the stipulation that the doors and shutters be hunter green and that the faux muntins not be used, leaving the windows one-over-one. Stucco and brick were patched and repaired. The kitchens and bathrooms were renovated. Chain-linked fencing was replaced with black metal picket fences and the clotheslines and paved play area removed and sodded with grass. The current location of trees and fencing is different from the original.

B. Historical Context:

The history of public housing in the United States provides a context in which to analyze the architectural design and styles of the built environment at the Ramsey Homes project site, as well as the situation of the historic and modern residents of the project. A neglected area in the writing of urban history is the physical environment. It is very likely that the built environment reflects and shapes human behavior (Gardner 1981: 64). Most literature on low end housing has concentrated on tenements and urban reform in the late nineteenth century (Gardner 1981: 66). In recent years, interest has shifted to the evolution of public housing policy and design.

Public Housing in Early America

In rural or agrarian socio-economic milieus, such as much of the United States prior to the twentieth century, families typically built houses for their own use. Industrialization in the nineteenth century radically altered the social relations of building, working, and living. Increasingly over time, dwellings were built by hired labor and sold at market prices; those who could not afford such housing collected in slums.

> In the early stages of our history, settlers built their own homes, good or bad, with their own hands and some help from their neighbors. Much of our farm and rural housing is still in this stage. When we came to town building and industrialization, private business enterprise took over the job. It has had no competition until recently, and the result is a larger acreage of worse looking slums than can be found in any other allegedly civilized country. Private enterprise rise can offer no alibi. That is simply what happened as a result of laissez faire and the free working of supply and demand (Wood 1940: 83).

Prior to the American Revolution (1775-1781), responsibility for caring for Virginia's poor rested with Anglican parishes. However, after the British were defeated, the Anglican Church was disestablished, and the responsibility shifted to the local governments (U.S. Department of the Interior 1937; Ward 1980; Watkinson 2000; Roach 2002). Public housing, with its current

connotations, is a product of the early twentieth century, in the eighteenth century the term "public house" referred to an *ordinary*, an inn or tavern.

The Alms House

Circa 1800, the town of Alexandria erected a poor house and work house at the northwest corner of present-day Monroe Avenue and Route 1. Inmates and the keeper of the poor house likely lived in the main building, which was a large, two-and-a-half-story, seven-bay, Federal-style brick structure (U.S. Department of the Interior 1937; Ward 1980; Watkinson 2000; Roach 2002). The building displayed Flemish bond brickwork and featured a hipped roof with pediment, dormers, and four interior chimneys. The symmetrical façade was arranged around a two-story, projecting center pavilion. The center pavilion contained an arched entrance that incorporated a fan light and sidelights; a Palladian window occupied the second story of the projecting pavilion. The interior displayed a rectangular, longitudinal-hall plan with central entrance.

The ledger of Robert Hodgkin, who became keeper of the Alexandria Poor House in 1861, provides valuable information about the operation of the Poor House between 1861 and 1863 (Miller 1989; Ward 1980). Hodgkin's record of the operations of the Alexandria Poor House documents that, despite the disruptions to the local economy, he was still able to purchase a variety of foodstuffs, including fresh meat, salt beef, flour, butter, bread, molasses, cornmeal, herring, and pickled codfish. He also purchased "20 bushels rye for coffee" (Ward 1980: 65). These purchases supplemented the vegetables produced on the Poor House farm. In January 1862, the livestock on the farm included "three horses, two cows, one bull, and nineteen hogs" (Ward 1980: 66).

In January 1862, Robert Hodgkins prepared a list of the people, livestock, furnishings, and agricultural implements at the Poor House for submission to the "committee on the poor," which oversaw the institution. At that time, thirty-eight inmates lived at the Poor House, along with eight members of Robert Hodgkins's household. The Poor House ledger for 1861-1862 contains two sections, one for the alms house and one for the work house. According to local historian Ruth Ward, who analyzed the ledgers, "The ledger entries dealing with the work house indicate that most inmates were sent there for thirty days, although some were sentenced to six months." During the period covered by the ledger, at least two inmates of the work house, John Crisman and Kate Thompson, ran away (Ward 1980: 66). In January of 1863, one inmate delivered a child at the Poor House. The ledger also mentions three deaths in 1862: James Buckhannon, an unnamed boy who drowned, and a "German who died at poor house" (Ward 1980: 65-66).

Philanthropic and Limited Dividend Housing

Until the Depression, most American leaders believed that the private market, with a helping hand from private philanthropy, could meet the nation's housing needs. The antecedent of public housing, philanthropic and limited dividend housing of the late nineteenth century, though privately built and operated, shared some similarities with later public housing. For instance, philanthropic and limited dividend housing was also faulted for plain appearance (Gardner 1981: 67). In the early twentieth century, a few unions and settlement house reformers built model housing developments for working class families, mostly in the northeastern United States and without government subsidy.

Public Housing in the New Deal

Overview

Prior to the 1930s, the federal government had no role in housing private citizens; the social welfare of the public, in terms of housing, was left entirely to local governments and private charities (Robinson et al: 1999b: 5). The Great Depression of the 1930s focused the nation's attention on "the inequities of the housing market and on the smoldering slum problems … devastated home ownership and the residential construction industry" (Robinson et al: 1999b: 1:12).

Public housing in the United States was first implemented during the 1930s when many Americans lost their homes and livelihoods as a result of the economic crises of the Great Depression. President Franklin D. Roosevelt responded with the Federal Housing Act of 1934, which established the basic format for public housing in which the government subsidizes the market value of the housing, and the creation of the Federal Housing Association (FHA) (Trotter 1958; Gotham 2000: 296). Public housing in the New Deal was also an employment program, as under the National Industrial Recovery Act, the formation of the Public Works Administration (PWA), which developed and built the first housing projects in the United States, led to the creation of many jobs in the construction industry (Aiken and Alford 1970).

The socio-political environment during the early years of the Great Depression accommodated reformers who believed that that the federal government should subsidize social housing and build a noncommercial alternative housing sector. Many American housing activists envisioned public housing for the middle-class as well as the poor.

The Emergency Relief and Construction Act of 1932

The first significant New Deal measure targeted at housing was the Emergency Relief and Construction Act of 1932. This act created the Reconstruction Finance Corporation (RFC), a federal agency authorized to make loans to private corporations providing housing for low-income families. Also in 1932, the Federal Home Loan Bank Board was established to make advances on the security of home mortgages and establish a Home Loan Bank System. The act did little to assist individual homebuyers. The average home loan at that time required very short-term credit, with terms generally ranging from three to five years. Large down payments, second mortgages, and high interest rates were commonplace.

The Housing Act of 1934

As the economic situation worsened, the National Housing Act of 1934 was passed to relieve unemployment and encourage private banks and lending institutions to extend credit for home repairs and construction. Under the Act of 1934, the Federal Housing Administration (FHA) was created. The responsibilities of the FHA, now a federal agency under the Assistant Secretary for Housing-Federal Housing Commissioner, are to improve housing standards and conditions; to provide an adequate home financing system through insurance of mortgage loans; and to stabilize the mortgage market. Two mortgage insurance programs were established under Title II of the Act of 1934: Section 203 mortgage insurance for one to four family homes; and Section

207 multifamily project mortgages. The Act of 1934 also authorized the FHA to create the Federal National Mortgage Association, or Fannie Mae, which was chartered in 1937.

Helen Alfred, Executive Director of the National Public Housing Conference, summarized the rationale for the act, its means, and its goals:

> Recognizing the social importance of housing to all the people, and the value of a home construction program as a medium of reemployment in a great key industry, the Federal government has taken a hand. The removal of blighted areas and rehousing of the lower-income groups at rents which they can afford to pay has not been accomplished by speculative builders or limited dividend corporations. This new policy of the Federal government, as expressed in the terms of the National Industrial Recovery Act, presents an opportunity to make rapid progress toward the solution of our housing problem. In conformity with the provisions of the Act, the Government has made large sums of money available for the purpose of clearing slums and erecting low-rent dwellings. These funds will be advanced in the form of loans and outright grants. Private corporations, including limited dividend companies, can merely obtain loans for their projects. Public agencies, in addition to loans, can obtain subsidies amounting to thirty percent of the cost of labor and materials (Alfred 1934: 23).

Alfred also summarized the necessity for states and local communities to pass legislation and charter local authorities that would make implementation of law possible:

> The policy of the Government presents an opportunity for a vigorous battle against indecent housing conditions. The Government is doing its part; the next steps must be taken by local communities. As stated above, the outright grants will be given only to public bodies. Only five States now have the power to create housing boards or authorities with full power to acquire unhealthy areas, clear slums, and construct and operate dwellings. These States are California, Michigan, New Jersey, Ohio, and Wisconsin. Enabling legislation is pending in a number of extraordinary sessions of State Legislatures ….civic and welfare groups, members of the clergy, women's organizations and progressive labor leaders are uniting to promote sentiment in their local communities favorable to the creation of municipal housing authorities. Most of the municipal legislation is being patterned after a bill prepared in New York City under the supervision of the National Public Housing Conference. Under the terms of this bill, it is recommended that a municipal housing authority be created and that a board be appointed by the Mayor. This board is to have power to issue its own bonds and to sell them to the Federal government. It will have placed at its disposal an effective procedure for acquiring land by condemnation or purchase, for clearing, replanning and rebuilding unhealthy and blighted areas, and finally to manage and operate dwellings when completed. The Government loans will be repaid out of the rents collected (Alfred 1934: 23).

Critics of the Housing Act of 1934 have pointed to the act’s failure to assist lower income families most in need of housing aid and feel it did little to improve inner city housing; it promoted the single-family detached dwelling as the prevailing mode of housing, which

perpetuated suburban sprawl and it intensified racial segregation. Critics of the FHA have seen racially discriminatory policies and practices of the agency associated with mortgage insurance and lending, appraisal guidelines, and home building subsidies (Gotham 2001: 309).

Many New Dealers, including Eleanor Roosevelt, Harold Ickes, Aubrey Williams, and Harry Hopkins, acknowledged and worked to mitigate the effects of race on public policy; for instance, it was mandated that African Americans, who comprised about 10 percent of the total population, and 20 percent of the poor, would collect at least 10 percent of welfare assistance payments and various New Deal relief programs such as the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC) allocated 10 percent of their budgets to African Americans (Leuchtenburg 1963:244-246). President Roosevelt appointed an unprecedented number of African Americans to second-level positions in his administration; these appointees were collectively called *the Black Cabinet.* These efforts were largely responsible for the transition of black political organizations from the Republican Party to the Democratic Party by 1936, forging the political alliance between African Americans and the Democratic Party that still exists. Few efforts, however, were extended to ending racial segregation or guaranteeing the civil rights of racial minorities. The CCC was organized in racially segregated units; however, pay and working conditions were equitable (Leuchtenburg 1963: 256-257).

Reformers and Housers - Ideals and Designs for Social Housing

Even before the onset of the Great Depression, a cadre of progressive American architects and planners had come to believe that fundamental restructuring of national residential patterns was needed. These design professionals and other reform-minded citizens, including urban and labor activists, envisioned the development of attractive and affordable alternatives to single-family suburbanization, which had become endemic by the 1920s (Mayer 1935: 400). Albert Mayer, among other advocates of the rethinking of the American domestic landscape, saw new social housing not only as a solution for the problems of impoverished slum dwellers but a necessary step toward providing better lives for all Americans:

> The slum and the blighted district -- urban and rural - are only the most spectacular manifestations of the bad conditions under which almost all of us live. The people who live in slums can't afford to live in decent places. Those who can afford to don't get anything really satisfactory, unless they shift around with the shifting, sprawling city and suburb. Lack of play spaces and convenient parks, noise, exposure to traffic accidents, encroachment of business, overcrowded roads and streets and subways -- these affect the well-to-do only in less degree than they afflict the poor. The well-to-do shift to new areas, and the poor move into the abandoned unsatisfactory areas. If this sounds an exaggeration to anyone, let him simply visit the derelict areas that were good neighborhoods twenty, fifteen, ten years ago.
>
> …the housing problem is twofold. First, there is the lack of reasonable planning and stability which makes our entire physical environment unsatisfactory. Then there is the problem for something like two-thirds of our population who haven't the money to pay for physically decent housing--whose income or relief wage or relief dole is not enough to pay the sum of real-estate taxes, current interest and

> amortization on cost of land and building, and adequate maintenance. On top of these permanent elements there is the impending housing shortage, which will affect both groups. The problem of the two-thirds is bluntly one that involves redistribution of wealth. The physical solution is similar for all: planning and construction of projects on a sufficiently large scale so that they can be free from traffic dangers and extraneous noise, can contain facilities for recreational and community life, and can achieve the economies of large-scale planning and its amenities of proper orientation to air and sunlight. Such projects must be so related to the larger community of which they are a part that they are within convenient reach of daily work, of shopping districts, of larger recreational and park areas (Mayer 1935: 400).

Catherine Bauer [Catherine Krause Bauer Wurster], born May 11, 1905, in Elizabeth, New Jersey, was a leading member of a group of early twentieth-century idealists known as *housers*, social reformers, mostly women, committed to improving housing for low-income families. On the basis of her belief that social housing could produce good social architecture, and impressions made on her by the widespread suffering during the Great Depression, she became a great advocate for the poor in the struggle for housing. Bauer was a charismatic figure in the reform movement, and one of its greatest theorists. Her classic *Modern Housing* (1934) made her an authority on social housing and she co-authored the Housing Act of 1937.

Bauer was significantly influenced by American urban critic Lewis Mumford and European and expatriate American artists and architects in Europe including Fernand Léger, Man Ray, Sylvia Beach, and the architects of change group: Ernst May, André Lurçat, and Walter Gropius.

European ideals and designs for social housing that had developed in the 1920s were adopted and implemented in the United States in the 1930s. The goal of the houser movement, beyond the creation of a supply of adequate, government-funded affordable housing for the urban poor, was the establishment of an ordered environment for the urban poor that would eventually lead to the elimination of urban slums. European urban planning concepts such as *Zeilenbau*, or a plan that arranged buildings in parallel rows, to take advantage of maximum light and ventilation, were adopted for many projects. Limited traffic flow with planned circulation patterns, pedestrian walkways, courtyard areas and open spaces with park-like settings were also emphasized in the designs (Robinson et al: 1999a: 18). Most projects were designed to a human scale and were well landscaped. Some included private or semi-private garden spaces.

Ultimately, the uninspired, sterile, and institutional designs that began to characterize American public housing fell far short of the communitarian, European-style projects that the housers envisioned.

The PWA - Public Housing Design and Construction

The Public Works Administration (PWA) was created as a federal agency under the National Industrial Recovery Act in June 1933. The agency's mission was to provide employment, stabilize purchasing power, improve public welfare, and contribute to a revival of American industry through management of the construction of public works and housing.

Horatio Hackett, a Chicago architect and engineer with limited experience in housing reform issues, was placed at the head of the PWA's Housing Division; consultants on staff included architects Alfred Fellheimer and Angelo R. Clas (Robinson et al: 1999a: 21-23).

Several subordinate units were organized within the Housing Division of the PWA; the Branch of Land Acquisition which handled property acquisition and supervised site development; the Branch of Plans and Specifications, staffed by architects, engineers, landscape architects, and cost estimators, who worked closely with local architects and engineers; and the Branches of Construction and Management, which were responsible for the final aspects of project development, including slum removal, construction supervision, and administration of tenant services.

In the first years of its existence, the PWA Housing Division oversaw all phases of site development for public housing projects, excepting the style in which the buildings were built; that was, at least theoretically, left to the local architects (Robinson et al: 1999b: 19).

As PWA public housing scholars Michael W. Strauss and Talbot Wegg wrote:

> …the style of buildings, whether they should be "modern," colonial, Spanish, or what-not, was on the whole left to the decision of local architects. They had only one watchword, simplicity. As a result there is, to the layman's eye, great variety in the exterior design of projects. New York, Chicago, Camden, Cleveland, and some others are modern; Jacksonville and Miami are of typical design; Charleston recalls the graciousness of its heritage; Boston is in keeping with the New England tradition; Dallas suggests the distinctive architecture of the Southwest (Strauss and Wegg 1938: 68).

The autonomy of local architects in design decisions proved problematic; PWA officials determined that most American builders were incapable of designing large-scale public housing projects that met the high standards of the Housing Division. Months before the first federally funded public housing project, First Homes, opened in Manhattan's Lower East Side on December 3, 1935, the Plans and Specifications Branch began the preparation of a series of plans for the basic units of public housing complexes, including apartments and row houses of all types and sizes. These plans were published in May 1935 as *Unit Plans: Typical Room Arrangements, Site Plans and Details for Low Rent Housing*, and were adopted by most local architects involved with public housing projects and became the standard for PWA public housing design (Robinson et al: 1999b: 19).

Over time, the use of standardized plans and model unit designs became more and more evident. Although the original rationale for this approach stemmed from observed deficiencies in the design skills of local architects, the ultimate effect was a net loss of freedom of design and architectural innovation. Further, economy increasingly dominated other considerations of design and construction.

Typical American public housing projects of this period included multi-family, low-rise residential buildings and an ordered site plan that arrayed the buildings around open spaces and recreational areas; buildings generally occupied less than 25 percent of the site. The most common building forms were several-story walk-up apartments and row houses, often

constructed of brick, simply designed and generally well-built (Robinson et al: 1999b: 21-22). Attached dwellings were popular with designers of public housing complexes, being more economical in both construction and operating costs (Robinson et al: 1999b: 21-22).

A community center, typically a one-story building containing management offices, recreation rooms or classrooms, and a hall for community functions such as dances or meetings, was usually integrated into the project. Management offices, maintenance buildings, garages, nursery schools, and buildings originally containing retail or office spaces comprised a non-residential component at some sites (Robinson et al: 1999a: 18-19, Robinson et al: 1999b: 21-22). Larger projects often included multiple commercial and community buildings and manifested as almost self-contained communities within the surrounding neighborhoods. These sometimes included heating plants, generally characterized by a tall smokestack (Robinson et al: 1999a: 18-19).

Spartan utilitarian design characterized the interior spaces of the individual residential units. Most units included one to four bedrooms, a kitchen, living room, and bathroom. Room sizes were minimal and the shapes generally regular. Walls were most often painted concrete block or plaster partitions; floors typically asphalt tile or linoleum over concrete, with the occasional use of wood parquet where costs and availability permitted. Units included modern conveniences; a gas range and electric refrigerator in the kitchens and full bathrooms (Robinson et al: 1999a: 19-20).

Each project was subject to both strict cost controls and minimum standards of appearance and livability. Various cost and space saving strategies were employed including open cupboards and closets and suite type plans as interior hallways were considered wasted space. Units were almost always situated to take advantage of maximum natural sunlight and ventilation, and arranged to maximize the privacy of residents (Robinson et al: 1999a: 19-20).

Factors in determining the location of public housing projects within local communities included proximity to employment opportunities, slum clearance, existing transportation and infrastructure development, and availability of suitable land. City blocks were often combined to form superblocks (Robinson et al: 1999b: 21-22).

Designers sought to invest the project's residents with a sense of communal identity, distinct from its surrounding neighborhood, through the deliberate site plans and the design and form of the buildings. Public art was also an important component of early PWA-era projects and some later designs. The earliest PWA projects successfully integrated European design theories and contemporary American housing reform philosophies; the best of these achieved very high standards of design, site planning, and construction (Robinson et al: 1999a:19).

Slum Clearance

Housing reformers during this period were divided over the issue of slum clearance. In the 1930s, most American cities included slum areas, neighborhoods characterized by substandard housing of various types, occupied by the very poor, often ethnic or racial minorities. Many believed that slums were breeding grounds for crime and a major public health problem. Traditional reformers believed that slum clearance served to eliminate blighted and overcrowded neighborhoods while the building of new low-income housing on former slum

sites allowed the poor to continue to live near their places of employment. Others, including Bauer and many housers, believed that slum clearance was a waste of time and money that primarily benefited the real estate industry. Opponents of slum clearance contended that new housing built on former slum sites, even with public financing, would often be too expensive for the dispossessed tenants. Lewis Mumford, an icon of the houser group, wrote: "if we wish to produce cheap dwellings, it is to raw land that we must turn... The proper strategy is to forget about the slums as a special problem…. When we have built enough good houses in the right places, the slums will empty themselves" (Robinson et al 1999b: 29).

Legal issues related to slum clearance proved to be a major obstacle for the PWA Housing Division projects. Early on, the PWA was determined to prove the feasibility of combining slum clearance with the construction of low-rent housing. Numerous PWA acquired sites that had been slum neighborhoods were condemned under the power of eminent domain. As some slum sites had hundreds of owners with whom the PWA had to negotiate, acquisition was sometimes very complicated. As a result of various legal challenges to condemnation proceedings before 1936, the PWA built all subsequent housing on vacant land or in sites for which it could negotiate clear title (Robinson et al 1999b: 37).

United States Housing Act of 1937

As previously discussed, the Housing Act of 1934, although responsible for several major public works housing projects, was quite limited in scope. In December 1935, Senator Robert F. Wagner of New York began a campaign to push a broader housing bill through Congress (Robinson et al 1999b: 33). In a speech before the NPHC, he defended his stand on public housing against attack from the political right:

> The object of public housing … is not to invade the field of home building for the middle class or the well-to-do ... Nor is it even to exclude private enterprise from participation in a low-cost housing program. It is merely to supplement what private industry will do, by subsidies which will make up the difference between what the poor can afford to pay and what is necessary to assure decent living quarters (Robinson et al 1999b: 33).

Lobbyists for the private sector housing industry, amongst other groups, organized opposition to the new bill. One of the strongest and most vocal rebuttals to the philosophy of Wagner and his allies came from the president of the National Association of Real Estate Boards (NAREB), Walter S. Schmidt, of Cincinnati:

It is contrary to the genius of the American people and the ideals they have established that government become landlord to its citizens … There is sound logic in the continuance of the practice under which those who have initiative and the will to save acquire better living facilities, and yield their former quarters at modest rents to the group below (Robinson et al 1999b: 33).

Other business organizations followed suit, with the National Association of Retail Lumber Dealers, the U.S. Building and Loan League, and the U.S. Chamber of Commerce also

expressing fierce opposition to public housing legislation (Robinson et al 1999b: 33). The public housing activists responded by painting a bleak picture of the state of American housing:

> …AT LEAST A THIRD OF OUR HOUSING IS BAD ENOUGH TO BE A health hazard, but not all in the same way or to the same degree. The coverage of moral hazard is less than that of physical hazard, which is fortunate, as its effects are worse. About two fifths of our housing is rural, divided more or less evenly between farm and non-farm. The Farm Housing Survey made in 1934 shows an appalling lack of modern sanitation and conveniences, except in a few favored regions. To call 80 percent of our farmhouses substandard is an understatement (Wood 1940: 83).

Wood found data on urban housing conditions in the 1930s, derived from the *Real Property Inventories* housing field surveys conducted from 1934-1936, also disturbing. The structural condition of only 39 percent of urban homes was considered good, 44.8 percent needed repairs, and 16.2 percent was considered poor; 4.4 percent of urban dwelling units had neither gas nor electric lighting, 14.6 percent lacked a private indoor toilet, 19.9 percent had no bathtub or shower, and 17.4 percent of occupied dwellings were crowded or overcrowded (Wood 1940: 83). According to Wood, "to call a third of the nation or a third of those who live in urban communities ‘ill-housed’ can hardly be an exaggeration (Wood 1940: 83)." "One-third of a nation" became a rallying cry for the public housing movement (Robinson et al: 1999b: 34).

Enacted as law, the 1937 United States Housing Act, with the objective of providing affordable housing to the poorer segments of the population, provided stringent new cost guidelines to public housing projects that led to an increased emphasis on economy and greater standardization in American public housing:

> It is the policy of the United States to promote the general welfare of the Nation by employing its funds and credit, as provided in this Act, to assist the several States and their political subdivisions to remedy the unsafe and unsanitary housing conditions and the acute shortage of decent, safe, and sanitary dwellings for families of lower income and, consistent with the objectives of this Act, to vest in local public housing agencies the maximum amount of responsibility in the administration of their housing programs (United States Housing Act of 1937, Sec. 2; 42 U.S.C. 1437).

The new legislation revived the failing Red Hook housing project in New York City; however, it also tightly controlled the project’s budget. The total cost per room was cut to nearly half that of earlier PWA efforts in New York City, and the project density far exceeded that utilized in earlier public projects in the city (Robinson et al: 1999b: 40-41).

The issue of slum clearance was also revisited in the 1937 act. Senator David I. Walsh, a proponent of slum reform from Massachusetts, added the "equivalent elimination" provision to the bill, which required the local authority to remove substandard slum units from the local housing supply in a "substantially equal number" to the public housing units it built. The local authority could meet this requirement by "demolition, condemnation, and effective closing" of substandard units, or through rehabilitation by "compulsory repair or improvement." This provision was supported by many commercial landlords, who feared that expanded housing

supplies would lower the rents that could be charged for their rental properties (Robinson et al: 1999b: 37).

United States Housing Authority

The United States Housing Authority, or USHA, was created under the 1937 Housing Act. This federal agency was designed to lend money to the states or communities for construction of low-cost public housing. Unlike the centralized organization of the earlier PWA Housing Division, which was responsible for every component of project planning and administration, operations at the newly established USHA were increasingly decentralized.

Roosevelt's Secretary of the Interior Harold L. Ickes successfully lobbied Congress to place the USHA within the Department of the Interior; however, President Roosevelt appointed Nathan Straus, a man strongly disliked by Ickes as the USHA administrator. This appointment resulted in Ickes distancing himself from the public housing program (Robinson et al: 1999b: 39).

Under the USHA, responsibility for initiating, designing, building and managing housing projects was given to local Public Housing Authorities (PHAs), while the Washington bureaucracy provided program direction, financial support, and consulting advice. In effect, site analysis, land acquisition, tenant distribution, and project design were handled by PHAs under the relatively strict constraints of the Federal program and the USHA furnished technical guidance, design assistance, project review, and issued program standards, management guidelines, design models, architectural standards, and building prototypes (Robinson et al: 1999b: 45).

Regarding the impact of increased standardization and restrictive budgets under the USHA on architectural style in public housing, it is clear that design creativity suffered during this period, continuing a trend that had actually begun under the PWA. Economy of materials and design trumped experimental and new design alternatives, resulting in what some critics have labeled an "unnecessarily barracks-like and monotonous" look. The social-psychological elements of project planning that had formed the core of the housers' vision were replaced by the goal of meeting minimum human needs of clean air and light within increasingly limited budgets. Although many new modern housing units were built, most were devoid of the artistic or aesthetic styling of earlier projects (Robinson et al: 1999b: 45).

As with the PWA projects, attempts were made to instill a sense of community in the public housing projects financed by the USHA. PHAs were encouraged to organize a variety of social, educational, and recreational events for the residents of the local complexes, most of which included a neighborhood community center. Choirs, nondenominational children's Bible schools, card clubs, dancing classes, nursery schools, and neighborhood newsletters were amongst the activities and programs employed (Robinson et al: 1999b: 43). The USHA also attempted to increase public support for its programs and the new housing projects using city newspapers and government printed material, ground breaking and dedication ceremonies, tours of model homes, and radio broadcasts (Robinson et al: 42).

Criticism of Public Housing in the New Deal

In its earliest phase, the American efforts in public housing were inspired by modern architectural theory, progressive social ideals, and the praxis of urban activists; however, it soon foundered due to political squabbling, pressures from private sector builders, racial prejudice, classism, and uninspired design. Although a high degree of technical excellence was mandated by USHA for public housing design after 1937, the buildings generally showed investment in healthier and safer designs over aesthetic considerations. There was also long-standing social bias toward plain public housing (Gardner 1981: 67). Bias of this type might be supported by identification with property values as an expression of socio-economic status and a zeal for protection of private property rights (Hooks 2001:139).

Some historians, including Richard Pommer, have blamed the failures of public housing in the United States almost entirely on the architecture and design. Pommer explained that modern architecture was not embraced by the architects of American public housing projects due to the separation of housing designs, which remained traditional, from other building forms. Pommer added, "…the degradation of public housing in [the United States] resulted as much from the contempt of it and its inhabitants expressed by these purely architectural values as from the political-economic compromises necessary to sell it to the real estate owners, the rural politicians and the bureaucrats" (Pommer 1978: 264).

Housing and urban planning scholar John F. Bauman noted that the private housing market has long undermined government programs in public housing. This antagonism from the private sector, together with factors associated with racism and classism, such as the resistance of the middle class to living in proximity to the poor or racial minorities, the idea of public housing as transitional and the failed aesthetics of public housing design have resulted in the current state of public housing. Bauman stated, "The nexus of privatism and racism has foreclosed serious attempts by either public or private agencies to make low income housing into more than a poor house…" (Gardner 1981: 66).

Public Housing in the 1940s

Overview

As President Franklin D. Roosevelt moved industry toward war production and abandoned his opposition to deficit spending, the PWA became irrelevant and was abolished in June 1941. Although Congressional interest in public housing had begun to diminish in the late 1930s, the onset of World War II would lead to renewed interest, redirection, and expansion of Federal housing efforts. As the United States increased industrial capacity in response to the expanding conflict, established manufacturing centers such as Chicago and Detroit, as well as new manufacturing sites, experienced a great influx of population which again drew attention to the inadequate stock of urban housing. Good quality and inexpensive housing for defense workers and their families became a component of the war effort, leading to the revivification of the American public housing program after 1941. The goal of the program, however, was dramatically altered from the provision of housing for low-income families to housing defense workers on the home front (Robinson et al: 1999b: 46).

Despite the patriotic rationale of the new public housing efforts, private enterprise and its supporters in Congress again formed opposition, arguing that federal involvement in housing should be limited to loans and mortgage guarantees to support private construction and, at most, the construction of publicly funded temporary housing. Political battles continued between public housing advocates and business interests and their allies, Republicans from rural constituencies and congressional conservatives, including Senator Harry F. Byrd of Virginia. Opponents of public housing tried to derail defense housing funds being appropriated to the USHA and feared that public housing would emerge after the war to compete with private enterprise. The success of such attacks on government-built defense housing severely limited the extent of the public housing program during the war (Robinson et al: 1999b: 46).

The Lanham Act of 1940

In opposition to the USHA, a new housing bill that would severely restrict Federal efforts to build public war housing was sponsored by Republican Congressman Fritz Lanham of Texas. The Lanham Act, enacted as law on October 14, 1940 (54 Stat. 1125), was designed to provide relief for defense areas found by the president to be suffering from an existing or impending housing shortage. In such cases, the Federal Works Administrator was empowered to acquire "improved or unimproved lands or interests in lands" for construction sites by purchase, donation, exchange, lease, or condemnation. The Lanham Act provided $150 million to the Federal Works Administration to provide federally built housing quickly and cheaply in the most congested defense industry centers. It emphasized both speed in construction and economy of materials.

The Lanham Act represented a radical departure from previous federal public housing policy. It waived the low-income requirement for tenancy and made defense housing available to all workers facing the housing shortage. It also ordered local authorities to set fair rents at variable rates to be within the financial reach of all families employed in defense industries. The act exempted local authorities from the "equivalent elimination" clause, no longer requiring the demolition of an equal number of slum housing units for all public housing units built. Interestingly, the new policies conformed to the vision of earlier housers, such as Mumford and Bauer; public housing was becoming available to a more diverse section of American society, not only the most impoverished, and expensive, time consuming, and wasteful slum clearance was no longer mandated (Robinson et al: 1999b: 47).

Between 1940 and 1944, about 625,000 units of housing were built under the Lanham Act and its amendments with a total appropriation of nearly $1 billion.

War Trailer Projects

During World War II, the great majority of the public housing units, over 580,000, were of temporary construction, such as plywood dormitories and trailers (Robinson et al: 1999b:52). Government built trailer camps became a common sight on the home front landscape during World War II:

> Across the length and breadth of America at war can be seen compact colonies of strange little cottages on wheels. These vehicles, each boasting all the comforts of home on a miniature scale, are known as trailers. A group or colony of them is a

> trailer camp. They are used to house workers in American war industries and other plants which have sprung up like giant mushrooms all over the United States. An owner, with his auto, which. pulls his trailer, may journey 500 to l,000 miles to join some trailer camp near the factory where he intends to work …
>
> People do not live in trailers because they like the idea of being gypsies, but generally because there are few houses to rent in the big war industry centers. So as a last resort they buy or rent a trailer, or even make one. Each trailer is built on two or four wheels and towed behind the owner's automobile. There are thousands of these trailers gathered in colonies near the nation's war plants.
>
> There were not quite 200 trailers in the camp. There were four neat rows of them and a few more scattered under the trees in front of a wooded ravine. Two white, roughly macadamized roads let through the trailer village. In about the middle of the camp stood the office and utility buildings. The office building was a bare room with a concrete floor and on the wall was a poster advertising war bonds. At the end of the room was a small office which served as renting bureau and post office. Stretching down one side of the room was a store where one could buy everything with the exception of fresh fruit and vegetables; fish and fowl. There was every kind of delicatessen -- sausages, salami, cheeses and potato salad and great stocks of sardines and canned salmon, canned goods and groceries. There was a small selection of such meats as chopped beef, pork chops and stew meats. There were oranges, bananas, cakes and bread (Vorse n.d.).

As early as 1940, war trailers were being distributed to areas in need of housing for defense workers. In the National Housing Agency publication, *Standards for War Trailer Projects* (NHA 1942b), it was stated that trailers were to be used as expedient and temporary housing for defense workers, were to be transferred to other locations once adequate housing facilities became available, and were to be held to minimum construction standards due to their temporary nature. Additional guidelines suggested site selection in consultation "with local housing authorities, planning agencies, municipal officials, military authorities, industrial experts, and other persons in a position to give information and advice" (NHA 1942b:1). The primary criterion for site selection was proximity and convenient access to the war activity, usually a defense plant of some type.

Sites were to be, when possible, within walking distance to the war activity, "2 miles for men and 1 mile for women" (NHA 1942b:i). "For economy and speed of construction," site layout conformed to existing topography and utilized existing drainageways; water lines and sanitary sewers were installed on-site; storm sewers were not built (NHA 1942b:5, 15). Construction of paved roads accessing the site if not already present and sidewalks within the site were mandated (NHA 1942b:6). Acceptable site density was considered to be "12 to 18 trailers per acre of usable land" (NHA 1942b:i). Example site plans were included in the manual.

Service trailers or buildings ancillary to the residential trailers and their arrangement in the site plan were also specified in the standards. Community Facilities included "Community Toilets," to be located within 200 feet of the residential trailers; "Community Laundries," within 300 feet; and "Collection Stations" for "refuse, garbage, sink waste, water supply, and ashes" within 150 feet. Outdoor lighting was recommended to "supplement street lighting" on walkways between

the residential and ancillary structures (NHA 1942b:7). Larger trailer camps, sites with fifty or more dwellings, were to be provided with on-site management and maintenance services, social or activity centers, outdoor recreation areas, health service facilities, and commercial facilities unless it could be demonstrated that adequate off-site facilities of these types were available to camp residents. Reduction or omission of such facilities required the approval of the Washington office of the Federal Public Housing Authority (NHA 1942b:9).

With the end of the war in 1945, the FPHA was required, under the Lanham Act, to dispose of the temporary housing units, over 320,000 extant family dwelling and dormitory units at that time (NHA n.d.). The agency experimented with the reutilization of temporary war housing, in whole or in part, as barracks, utility buildings, and even rural dwellings and actively promoted the sale of such structures in domestic and foreign markets (NHA n.d.). The success of this program and the number of such structures that continued in use after the war is not known. Spring Bank Trailer Camp were located on U.S. 1, in Fairfax County, south of the City of Alexandria (Netherton et al 1992:622). A segregated Farm Security Administration (FSA) Trailer Camp for African Americans was present in Arlington, Virginia, by 1942.

Although few details relevant to this facility have been located at this time, a community building including "a well laundry" supplied with new aluminum Maytag Commander washing machines was located within the camp (Lupton 1996: 21).

The Housing Act of 1949

After World War II, any effort to extend public housing policy was vigorously contested by special interest groups, sometimes referred to as the real estate lobby, including the National Association of Real Estate Brokers (NAREB), the National Association of Home Builders (NAHB), the U.S. Chamber of Commerce, the U.S. Savings and Loan League, and the National Association of Retail Lumber Dealers.

In 1945, legislation to extend the public housing appropriations of the 1937 Housing Act, which had been suspended before the war, was introduced in Congress. This legislation reached the U.S. House of Representatives as the Taft-Ellender-Wagner (T-E-W) Bill in 1948. Although it was bitterly fought by the real estate lobby and its political allies, after the election of Harry S. Truman as President of the United States in 1948, a popular mandate for passage of the bill was perceived. The T-E-W Bill was signed into law in July 1949 as the Housing Act of 1949. The act called for the production of more permanent public housing across the United States. Under Title I of the act, the Housing and Home Finance Agency (HHFA) was authorized to provide capital grants and loan guarantees to local agencies for use in urban renewal; large scale land acquisition and slum clearance; under Title III, the Public Housing Administration (PHA) was authorized to allocate federal funds to local housing authorities for the construction of 810,000 public housing units over a six year period (Robinson et al: 1999b: 100).

Although the Housing Act of 1949 was nominally an extension of the United States Housing Act of 1937, it was also a great compromise between advocates of housing reform and the real estate lobby (Robinson et al: 1999b: 100).

Public Housing After 1949

Overview

In the perceived prosperity of the postwar years, public housing remained an integral part of Federal housing policy but received limited attention and funding. The rapid growth of population in the United States in the latter half of the twentieth century and the concentration of this population in urban areas led to new problems in housing and the need for government to address these problems. Under the Housing Act of 1949, beginning in the 1950s, numerous massive public housing projects, typically high-rise complexes were constructed in urban areas across the country (Robinson et al: 1999b: 57).

In terms of design, public housing projects after 1949 were characterized by a simple, unified appearance. Standardization and economy became the most important elements of design; the "stripped modern" exterior architectural detailing of most public housing resulted in an institutional appearance. These later complexes also had much higher site densities than earlier projects, having both taller buildings with more units, and a greater number of buildings per site. The interiors of later public housing complexes also contrasted with the earlier ones, typically having smaller units with smaller rooms, connected by long hallways. Also, unlike earlier small-scale projects that were designed to blend with their surroundings, public housing in the second half of the twentieth century tended to stand out in the urban landscape (Robinson et al: 1999b: 57).

Many critics of the public housing system in the 1950s considered it tied to humanistic sentiments and not focused on practical methods of assisting the poor. They claimed that the bureaucracy involved in the public housing system was inefficient and significantly decreased the funds that were actually used for housing, that public housing tended to result in more racially segregated communities within cities, and that the demand on collective cooperation and unity necessary in public housing, due to the close quarters in which tenants lived, was often unreasonable. The most significant federal housing legislation to be enacted between 1949 and the 1970s was the Housing Act of 1959, which established a direct loan program for senior citizens in need of housing aid.

Although local housing authorities continue to be supported with federal funding through the Department of Housing and Urban Development (HUD), the federal government no longer pays to build housing projects. HUD organizes all public housing in the United States. Federal programs begun in the last quarter of the twentieth century, the Section 8 Housing Program and HOPE VI have involved government encouragement of and partnership with private sector entities to provide low cost housing and to redevelop distressed public housing projects as mixed communities. Since 2001, HUD has increasingly diverted funds from public housing toward home ownership programs. Many such programs including the "Renewing the Dream" tax credit work to encourage private sector housing developers to construct housing for low income residents. HUD has also formally recognized the persistence of inequalities in the conditions of housing for racial minorities and persons with disabilities.

Section 8

In reaction to the problems associated with the aging stock of public housing and increased requirement for low cost housing for those in need, the U.S. Congress passed legislation enacting the Section 8 Housing Program in 1974, which Richard Nixon signed into law. Section 8 encourages the private sector to construct affordable homes and assists poor tenants by giving a monthly subsidy to their landlords. This assistance can be project based, "which applies to specific properties", or "tenant based," which provides tenants with a voucher they can use anywhere vouchers are accepted. Since 1983, almost no new project based Section 8 housing has been produced. Effective October 1, 1999, existing tenant based voucher programs were merged into the Housing Choice Voucher Program, which is today the primary means of providing subsidies to low income renters.

HOPE VI

In 1989, a National Commission on Severely Distressed Public Housing was named and charged with proposing a National Action Plan to eradicate severely distressed or obsolete public housing by the year 2000. The HOPE VI program, formerly known as the Urban Revitalization Demonstration Program (URD), was created for the purpose of revitalizing severely distressed or obsolete public housing developments. HOPE VI was authorized by the Departments of Veterans Affairs and Housing and Urban Development and Independent Agencies Appropriations Act of 1993. It was also authorized, with slight modifications (amending Section 24 of the 1937 Housing Act), by Section 120 of the Housing and Community Development Act of 1992. PHAs located in one of the 40 most populous U.S. cities and PHAs on HUD's Troubled Housing Authority list are eligible to apply for HOPE VI funds.

Public Housing in Alexandria

Overview

The history of public housing in the City of Alexandria may be traced to the last years of the 1930s, beginning with the establishment of the Alexandria Housing Authority and planned USHA slum clearance efforts in the city. In the early 1940s, several temporary public housing projects for defense workers - war trailer camps - were established in the city. Several permanent public housing projects, including Ramsey Homes, were constructed by 1945. Segregation of the city's public housing appears to have been a constant component of the system. In 1965, with the integration of two African American families into the previously "whites only" Cameron Valley Homes, project efforts to remedy this situation were made (WP 1965: C1).

The Alexandria Housing Authority

In June 1939, the Alexandria Housing Authority was formally established as a public agency under the Housing Authority Law, Chapter 1, Title 36 of the Code of Virginia of 1938, as a result of work done by the local Council of Social Agencies and the Woman's Club. Reportedly, the municipal authorities were originally opposed to the creation of the agency; however, the city appropriated $3000, granted as a loan, to fund the Authority, pending anticipated financial assistance from the USHA. In 1940, the agency had one permanent full-time employee, the executive director; two part-time typists; and an architect hired on a contingent basis (Woodbury 1940: 140). Later renamed the Alexandria Redevelopment and Housing Authority (ARHA), the primary mission of the agency has been to provide sanitary and safe dwelling accommodations

to persons of low income at affordable rents in the city. ARHA's annual operating cost and capital funding for the upkeep and maintenance of ARHA properties are funded by the U.S. Department of Housing and Urban Development (HUD). The City appoints the nine members of the ARHA Board of Commissioners.

Slum Clearance in Alexandria

In a letter to the editor of the *Washington Post* in December 1935, a citizen of Alexandria expressed outrage at the paper's hostility to the emerging federal housing program and its contention that local government could handle the housing crisis:

> In my own hometown I know of no present or past attempts to remove the slum dwellings or even discuss the possibility of removing them. Shacks that were formerly grog shops and houses of worse repute are now renovated with a coat of paint, brass dooor-knockers [sic], green shutters, foot scraper, and a tub and are rented to the stupid petit bourgeois for fabulous sums while the former inhabitants are turned out to shift for themselves and develop bigger and better slums by their shifting…your "local government" is a non-entity and has failed to alleviate conditions… (WP 1935: 8).

In October 1939, the USHA earmarked $900,000 for use by the Alexandria Housing Board in a program of slum clearance and the construction of "200 family units that may be individual dwellings, row houses or single apartments." Provisions for slum clearance mandated that for each unit constructed an existing unit would be renovated or razed. The units were expected to rent from between $14 and $18 monthly and were to be made available to families earning less than $75 per month (WP 1939:12).

According to a letter to the editor of the *Washington Post*, slum clearance in Alexandria was underway by the beginning of 1941, the author informed:

> …of a situation which exists in the town of Alexandria…about the close of the year notices went out to various colored families living in Alexandria, in that area near the railroad tracks between Oronoco and Princess Streets, that because of the slum clearance in charge of the Housing Authority, these families must vacate the shacks in which they then lived and move to other homes so that better houses might be erected there.
>
> …However, they did not move…and on January 2, 1941 the wrecking crews came…Today I received word that the houses on Princess Street are having their roofs taken off…all those people living in that row of houses, including a child with a broken neck, will be entirely homeless, without even the shelter usually given to animals…Alexandrians are content to allow people to be treated worse than animals.
>
> It seems that the Housing Authority should have…ascertained whether there were enough places for these people to move… (WP 1941:10).

In a 1944 interview, Virginia's U.S. Representative Howard Smith noted "the extremely pressing problem of District slums and the dire need here for proper Negro housing." Smith remarked on the recent efforts toward slum clearance and public housing in Alexandria:

> Over in Alexandria we can see in a small way the blessings of slum clearance. There are two blocks down there of fine brick dwellings for Negroes, with backyards and plenty of air and sunlight. They replaced former slums. It is deeply gratifying to see the pride and self-respect which a decent place to live has engendered in the occupants of these homes. They are beautifully kept (WP 1944a:B1).

Proponents of the Taft-Ellender-Wagner Housing Bill of 1948 noted that Alexandria, with a population of about 75,000, had available only 421 rental housing units for low income families (130 units for white families, 291 units for African-American families), not including those allotted for military personnel (WP 1948:15). Former defense housing, including Ramsey Homes, was acquired by ARHA for use as public housing in the 1950s, and additional public housing was constructed in the 1950s and throughout the latter half of the twentieth century to address the housing needs of low-income families.

In 1985, a group called "The 16th Census Tract Crisis Committee" accused city officials of deliberately reducing and eliminating housing opportunities for African Americans in the city, beginning in the 1960s (*Washington Post* 1985: F1). They filed a complaint with HUD, that the constitutional rights of African Americans were violated by city actions. Backed by the NAACP Legal Defense Fund, The 16th Census Tract Crisis Committee singled out the following city actions as violating the Civil Rights Act of 1968 (*Washington Post* 1985:F2). Among other things, they complained that the city was:

Using zoning code, code enforcement or condemnation to demolish homes occupied by African Americans without providing affordable alternatives;

Rejecting planned urban renewal projects and renovating housing units that were generally too expensive for African Americans;

Closing the historically African-American Parker-Gray High School and reselling the property for commercial and upper end housing use rather than low income housing; and

Enacting a 1984 ordinance that designated the Parker-Gray African-American community as a special preservation district.

Residents of the primarily African-American Parker-Gray neighborhood opposed the extension of the Old Town Historic District into the neighborhood as it would increase property values and property taxes and force them from their homes (*Washington Post* 1984:C1).

Ramsey Homes Defense Housing

During the Second World War, the United States Housing Authority (USHA) constructed Ramsey Homes, then known as Lanham Act Alexandria Defense Housing Project VA-44133, as permanent housing for African-American defense workers. Alexandria architect and

architectural historian Delos H. Smith, FAIA, of Smith, Werner, and Billings Architects, proposed two Modernist designs for the project. The first option consisted of three buildings comprising nineteen units, while the second option consisted of three four-unit foursquares and a three-unit L-shaped building constructed of more economical materials complex. The final plan included landscaping and a simple paved play area within the L of the triplex.

According to documents related to his nomination as a Fellow of the American Institute of Architects, Delos Hamilton Smith was born in 1884 in Willcox, Arizona, but graduated from high school in Washington, D.C. He received his bachelor's degree in architecture from George Washington University in 1906 and his M.A. from the same school in 1916. Smith concentrated heavily on ecclesiastical structures and was also an authority on early American architecture, presenting a study of over 250 colonial churches to the Library of Congress, publishing numerous articles on historic architecture, and serving on the Alexandria Board of Architectural Review for several years beginning in 1947. He and his firm also designed 440 public housing units, including the Ramsey Homes, for the U.S. Housing Authority in the late 1930s and early 1940s. Smith was made a Fellow of the American Institute of Architects in 1952.

Approval for construction of Ramsey Homes was attained in November 1941. It was completed in November 1942. Some units were already occupied prior to the entire project's completion. The original residents of the complex were African American defense workers, but their identities were kept secret as a matter of national security. The 1945 Alexandria City Directory does not list the odd-numbered addresses on the 600 block of N. Patrick Street as a result of this policy. Similarly, photographs and information concerning the Naval Torpedo Station on the waterfront, which employed an integrated work force and where residents of Ramsey Homes may have worked, were similarly withheld from public access until after World War II (*Washington Post* 2014).

The Alexandria City Directory for 1947 listed the residents of the Ramsey Homes project in that year. Two of the listed residents, Carneal Coffee and Cleveland B. Tivy, appear to have been associated with the defense industry, their occupations listed as "USA" (perhaps the Army) and "Clerk War Dept." respectively. Other residents listed include Will Daniels, barber; George W. Witherspoon, auto mechanic; and Charles E. Smith, janitor. All of the residents were noted to be African American. The appearance of listings for the Ramsey Homes residents in 1947 reflects the end of the policy of secrecy that likely caused their omission from the wartime city directories, and the listed occupations of the residents suggests that the housing was no longer restricted to defense workers.

After World War II, the Federal Public Housing Authority sought to sell the Ramsey Homes; the City of Alexandria contemplated the purchase of the site, and the *Washington Post* reported that the Mayor of Alexandria claimed the wartime housing did not meet city building codes and were therefore "substandard" (*Washington Post* 6 October 1946:5). The property did not leave federal hands until 1953, when the ownership of Ramsey Homes was transferred to the Alexandria Redevelopment and Housing Authority (Alexandria Deed Book 356:407), which remains the owner and manager of the property.

In 1959, ARHA noted that of its 4942 tenants, occupying 1,247 dwelling units across eight development projects including the Ramsey Homes, "...almost all came from dismal,

substandard, or overcrowded quarters," were "generally happy in their surroundings" and had greatly benefitted from public housing (ARHA 1959: 2).

Other Housing Projects in the Vicinity of the Ramsey Homes

Several other public housing projects have been constructed in the vicinity of the Ramsey Homes and the Parker-Gray District. The earliest projects were built in the 1940s, as either defense housing or slum clearance public housing. The following brief descriptions of public housing projects are presented in chronological order by construction date.

John Roberts Homes

The first public housing project completed in the Uptown/Parker-Gray area was the segregated "whites only" John Roberts Homes, built in 1941 in the block bound by Oronoco Street, E. Braddock Road, N. West Street, and the RF&P Railroad line. John Roberts Homes consisted of twenty-one wood-frame buildings each of which contained between four and ten units. The projects were razed in 1982 and replaced by the Colecroft residential development.

George Parker (Hopkins-Tancil Courts)

George Parker Homes, renamed Hopkins-Tancil Courts in the 1980s, were located on two blocks bounded by Fairfax Street, Royal street, Pendleton and Princess Streets. The housing consisted of two-story brick buildings constructed for military housing circa 1942 and later turned over to Alexandria Redevelopment and Housing Authority for use as public housing units for low income African American families (WP: 2001).

Samuel Madden Downtown

The Samuel Madden Homes (Downtown), a 100-unit public housing complex, represents an early public housing development in the city, built between ca. 1942 and 1959. It was built adjacent to the George Parker Homes and, together, the projects occupied two contiguous blocks, bounded by Pendleton Street to the north, Princess Street to the south, North Royal Street to the east, and North Pitt Street to the west. The earliest units were two-story brick buildings constructed for military housing circa 1945 (WP: 2001).

The project, named for the first African-American pastor of the Alfred Street Baptist Church, was initiated as part of a program of slum clearance, with the "blighted" area extending well beyond the site of the public housing units, and including areas north of Madison Street and west of N. Fairfax Street. After clearance, some of the land became the location of temporary houses built to provide displaced families a place to live while the Samuel Madden Homes were under construction.

Samuel Madden Uptown

Samuel Madden Homes (Uptown) were built in 1945, in the 900 blocks of Patrick and Henry Streets and the 1000 block of Montgomery Street, and are a non-contiguous element of the Samuel Madden (Downtown) project several blocks to the east of the Parker-Gray District. The Samuel Madden Homes and the later James Bland project were all the work of architect Joseph Saunders, and are very similar in design. Each project includes side-gabled brick row houses, sometimes with six or more repeated in a row, and placed around landscaped garden areas that are oriented to face into the north-south streets.

Through oral history interviews with residents who lived in the neighborhood and in the Samuel Madden Homes and James Bland Homes public housing projects in the 1940s and 1950s, it has become apparent that little distinction was made by the residents between the Samuel Madden Homes (Uptown) and the later and adjacent James Bland Homes projects. Typically, both were known as "the projects." Perhaps due to confusion associated with Samuel Madden Homes (Downtown), Samuel Madden (Uptown) is frequently referred to as James Bland by area residents.

James Bland

The James Bland Homes occupied two entire and three partial city blocks bounded by First, N. Patrick, Madison, N. Alfred, Wythe, and N. Columbus Streets. Constructed in 1954 and 1959, the project was named for James Alan Bland, a nineteenth-century African American musician and songwriter. Although formally integrated, the complex became almost entirely African American after the completion of the project. The James Bland project is currently in the process of being redeveloped as mixed low-income and market-rate housing units.

Jefferson Village

The Jefferson Village public housing complex was built in 1968 at the corner of Princess and N. West Streets. The buildings are brick row houses and apartment structures built in a late Modern Movement style.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character:

   Buildings I, III, and IV are identical two-story quadruplexes with low-pitched hipped roofs. Building II is an L-plan two-story triplex with a cross-hipped roof. The square shape of three of the buildings and the replacement of flat roofs with hipped ones after 1964 altered their style from vernacular Modernist to vernacular Prairie foursquares. Alterations made in 1995 introduced Colonial Revival elements with vinyl paneled doors, vinyl windows, and inoperable aluminum shutters.

2. Condition of fabric:

   The buildings have been well maintained.

B. Description of Exterior:

1. Overall dimensions:

    a. Triplex building width (excluding porch extension) - 45' x 43’6.5”

    b. Quadplex building width (excluding porch extension) – 43’6” x 36’5”

2. Foundations: Poured concrete

3. Walls: Fabcrete, cement blocks with stucco

4. Structural system, framing: Fabcrete, cement blocks

5. Porches, stoops, balconies, bulkheads: Poured concrete. Entrances are inset and paired side-by-side such that each quadruplex has two facing north and two facing south. The triplex has one facing south and two facing north. Pent roofs project over concrete pads which extend into the yard and are surrounded by a concrete and stucco half walls with precast concrete coping.

6. Chimneys: Metal flue

7. Openings:

    a. Doorways and doors: Paneled vinyl or metal doors are roughly centered on each unit.

    b. Windows and shutters: Paired one-over-one windows with brick aprons are situated next to the doors towards the interior dividing wall on the north and south elevations. Larger one-over-one windows are situated on the opposite side of the door towards the corner of each building. The elevations facing the east and west contain two one-over-one windows on each floor of each unit, for a total of eight symmetrically positioned windows. They are all vinyl replacement double-hung sashes flanked by decorative aluminum louvered shutters dating to 1995.

8. Roof:

    a. Shape, covering: Hipped (Buildings I, III, IV) and Cross-hipped (Building II) with continuous membrane or a bituminous asphalt product

    b. Cornice, eaves: Vinyl dating to 1995

    c. Dormers, cupolas, towers: Raised skylights removed between 1964 and 1979

C. Description of Interior:

1. Floor plans: There is a small living room (17’7” x 11’7”) with a closet under the stairs and a kitchen (9’x 9’) with open utility closet on the first floor of each unit. Two small bedrooms (14’5” x 9’5”) and one full bath (8’ x 10’) are located on the second floor.

2. Stairways: One stairway with wooden risers is located opposite the main entry door in the living room and runs across the length of the living room. It has a solid half-wall rail.

3. Flooring: Vinyl composition tile or carpet

4. Wall and ceiling finish: Plaster

5. Openings:

    a. Doorways and doors: The only exterior door is metal with six Colonial Revival panels and measures 3' wide. The bedroom and bathroom doors are wood with two simple panels and measure 2'6" wide.

    b. Windows: Simple trim and sills

6. Decorative features and trim: Simple crown molding

7. Hardware: Mass-produced contractor-grade brass

8. Mechanical equipment:

    a. Heating, air conditioning, ventilation: Gas furnace (originally coal-fired with coal chutes), Window-unit air conditioning, exhaust fans in bathroom dating to 1995 (originally ventilated by skylights)

    b. Lighting: Mass-produced contractor-grade fluorescent and incandescent fixtures installed 1995

    c. Plumbing: Updated in kitchen and bathroom 1995

D. Site:

1. Historic landscape design:

The property was originally surrounded by chain-linked fencing, which was replaced with black metal picket fences in 1995. It also contained a paved play area within the L of the triplex, which was removed and sodded with grass in 1995.

Sheet 8 of the final site plan dated October 10, 1941 provided the following "List of Plants" (Smith 1941b):

To be furnished & planted
Quantities are approximate only

Shade Trees (Deciduous)

1. Ailanthus Glandulosa (Tree of Heaven) – 4
2. Gleditsia Triacanthos (Honey Locust) – 3
3. Robinia Pseudoacacia (Black Locust) – 18

Flowering Shrubs (Deciduous)

4. Spirea Van Houttei (Van Houtte Spirea) – 15
5. Viburnum Dentatum (Arrow Wood) – 15

Hedge Plants

6. Ligustrum Begalum (Regals Privet) (Evergreen) – 57 (Actually L. obtusifolium var. regelianum, Regel Privet)
7. Crataegs Cordata (Wash. Thorn) (Deciduous) – 85

Vines

8. Ampelopsis Tricuspidata (Japanese Creeper) (Deciduous) – 8
9. Eyoonymus Patens (Evergreen Bittersweet) (Evergreen) – 30
10. Hedra Heliz (English Ivy) (Evergreen) – 8

Historic aerials show that it was generally followed. The 1995 renovation plans note that English Ivy was removed from the property. Any historic plant material left at that time was removed.

PART III. SOURCES OF INFORMATION

Primary and Unpublished Sources

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1941 Property Line Map. April 16. Prepared for the Housing Authority of the City of Alexandria by Edward S. Holland, Jr., Certified Land Surveyor, 624 King Street, Alexandria, Virginia. Included in Lanham Act Alexandria Defense Housing Project VA-44133 plans prepared by Smith, Werner, and Billings Architects, Alexandria, Virginia. On file at Alexandria Redevelopment Housing Authority and in Records of the Public Housing Administration, Textual Records, the National Archives at College Park Maryland

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E. Likely Sources Not Yet Investigated:

Additional research in the Records of the Public Housing Administration at the National Archives at College Park Maryland may yield more information. Conducting an oral history project with long-time residents of the neighborhood would also add to the understanding of the housing.

F. Supplemental Materials:

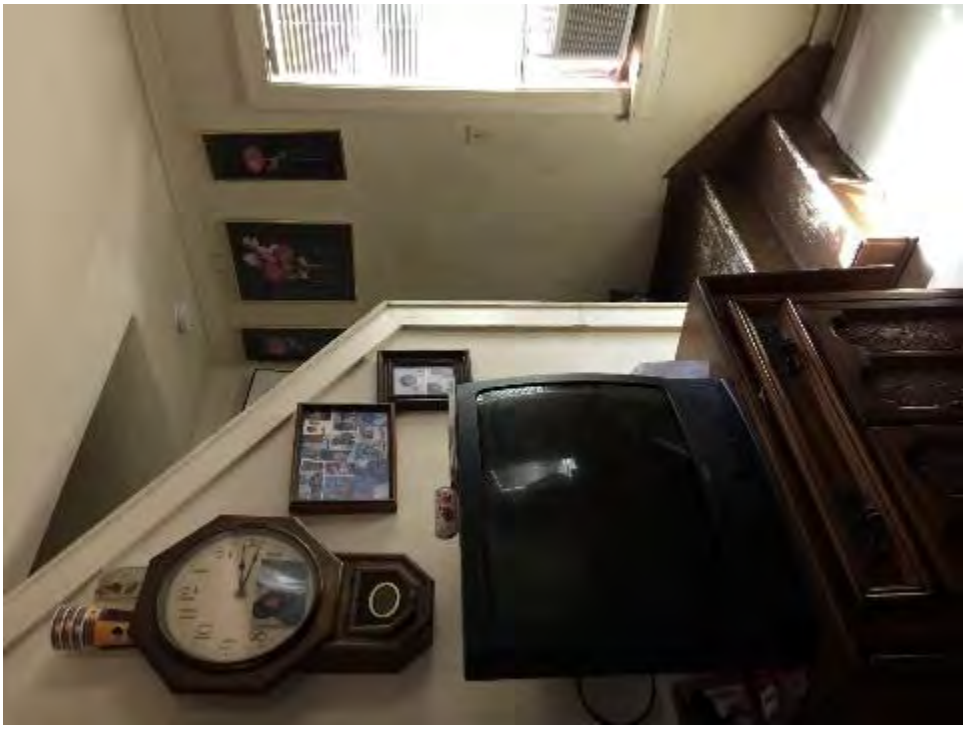
March 1957 Black and White Aerial Imagery of Alexandria, Virginia (USGS 1957).

Ramsey Homes, Building I (Anna Maas, June 29, 2015)

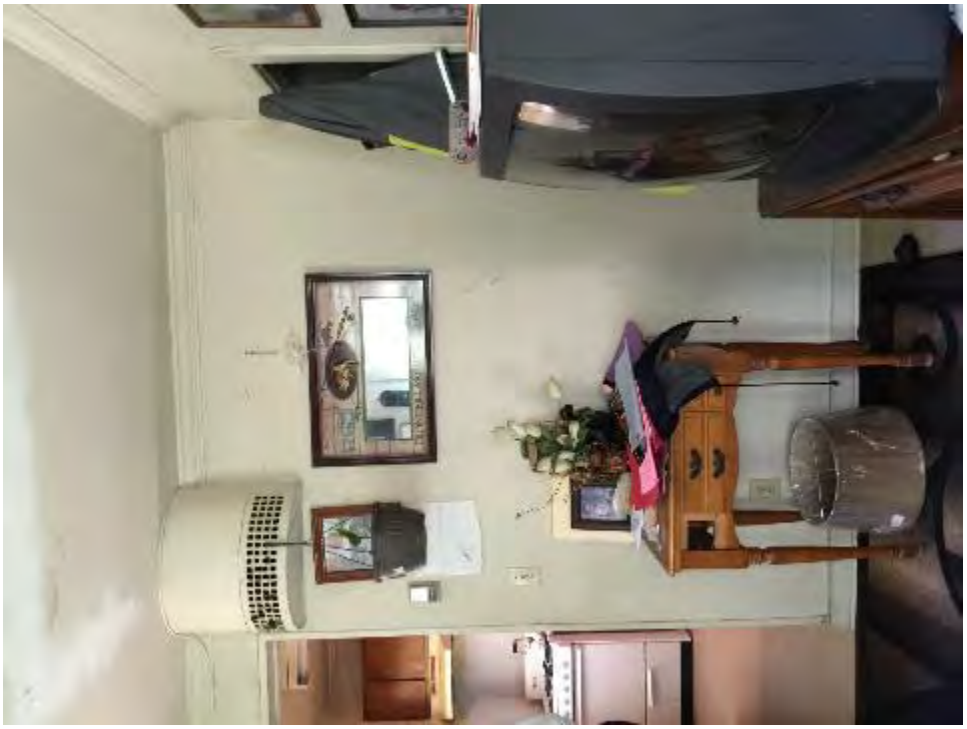
Ramsey Homes, Building II (Anna Maas, June 29, 2015)

Ramsey Homes, Building III (Anna Maas, June 29, 2015)

Ramsey Homes, Building IV (Anna Maas, June 29, 2015)

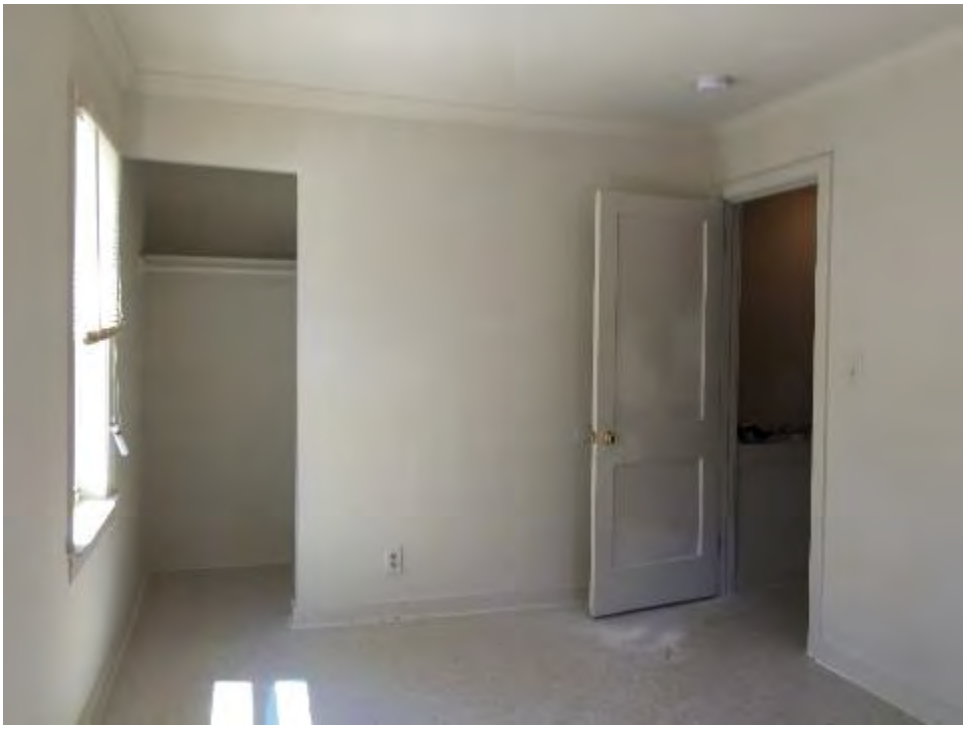


Ramsey Homes, Typical First Floor Living Room and Stairway (Anna Maas, June 29, 2015)



Ramsey Homes, Typical First Floor Kitchen, Living Room, and Heating Vent (Anna Maas, June 29, 2015)

Ramsey Homes, Typical First Floor Kitchen and Utility Rooms (Anna Maas, June 29, 2015)



Ramsey Homes, Typical Second Floor Bedroom (Anna Maas, June 29, 2015)

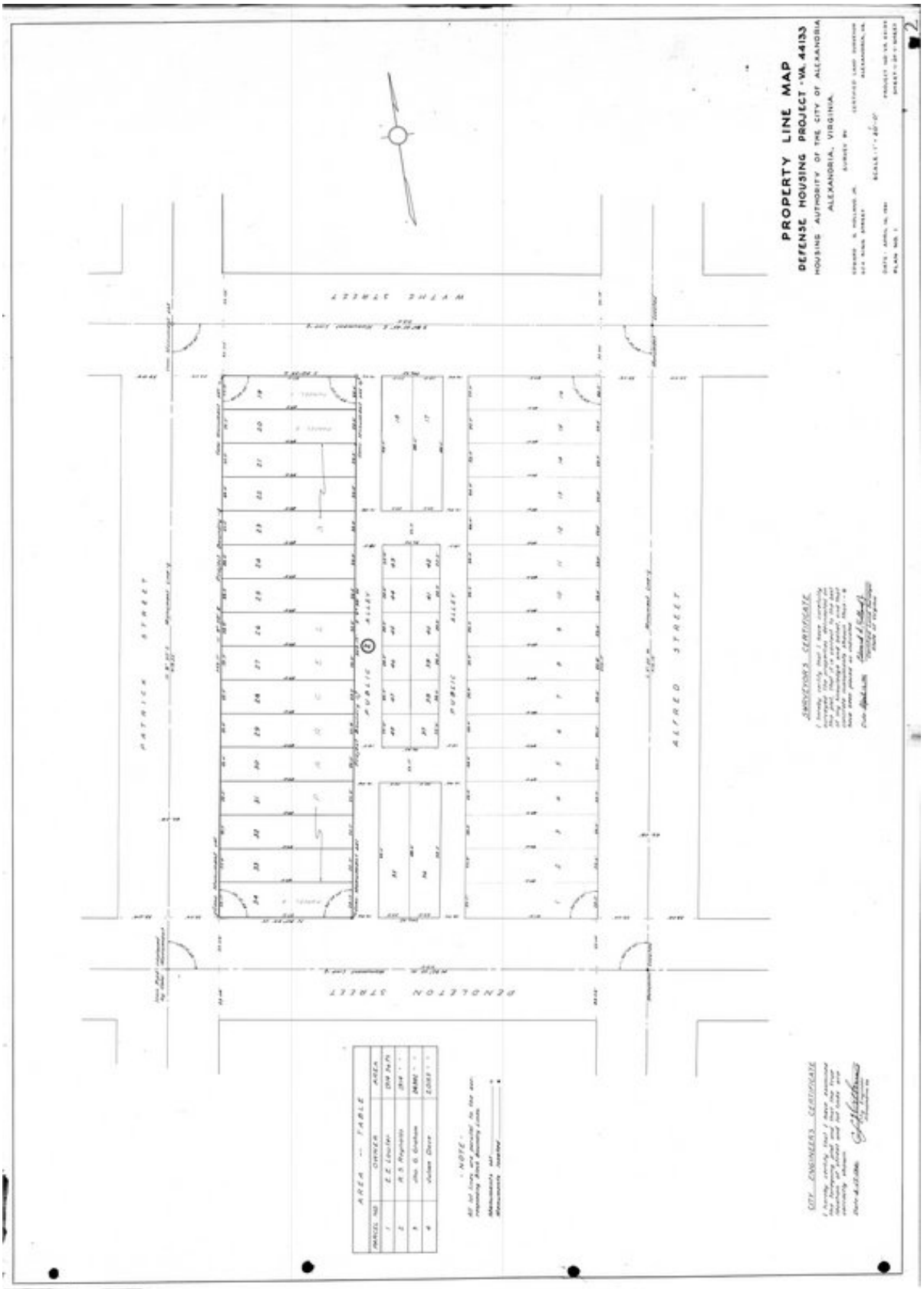
Ramsey Homes, Typical Second Floor Bathroom (Anna Maas, June 29, 2015)

The following pages contain images of measured drawings prepared for the Ramsey Homes in 1941 and 1995. They are from:

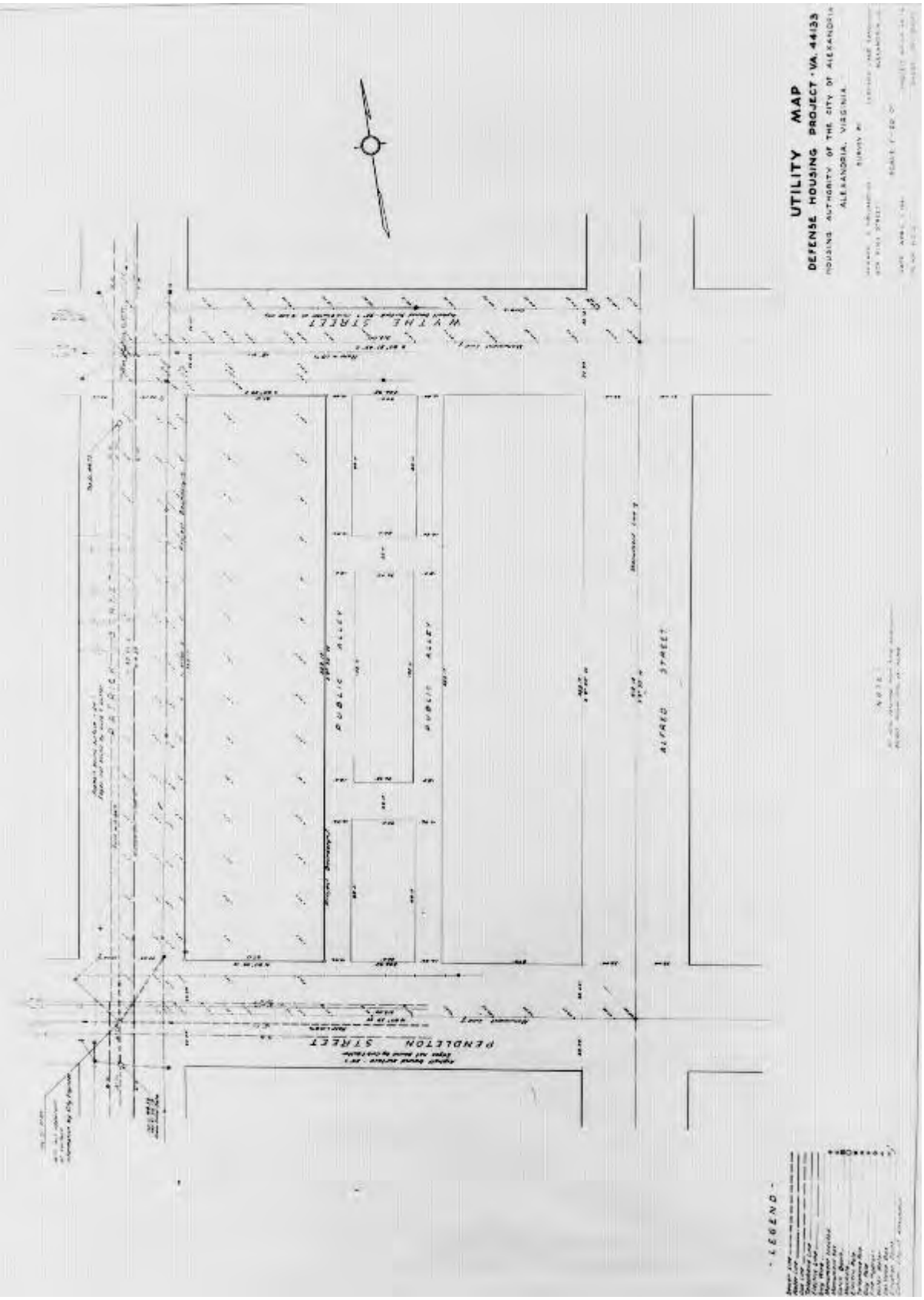
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133. Sheets 1-12. Prepared for the Federal Works Agency, United States Housing Authority by Smith, Werner, and Billings Architects, Alexandria, Virginia. On file at Alexandria Redevelopment and Housing Authority. (Sheets 6 and 10 are missing.)

October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133. Sheets 1-8. Prepared for the Federal Works Agency, United States Housing Authority by Smith, Werner, and Billings Architects, Alexandria, Virginia. RG 196, Records of the Public Housing Administration, Architectural and Engineering Plans, the National Archives at College Park Maryland.

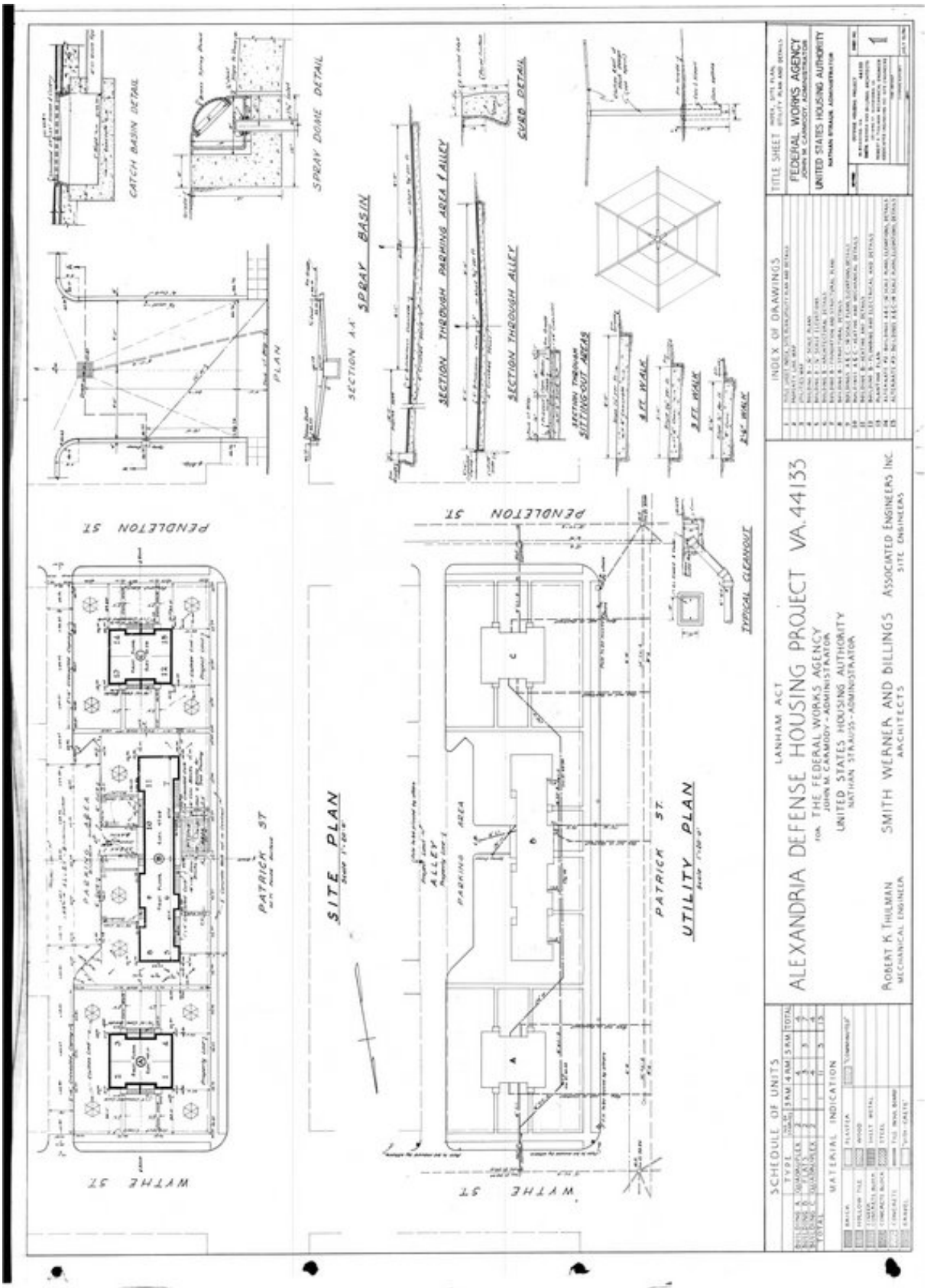
August 15, 1995, Plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community, Alexandria, Virginia. Prepared for Alexandria Redevelopment and Housing Authority by Sorg and Associates, P.C. On file at Alexandria Redevelopment and Housing Authority.



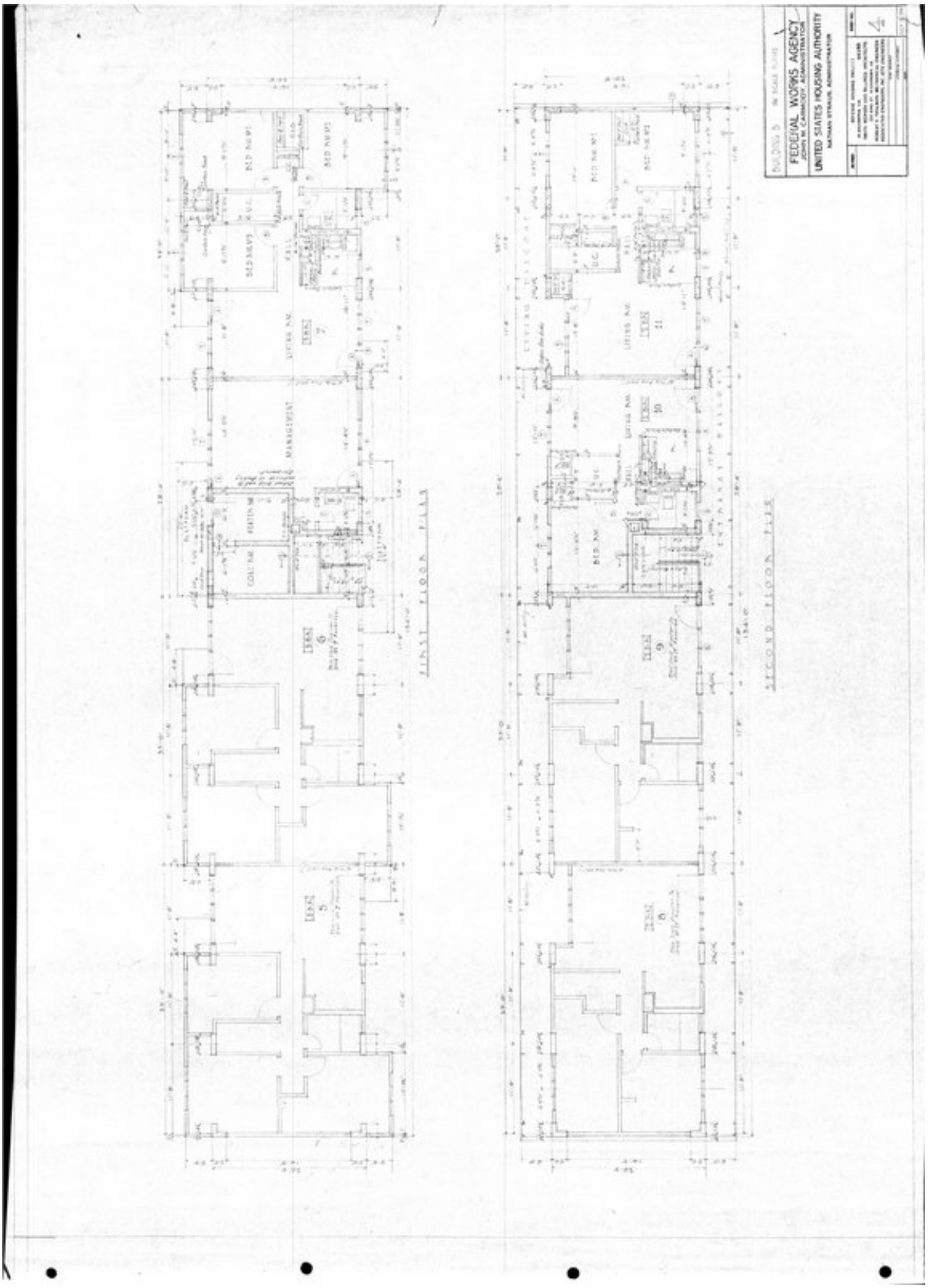
April 16, 1941, Property Line Map (Holland 1941), included as Sheet 2 in plans for Lanham Act Alexandria Defense Housing Project VA-44133 (Smith 1941a, 1941b).



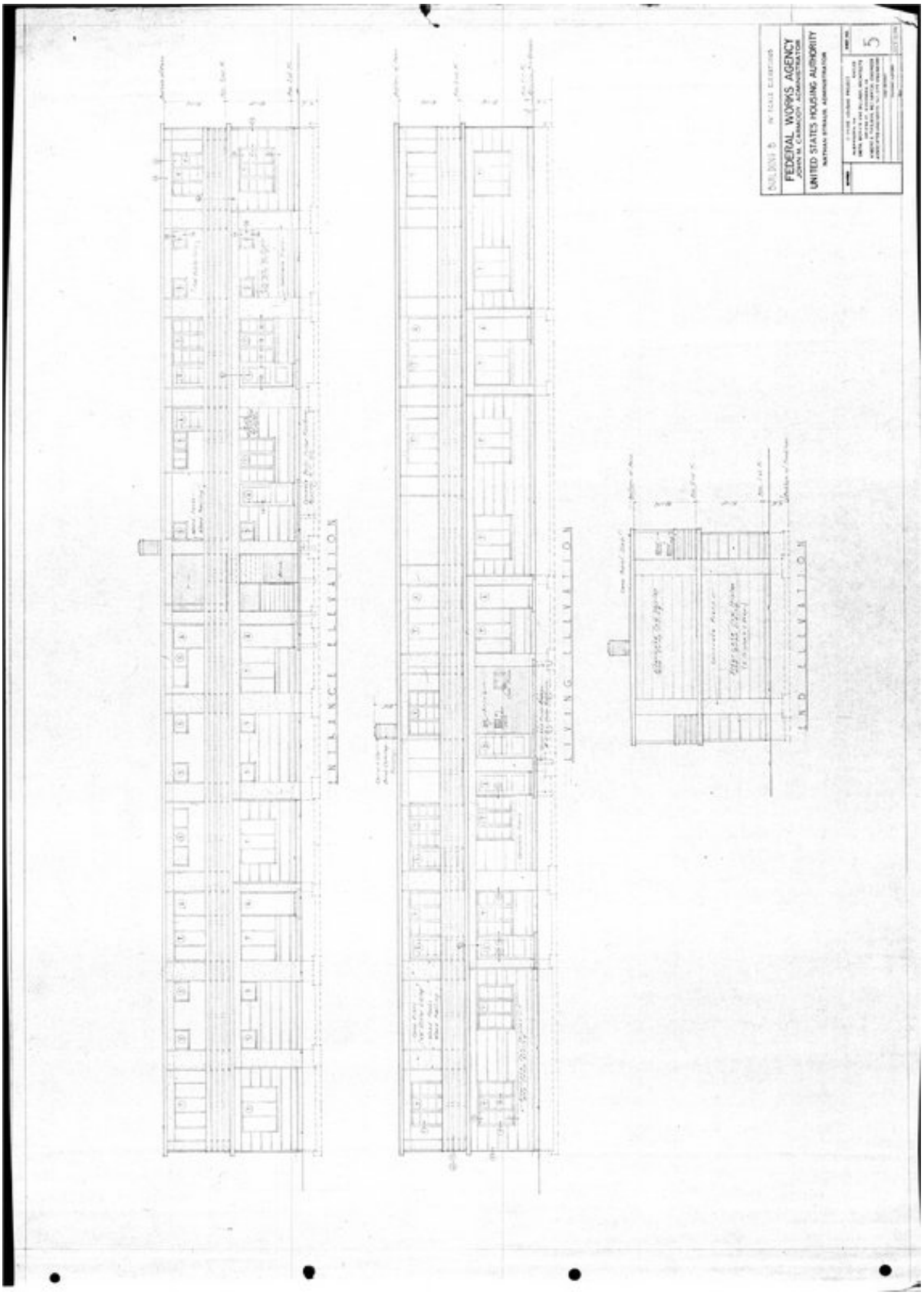
April 16, 1941, Property Line Map (Holland 1941), included as Sheet 3 in plans for Lanham Act Alexandria Defense Housing Project VA-44133 (Smith 1941a, 1941b).



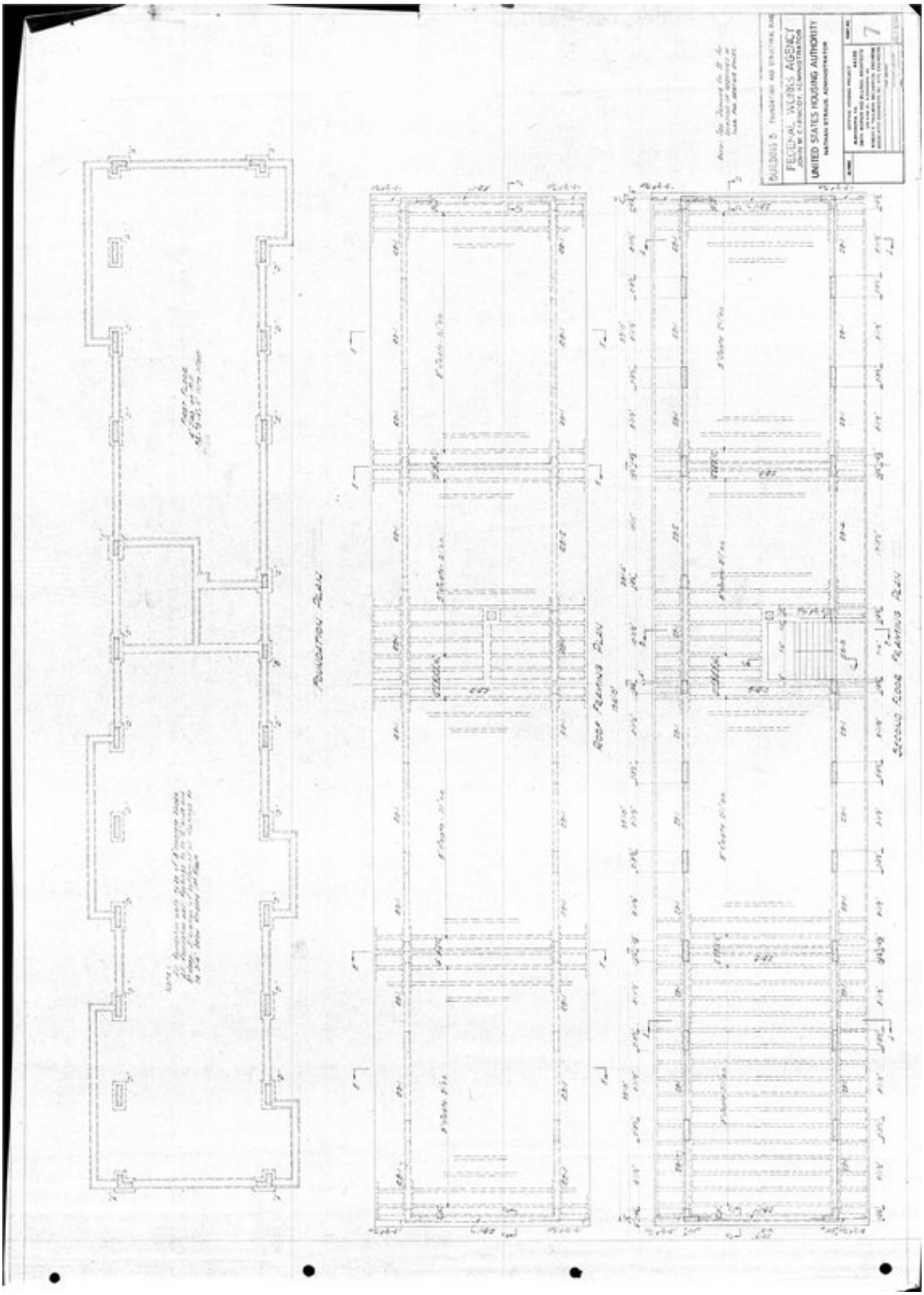
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 1, showing proposed site plans (Smith 1941a).



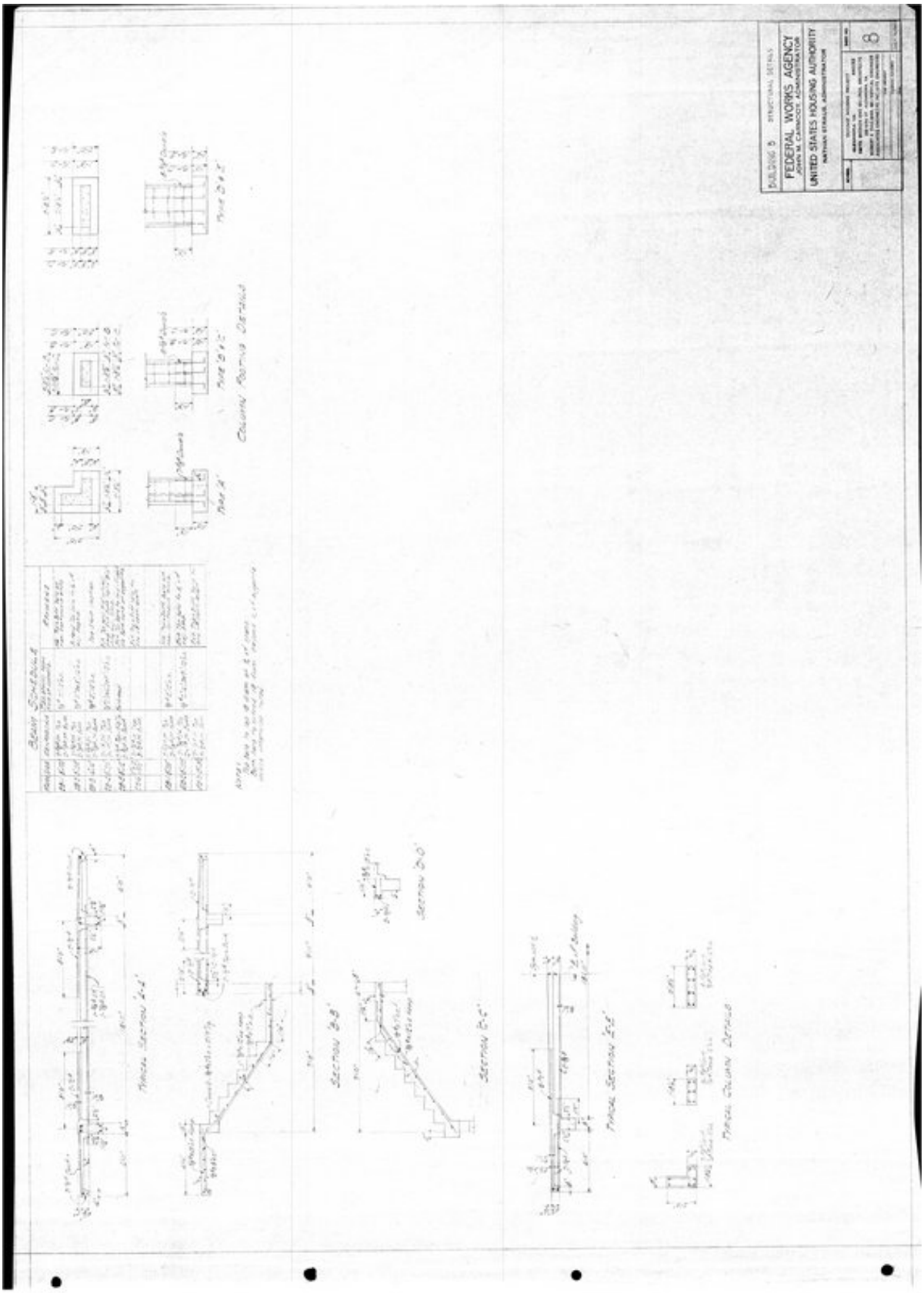
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 4, showing proposed first and second floor plans of flats (Smith 1941a).



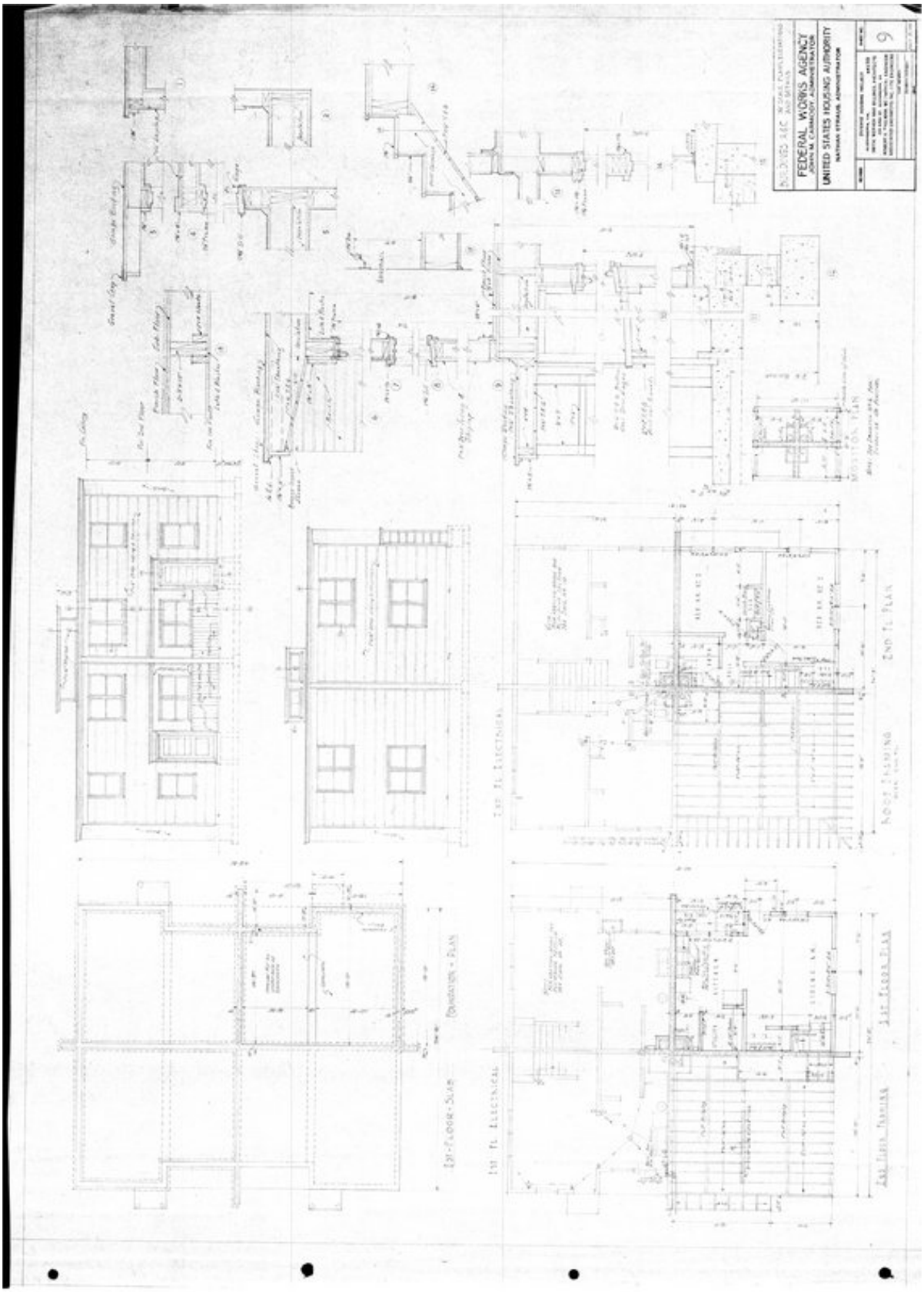
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 5, showing proposed elevations of flats (Smith 1941a).



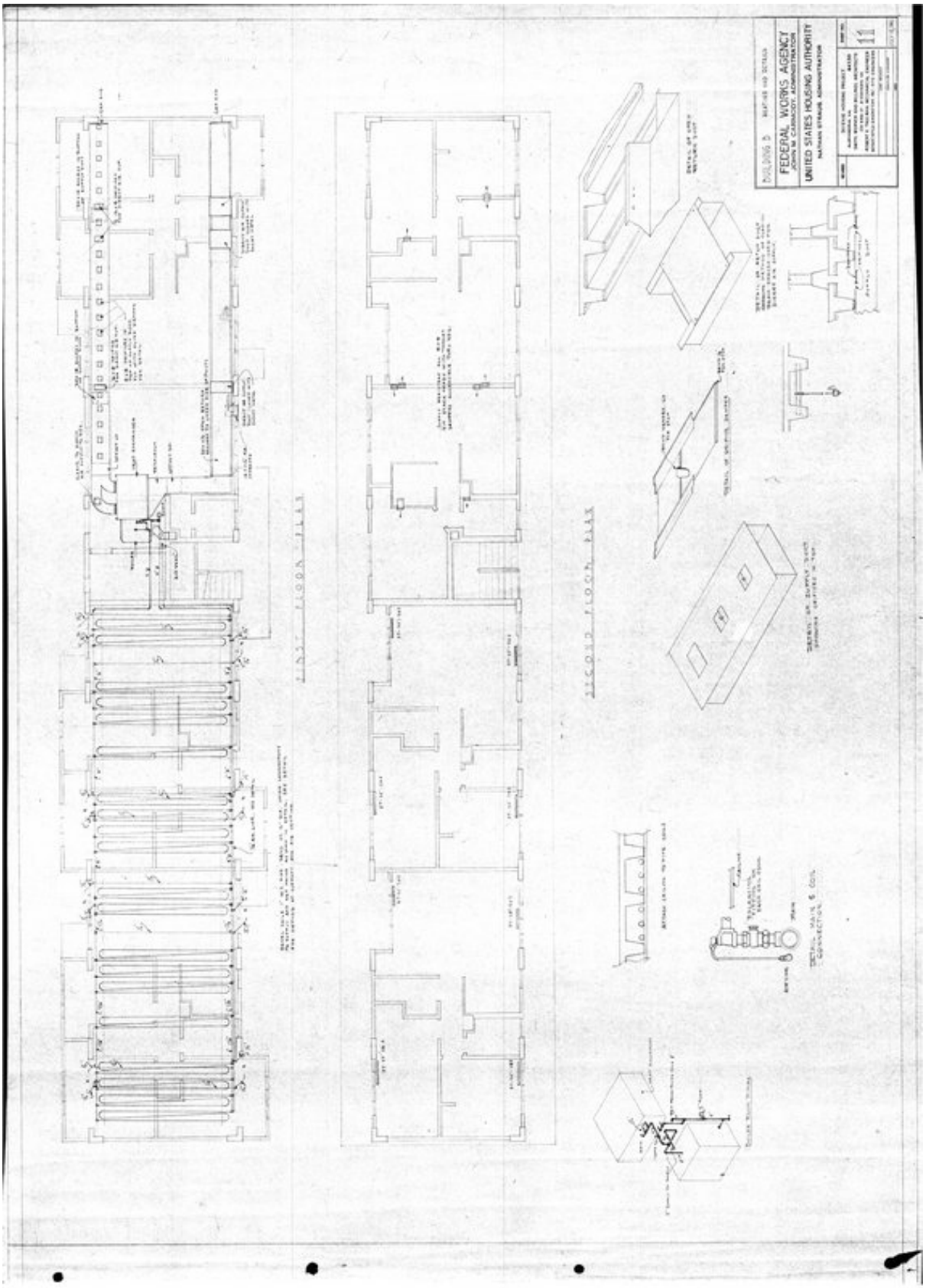
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 7, showing proposed foundation and framing plans of flats (Smith 1941a).



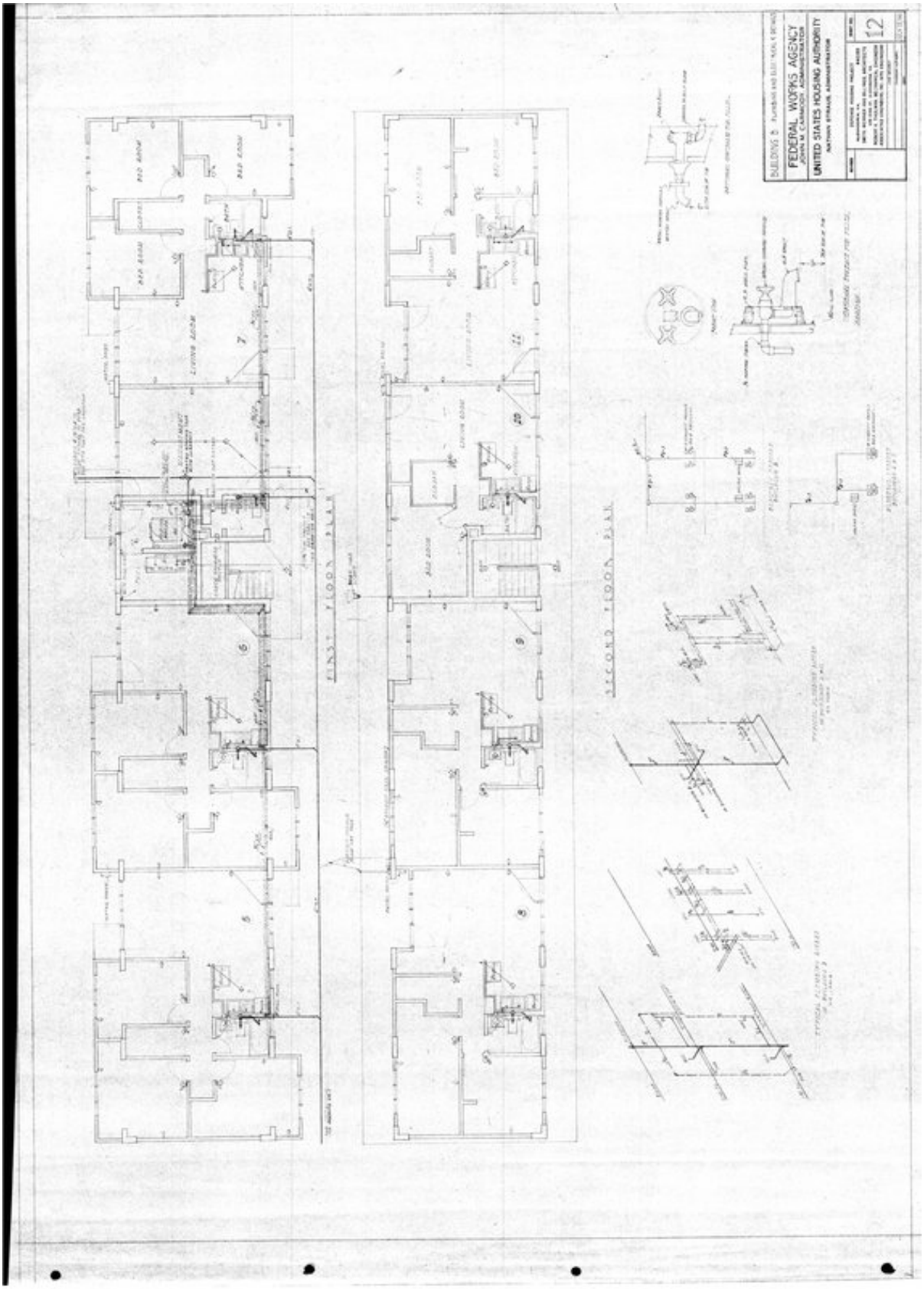
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 8, showing stairwell (Smith 1941a).



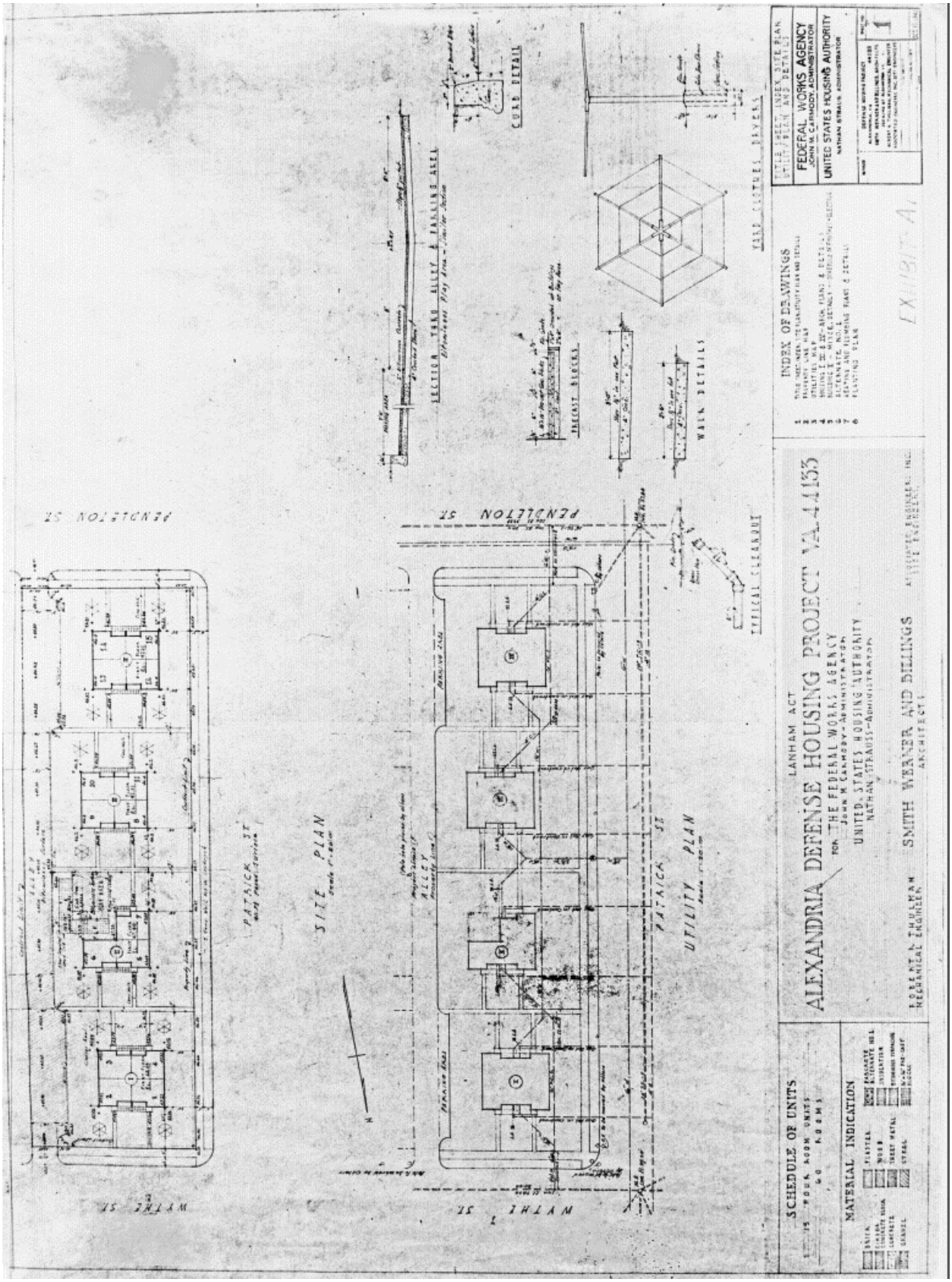
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 9, showing proposed plans and elevations of quadruplex (Smith 1941a).



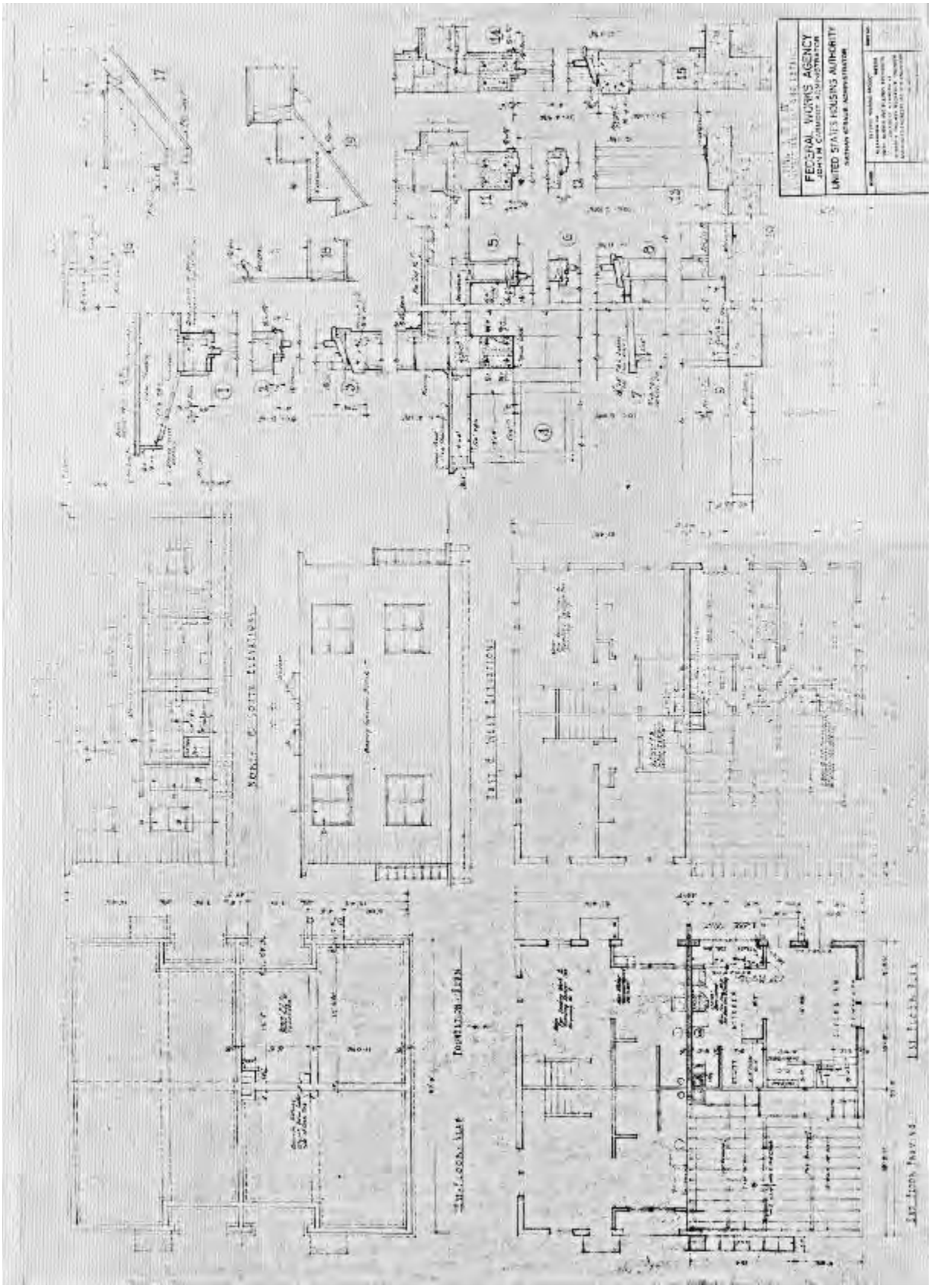
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 11, showing proposed plans of flats (Smith 1941a).



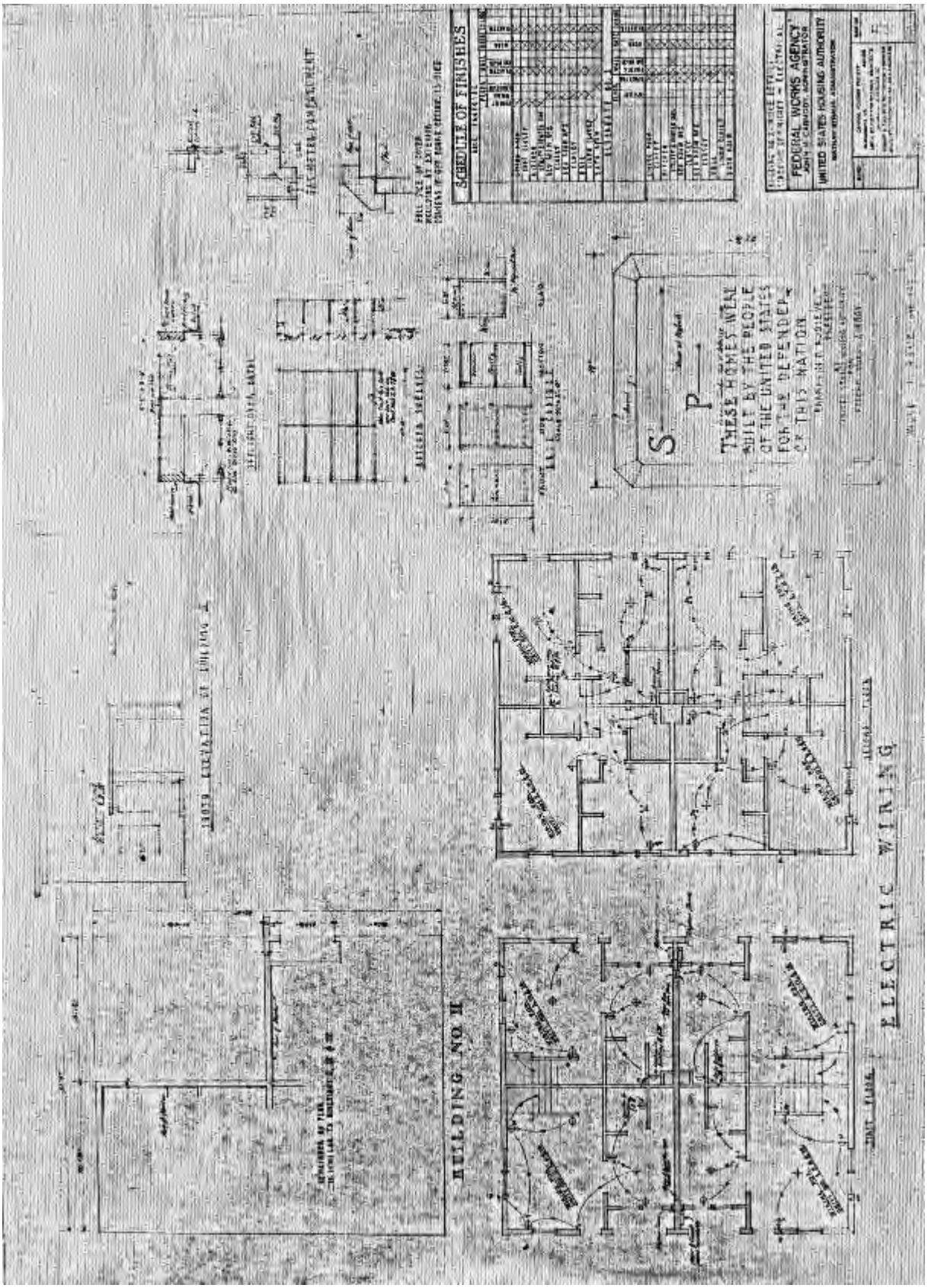
July 15, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 12, showing proposed plans and elevations of flats (Smith 1941a).



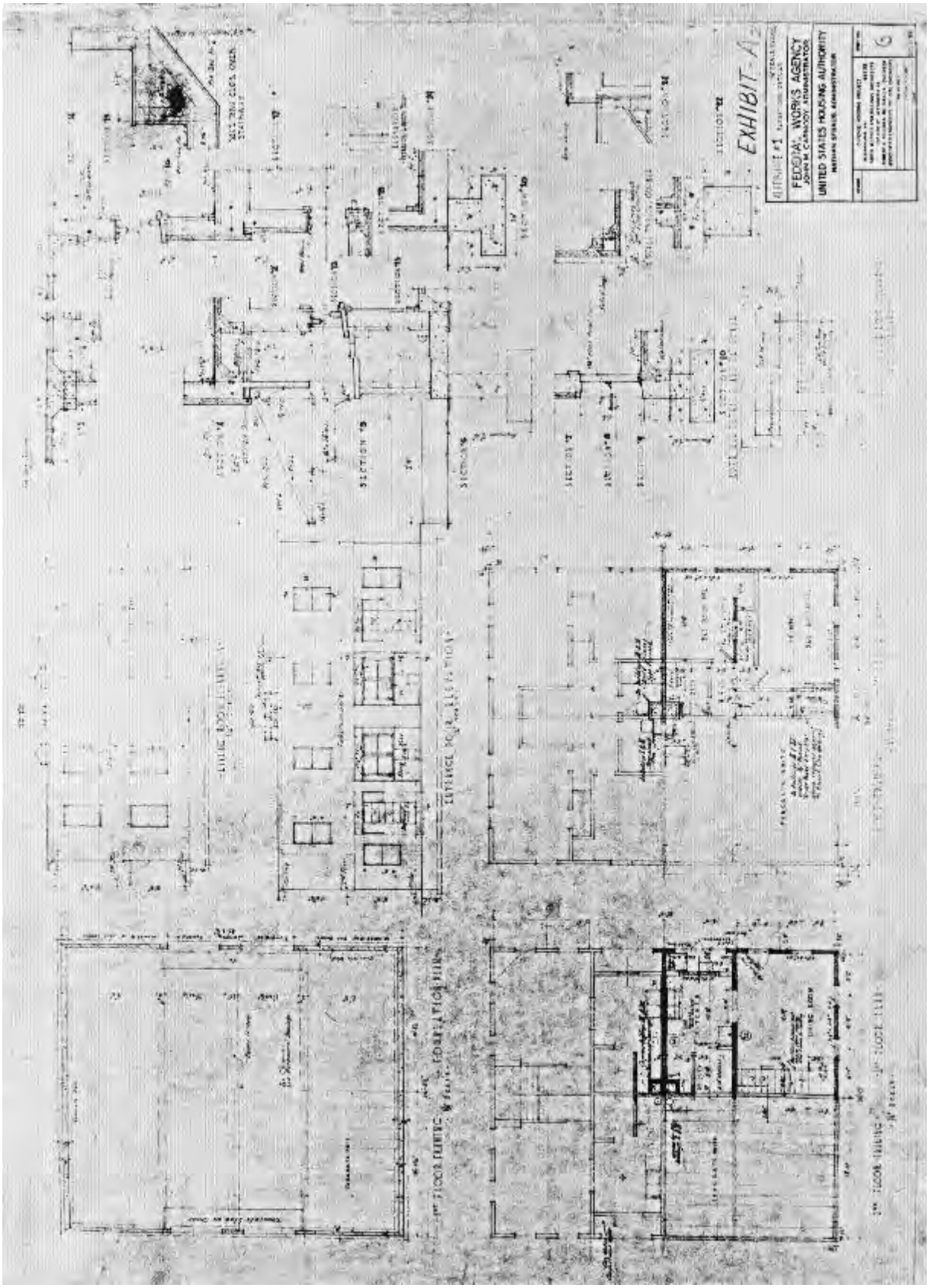
October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 1, showing proposed site plan (Smith 1941b).



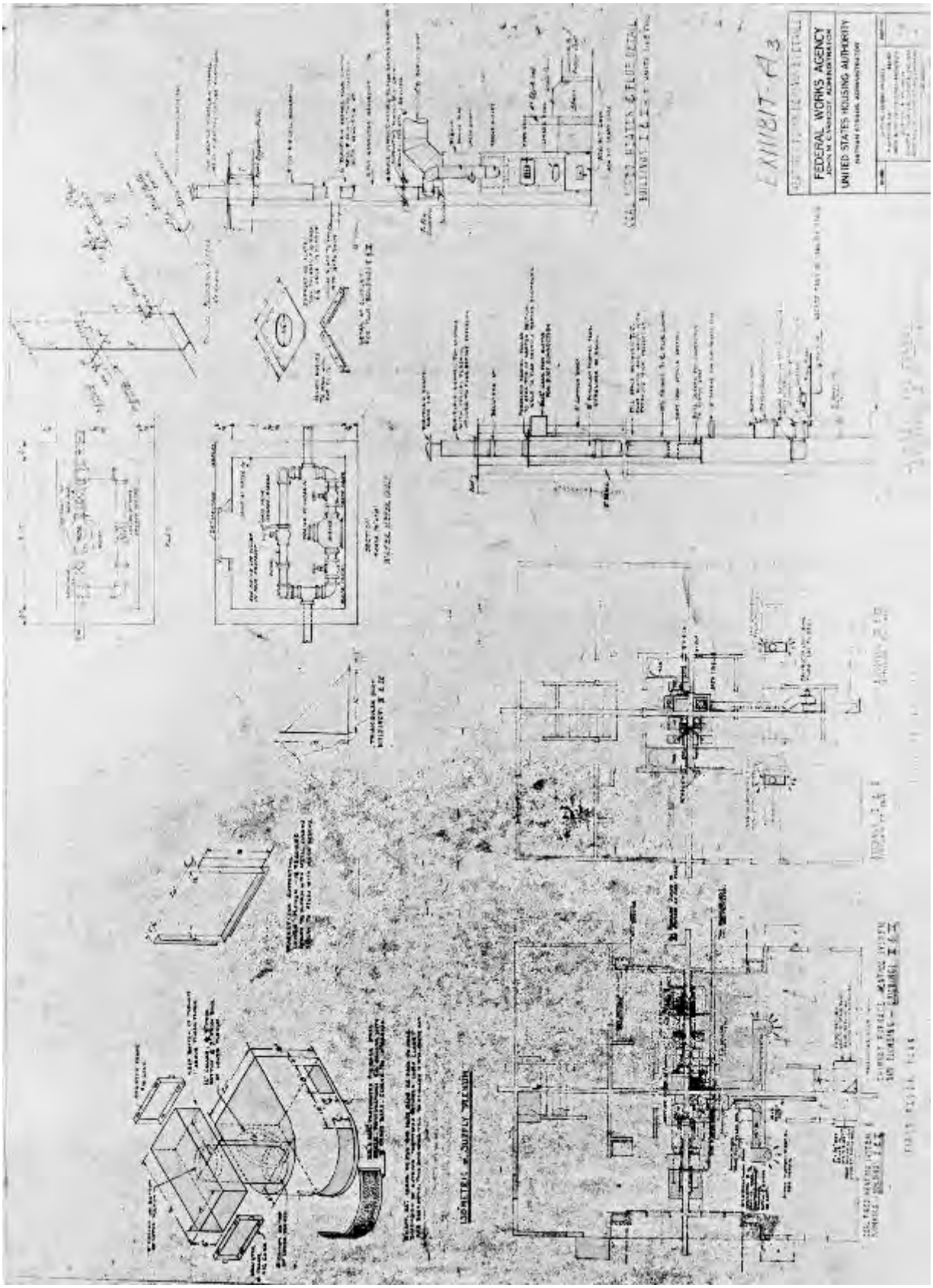
October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 4, showing proposed floor plans and elevations of qaudruplex (Smith 1941b).



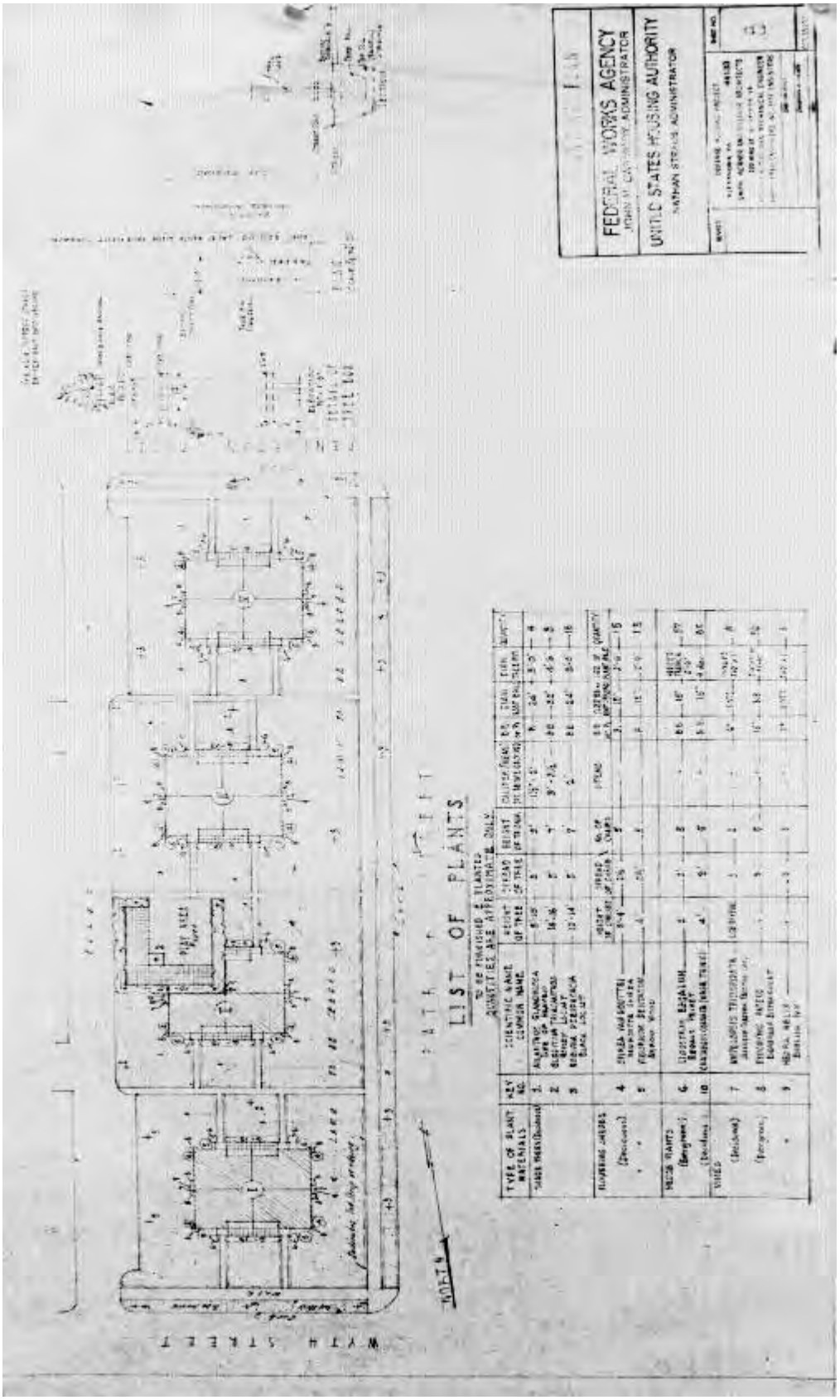
October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 5, showing proposed electrical plan and FWA plaque, which is not located at the property (Smith 1941b).



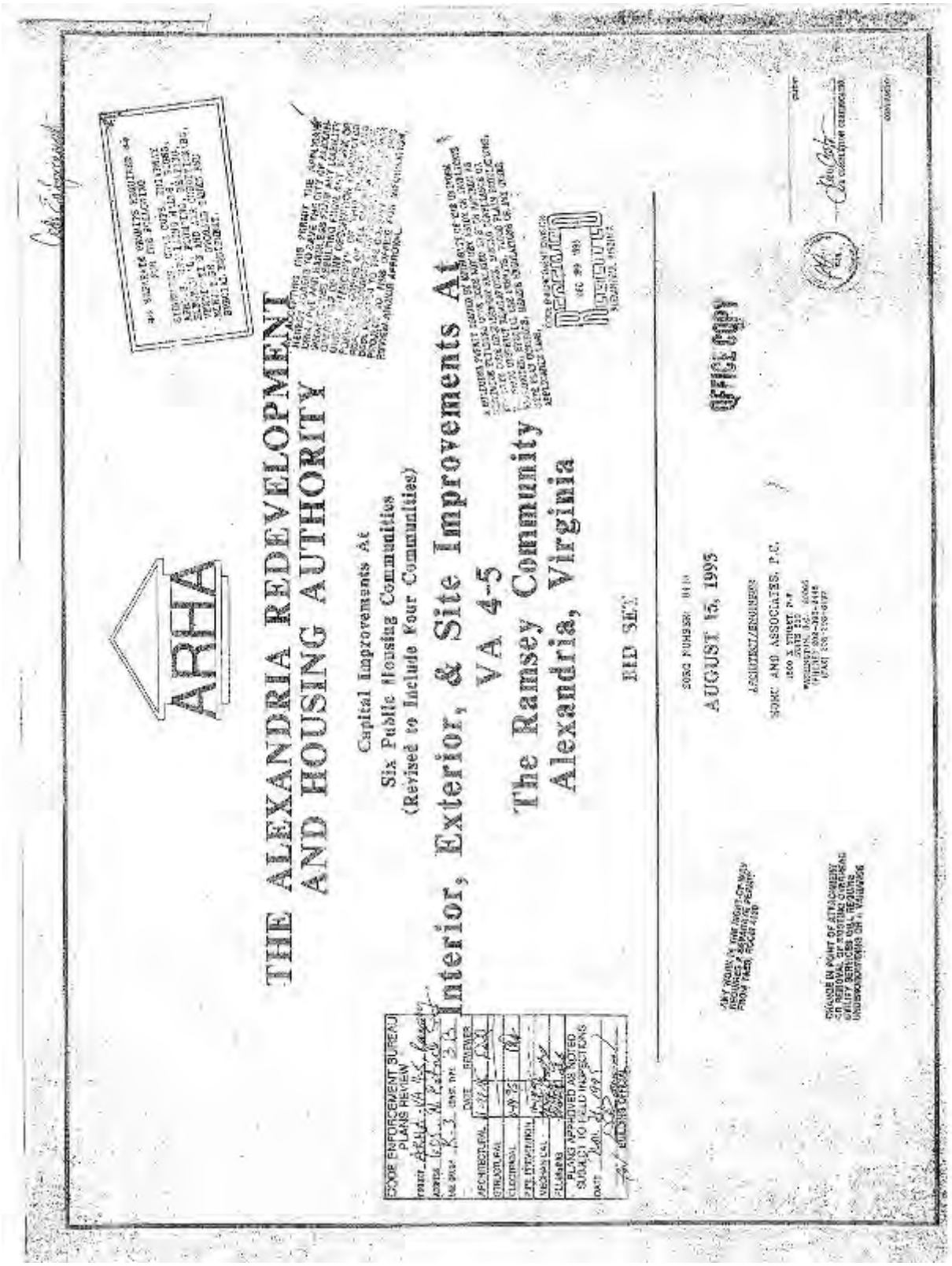
October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 6, showing proposed floor plans and elevations of qaudruplex (Smith 1941b).



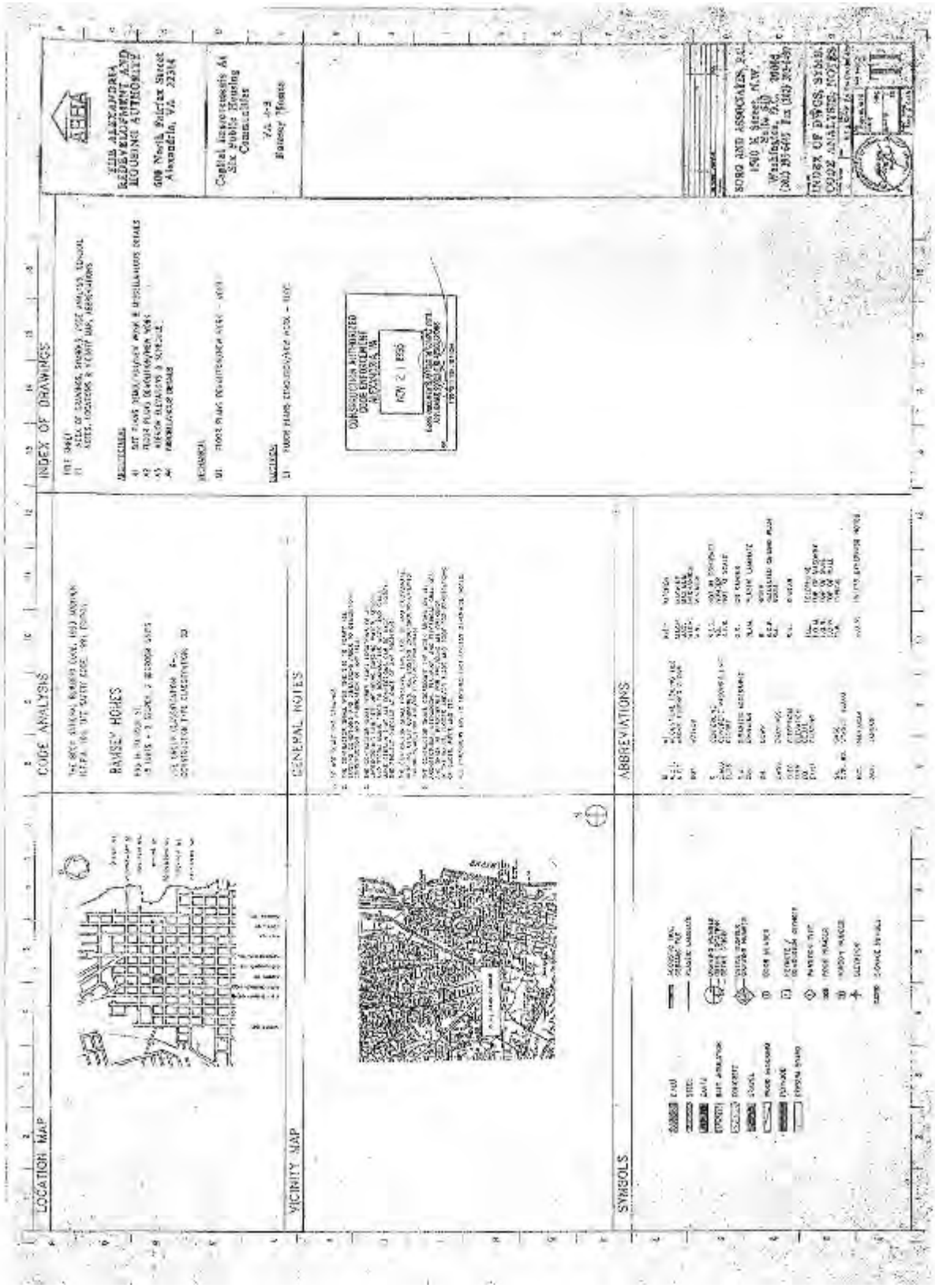
October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 7, showing proposed heating system. Coal chutes and furnace have been removed (Smith 1941b).



October 10, 1941, Lanham Act Alexandria Defense Housing Project VA-44133, Sheet 8, showing proposed list of plants (Smith 1941b).



August 15, 1995, Plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community, Alexandria, Virginia, Cover Sheet (Sorg 1995).



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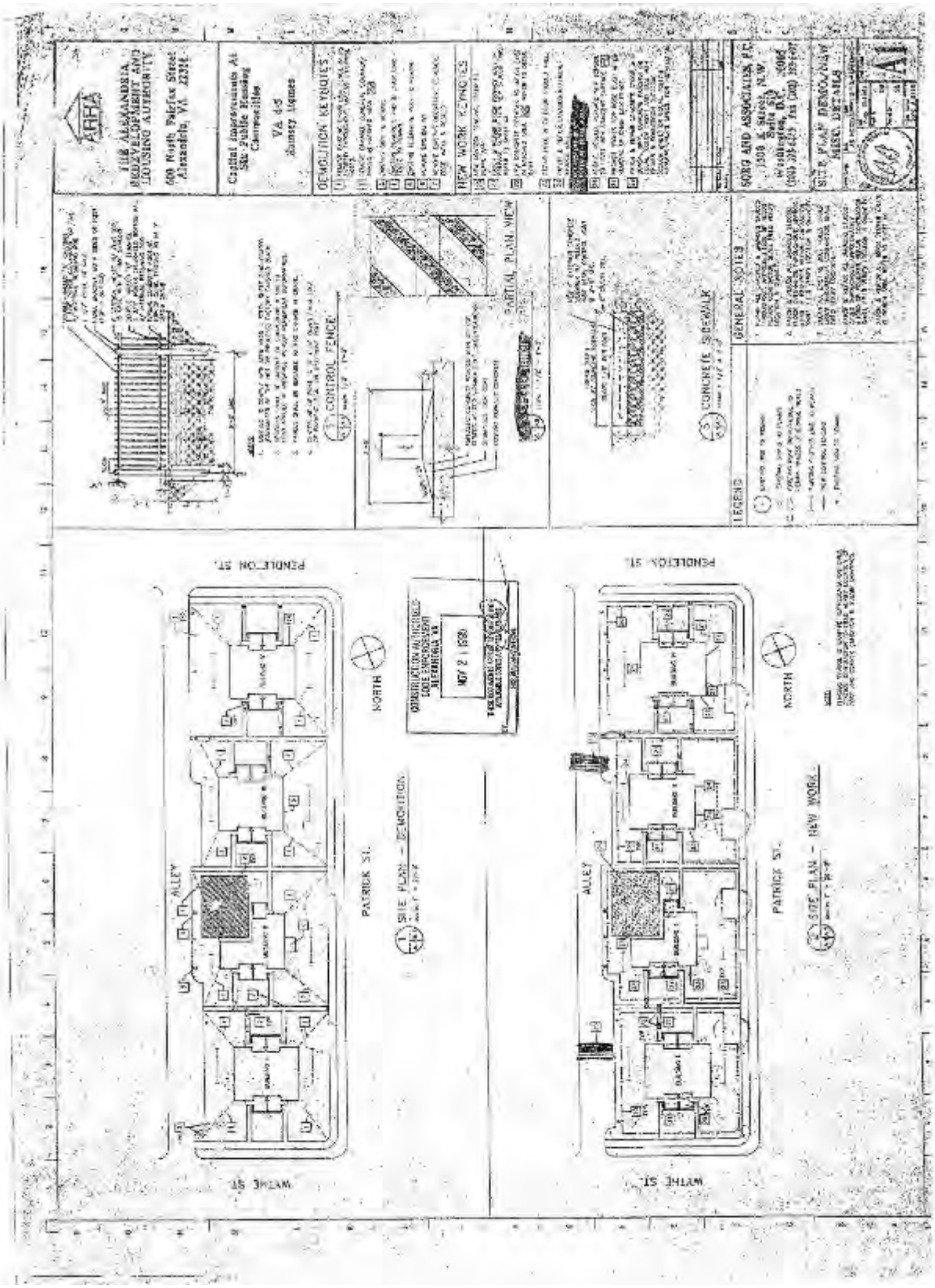
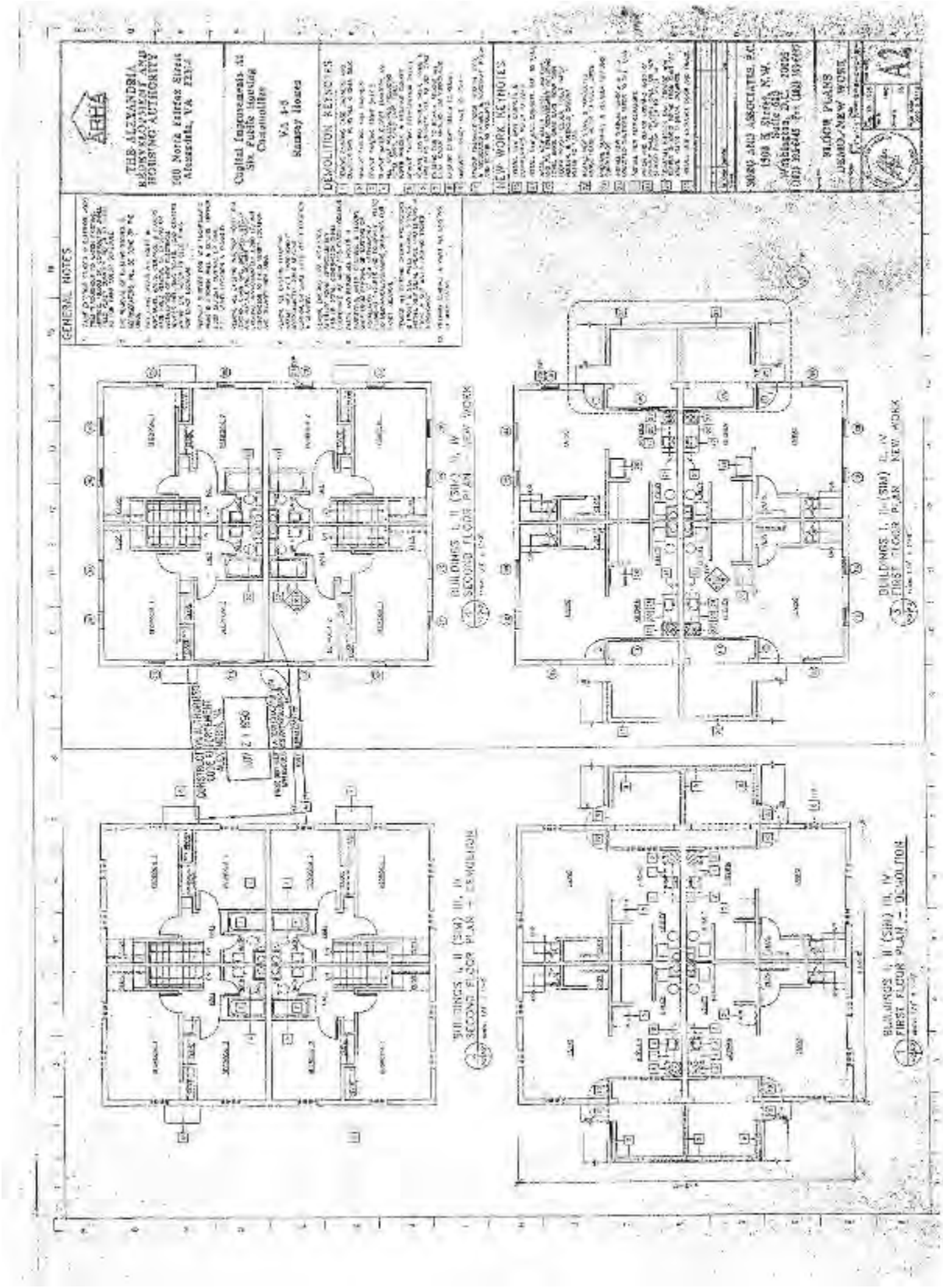


August 15, 1995, Plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community, Sheet A1, showing existing conditions and new work on site plan (Sorg 1995).



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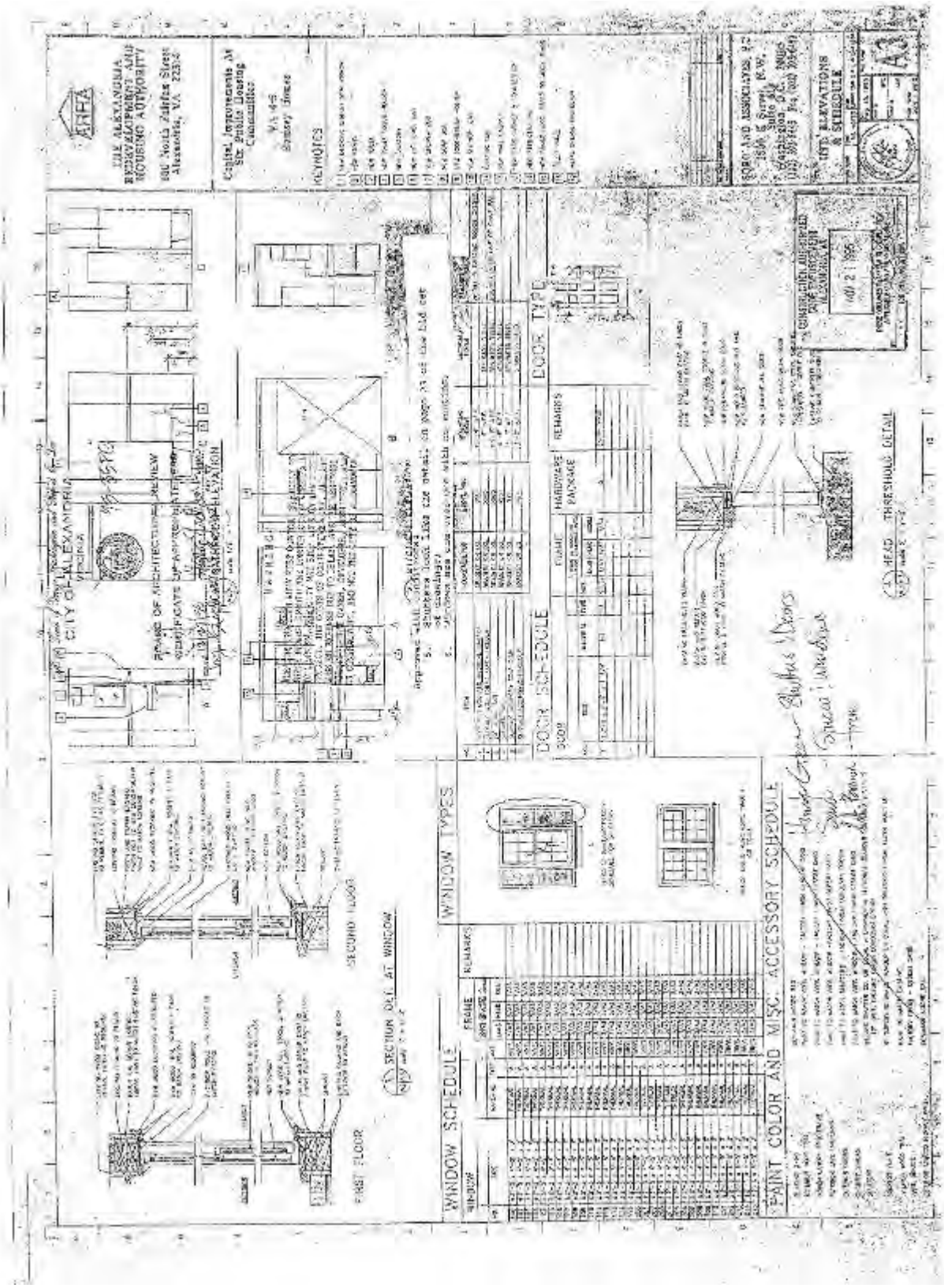

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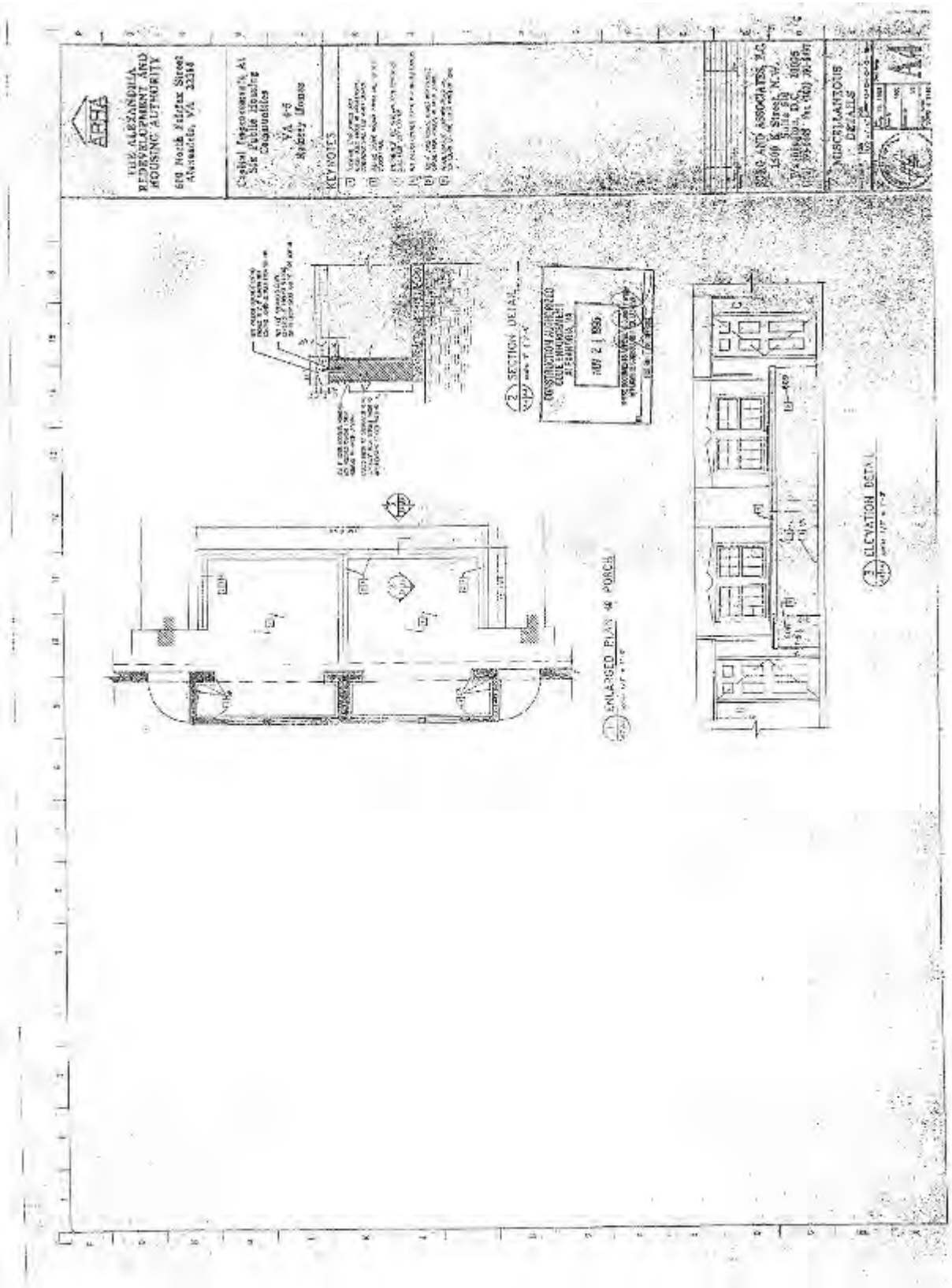

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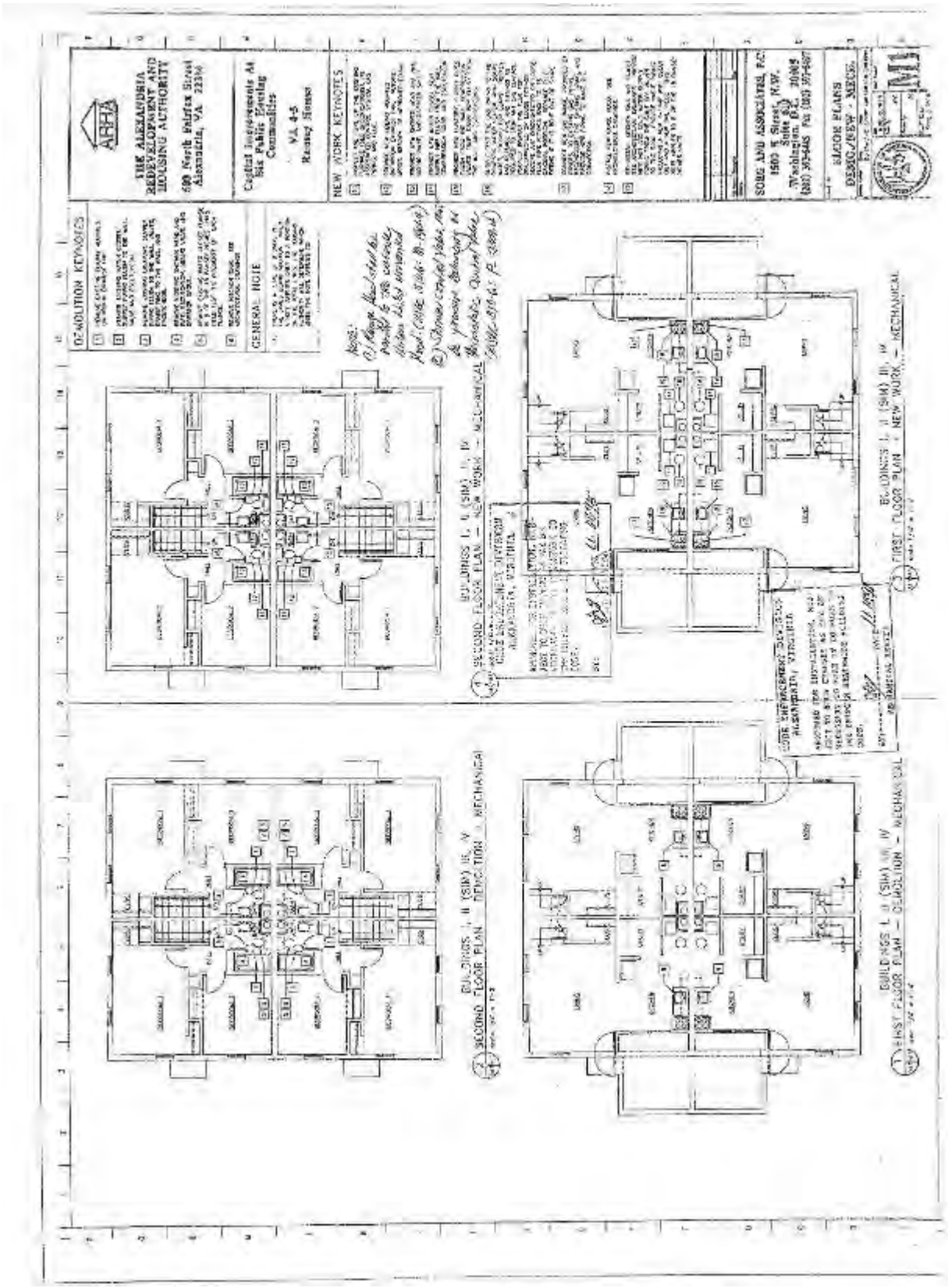

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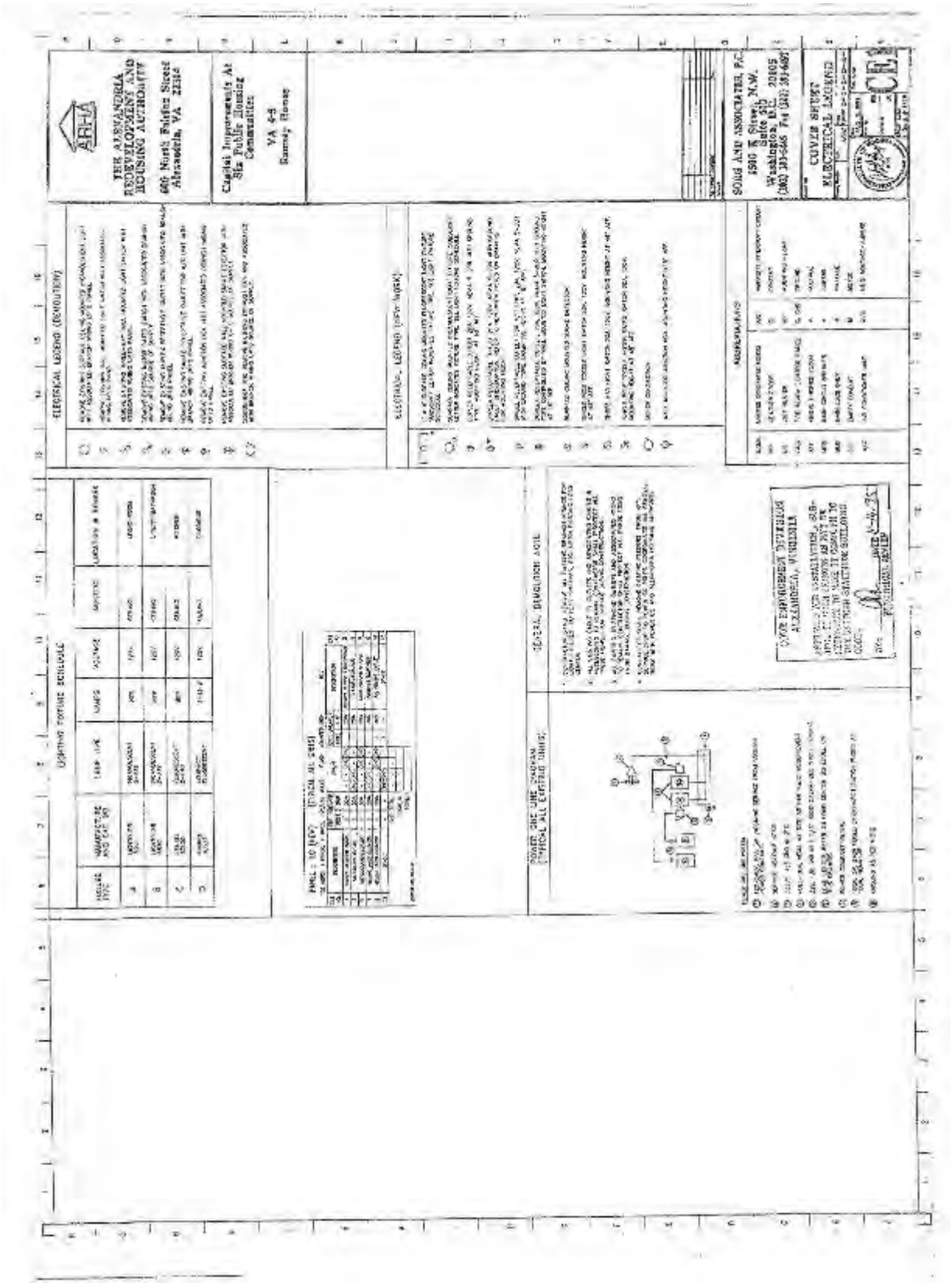

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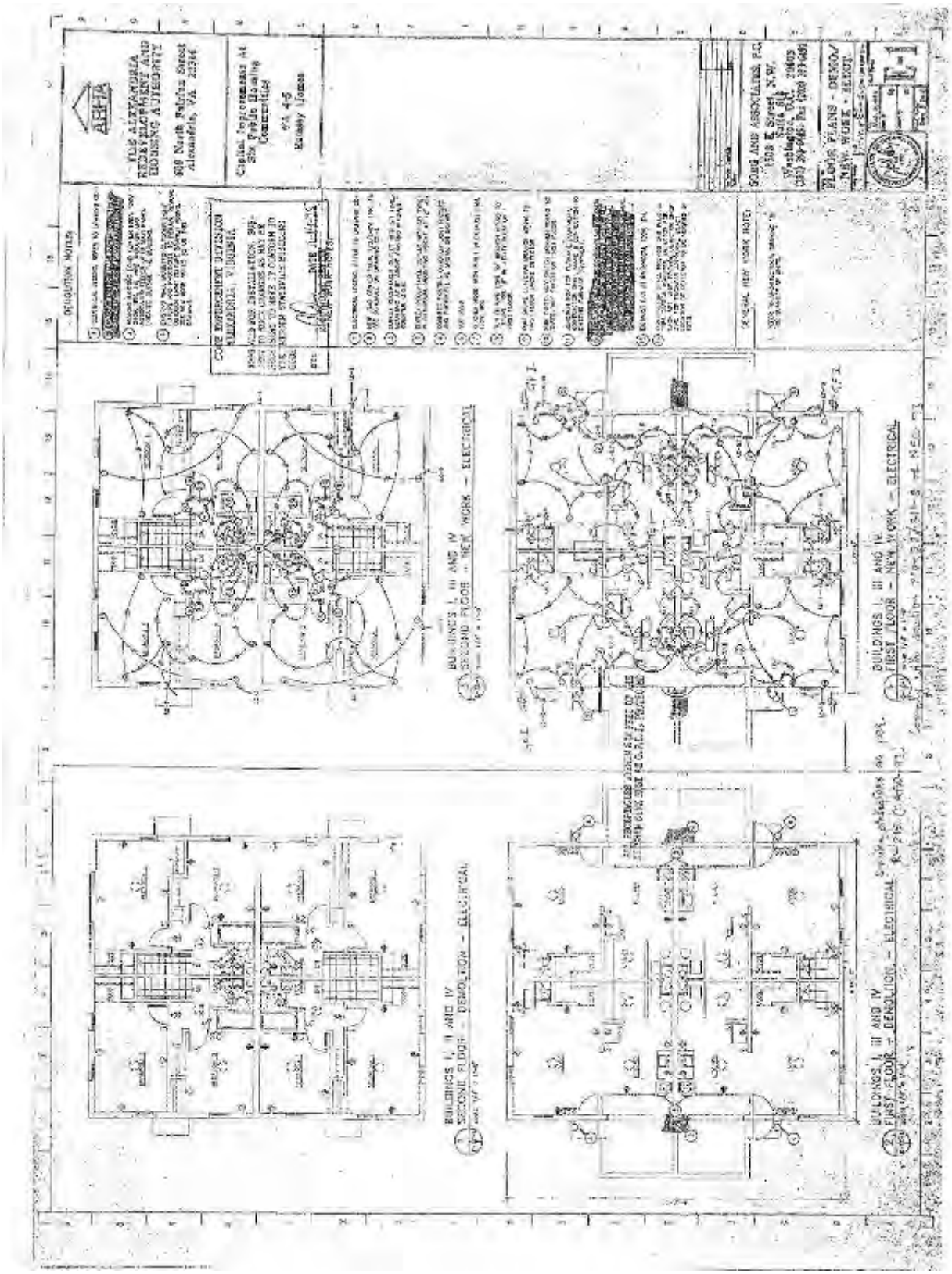
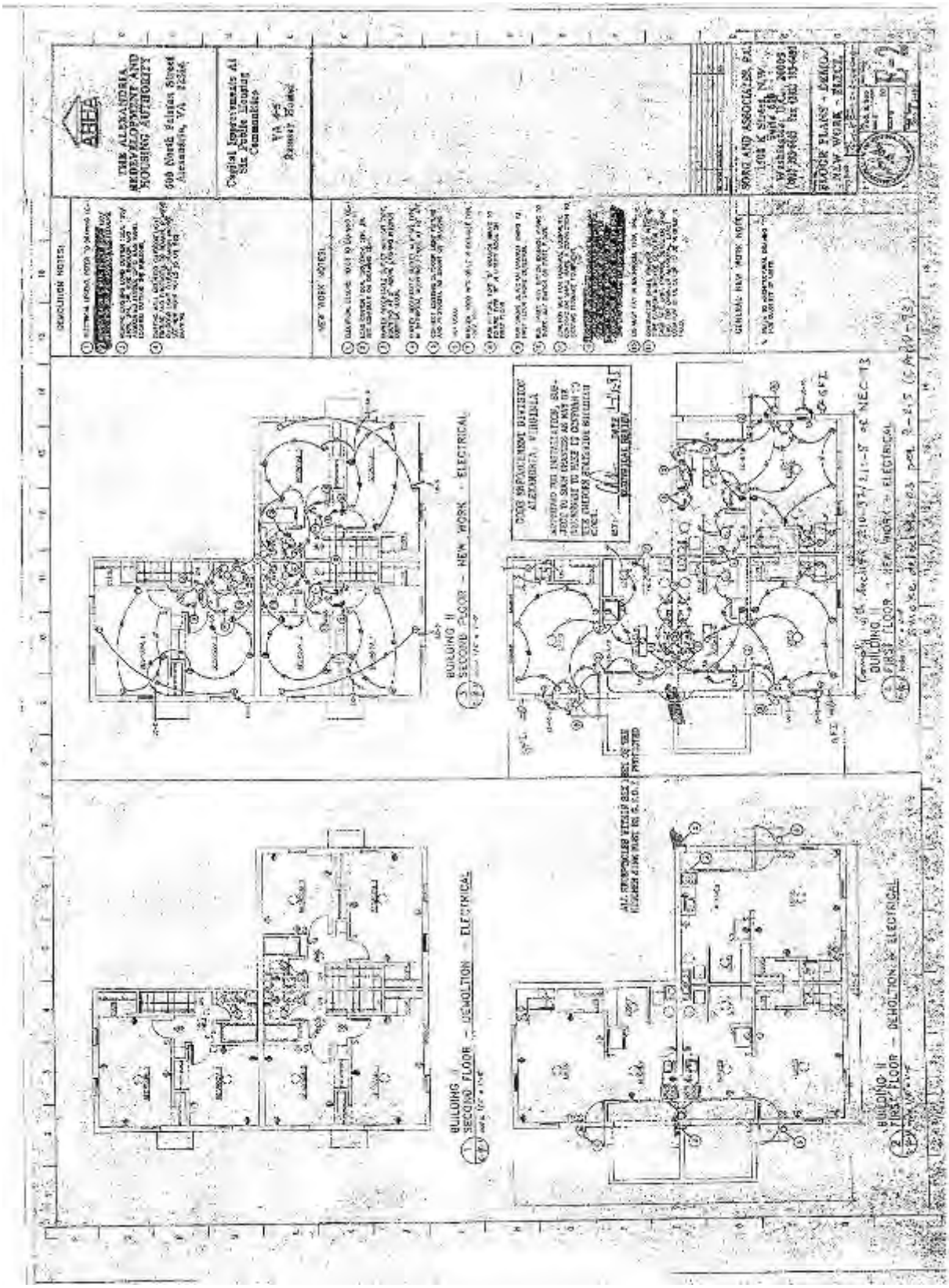


August 15, 1995, Plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community, Sheet E-1, showing existing conditions and new work on quadruplex electrical (Sorg 1995).



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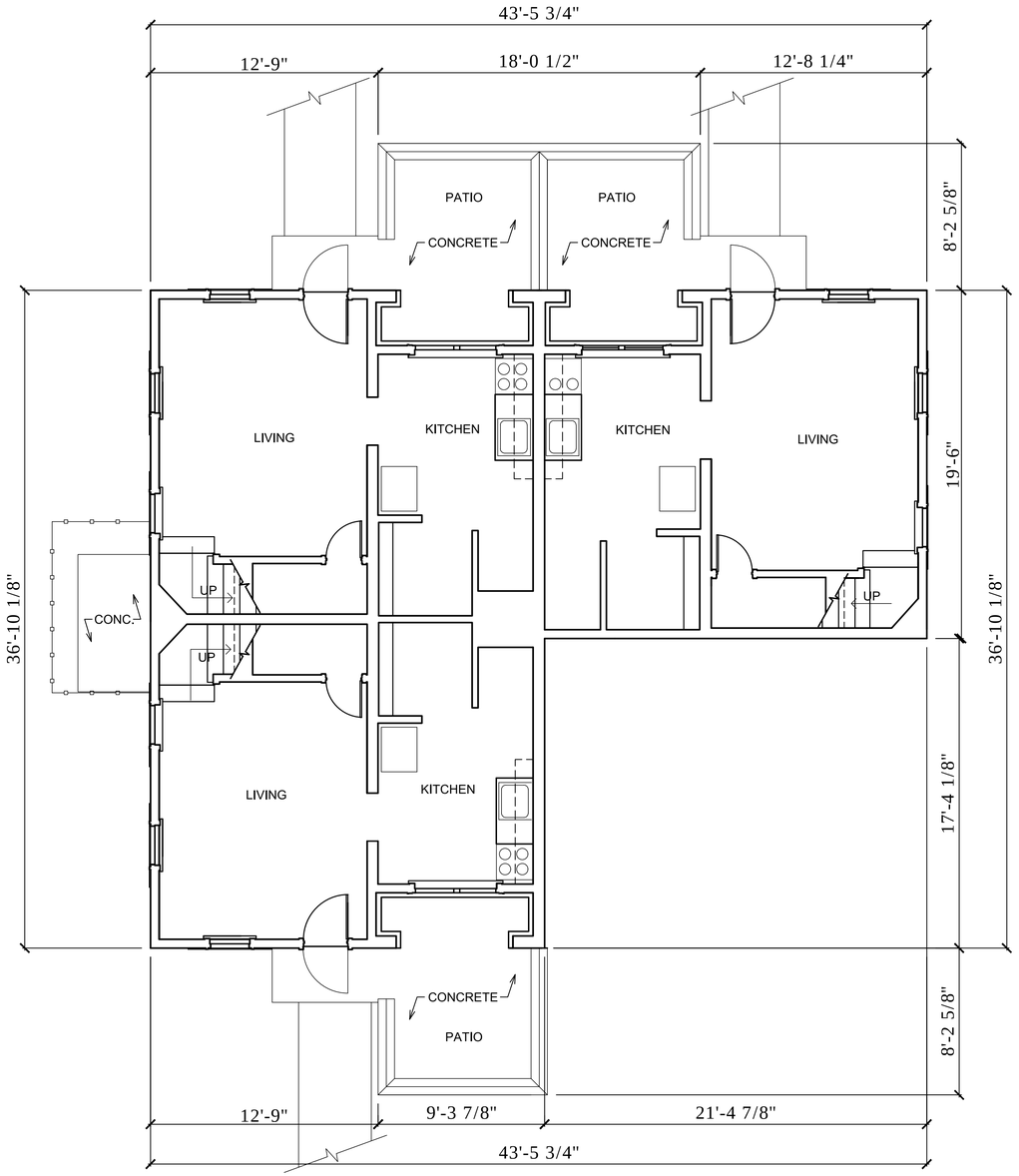
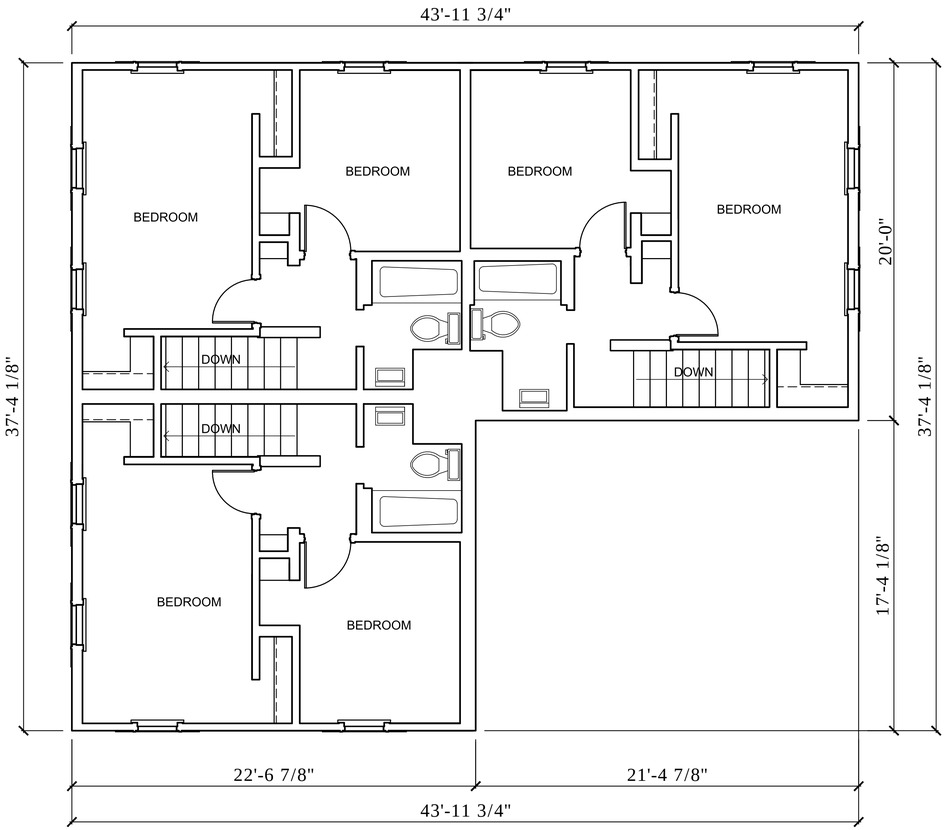


FIRST FLOOR PLAN

BUILDING II - 619, 621 & 623 N PATRICK ST.
ALEXANDRIA, VIRGINIA

0' 1' 2' 4' 6' ENGLISH $\frac{1}{4}$" = 1'

0m 1m 2m METRIC 1 : 48



SECOND FLOOR PLAN

BUILDING II - 619, 621 & 623 N PATRICK ST.
ALEXANDRIA, VIRGINIA

0' 1' 2' 4' 6' ENGLISH $\frac{1}{4}$" = 1'

0m 1m 2m METRIC 1 : 48

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RAMSEY HOMES

EAST SIDE OF THE 600 BLOCK OF NORTH PATRICK STREET ALEXANDRIA VIRGINIA

NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

SURVEY NO.
VA-1511

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 4 SHEETS

AREA OF DRAWING
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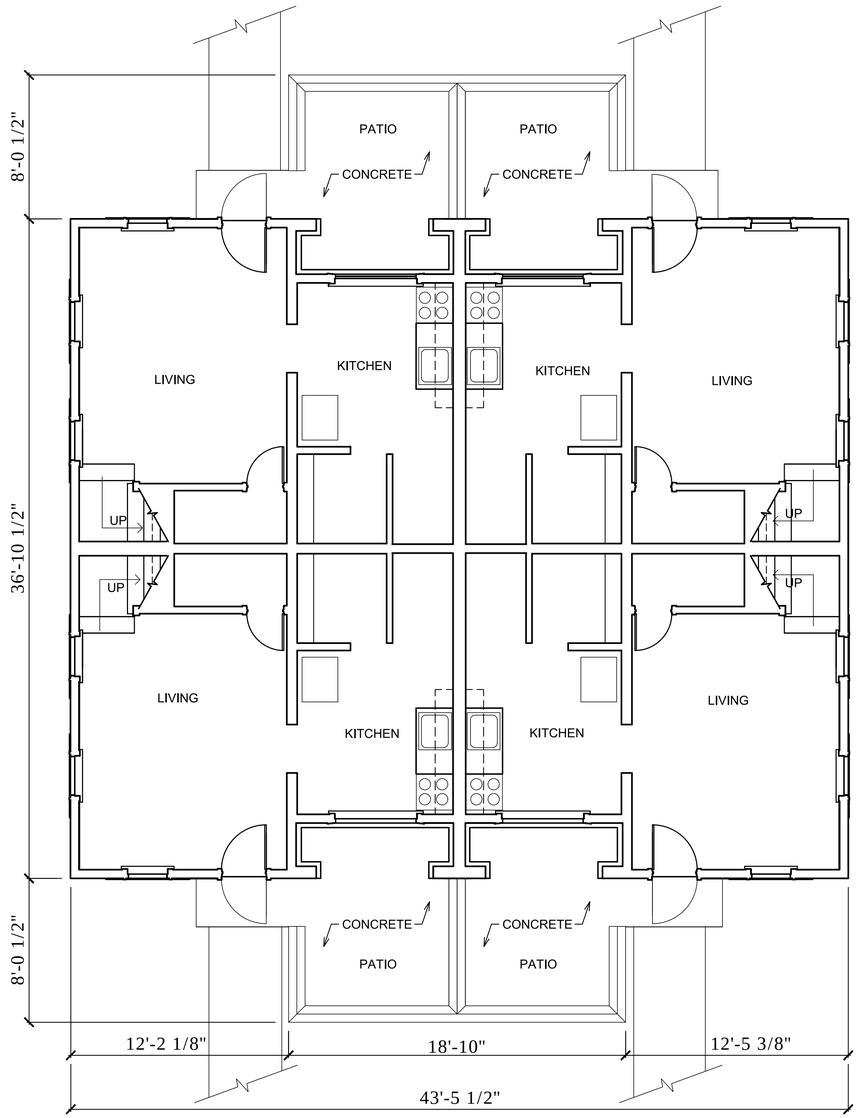

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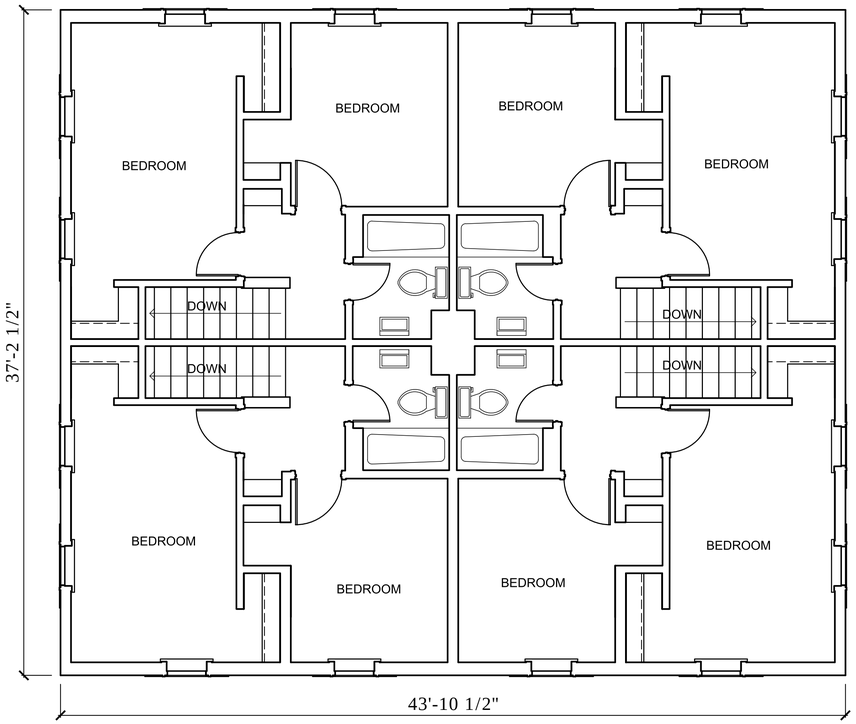

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UNITED STATES DEPARTMENT OF THE INTERIOR

RAMSEY HOMES

EAST SIDE OF THE 600 BLOCK OF NORTH PATRICK STREET ALEXANDRIA VIRGINIA

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VA-1511

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 2 OF 4 SHEETS

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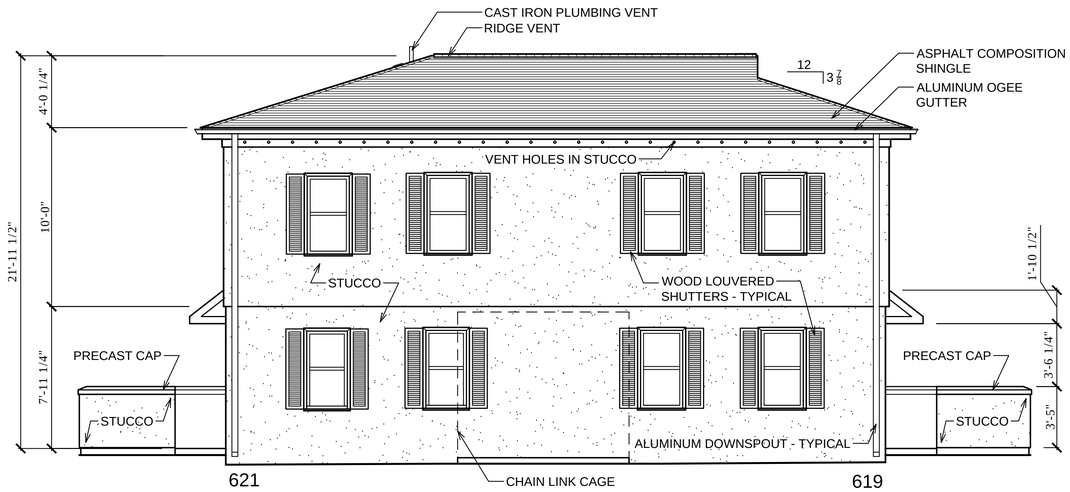

WEST ELEVATION

BUILDING II - 619, 621 & 623 N PATRICK ST.
ALEXANDRIA, VIRGINIA

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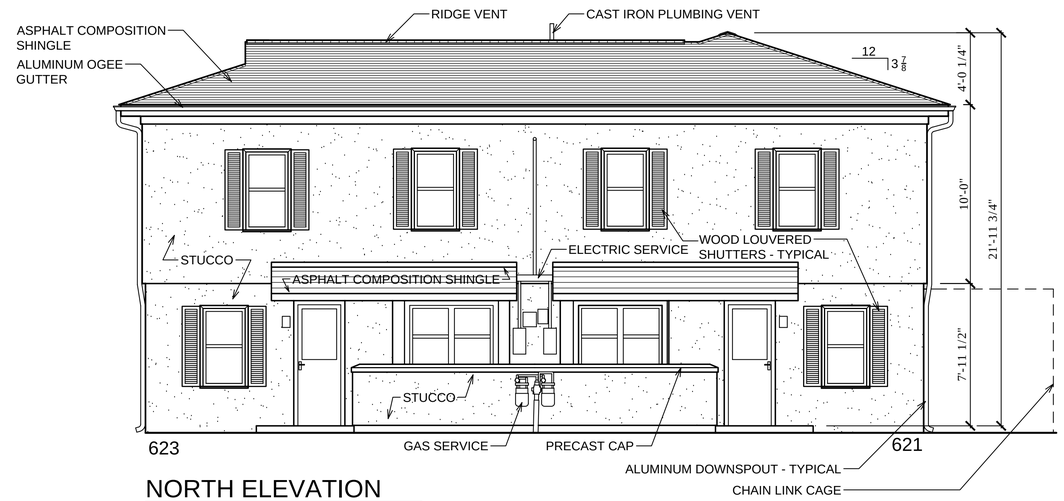

NORTH ELEVATION

BUILDING II - 619, 621 & 623 N PATRICK ST.
ALEXANDRIA, VIRGINIA

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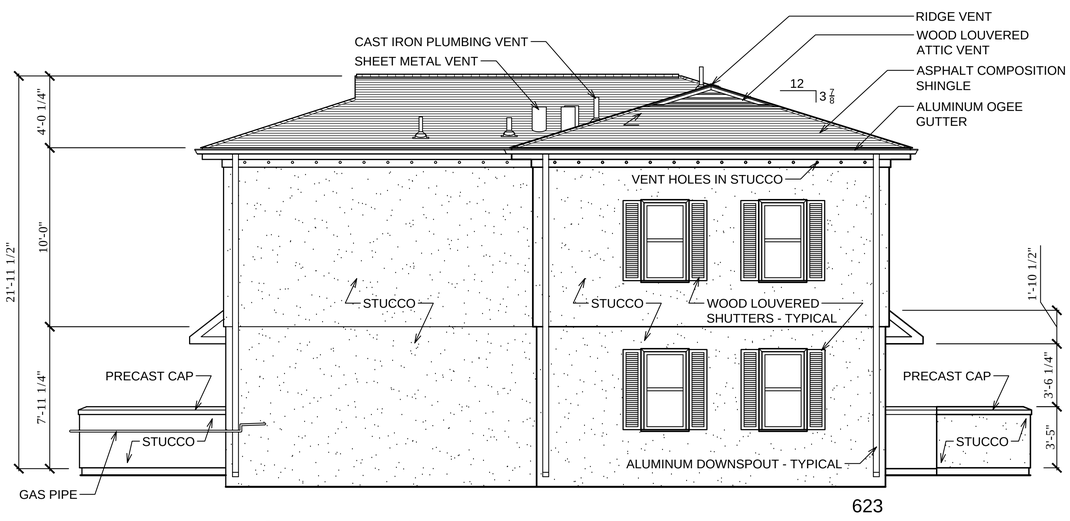
0m 1m 2m METRIC 1 : 48



EAST ELEVATION

BUILDING II - 619, 621 & 623 N PATRICK ST.
ALEXANDRIA, VIRGINIA

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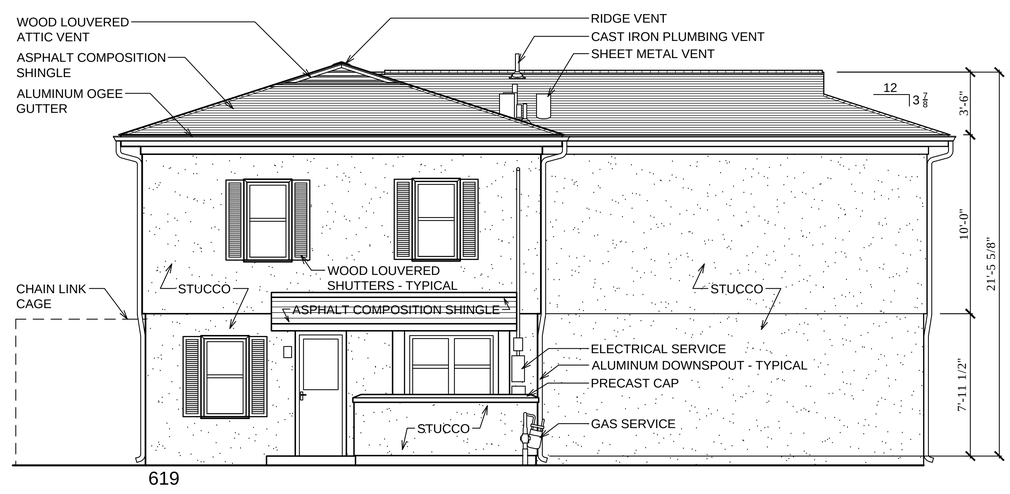
0m 1m 2m METRIC 1 : 48



SOUTH ELEVATION

BUILDING II - 619, 621 & 623 N PATRICK ST.
ALEXANDRIA, VIRGINIA

0' 1' 2' 4' 6' ENGLISH $\frac{1}{4}$" = 1'

0m 1m 2m METRIC 1 : 48

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RAMSEY HOMES

EAST SIDE OF THE 600 BLOCK OF NORTH PATRICK STREET ALEXANDRIA VIRGINIA

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UNITED STATES DEPARTMENT OF THE INTERIOR

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 3 OF 4 SHEETS

SURVEY NO. VA-1511

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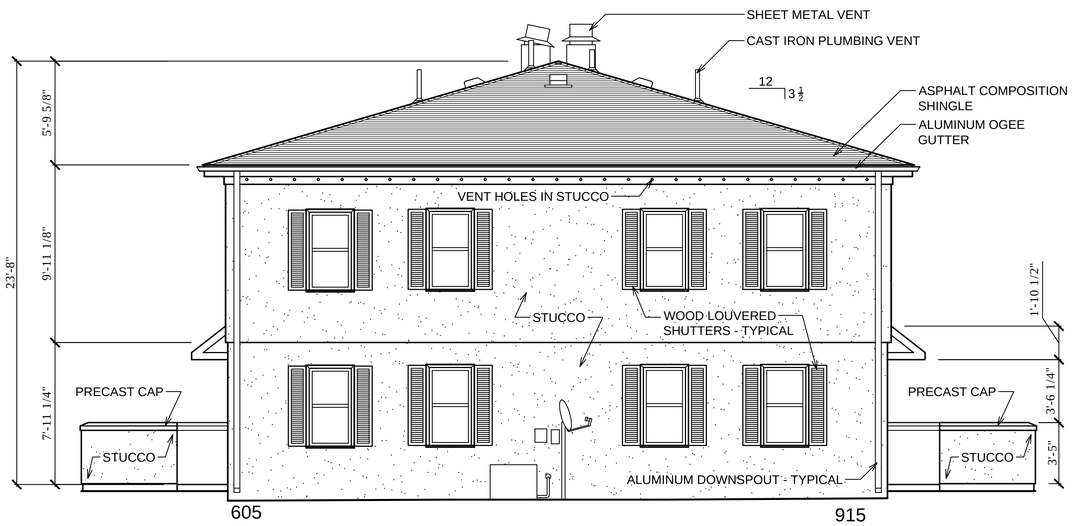

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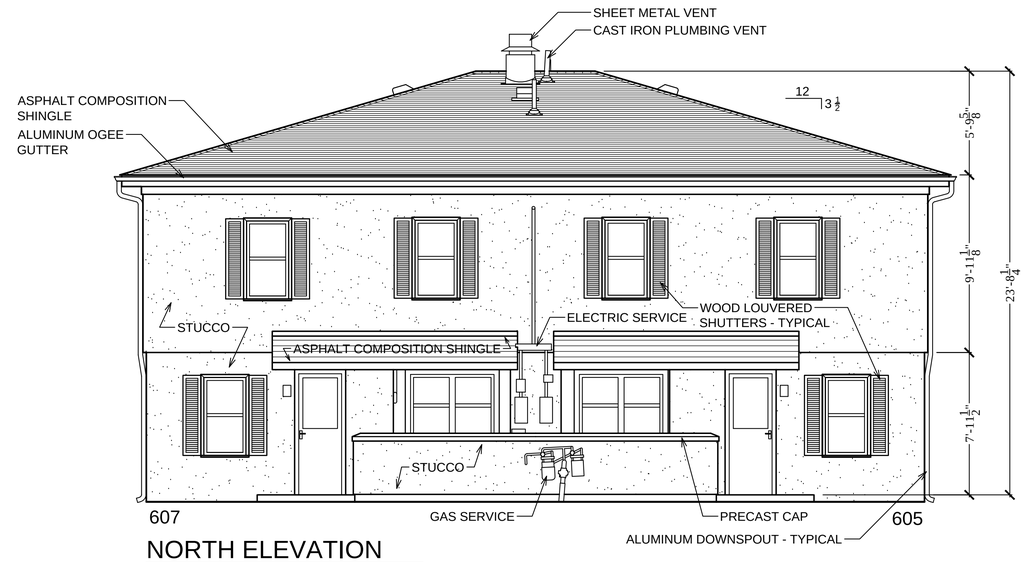

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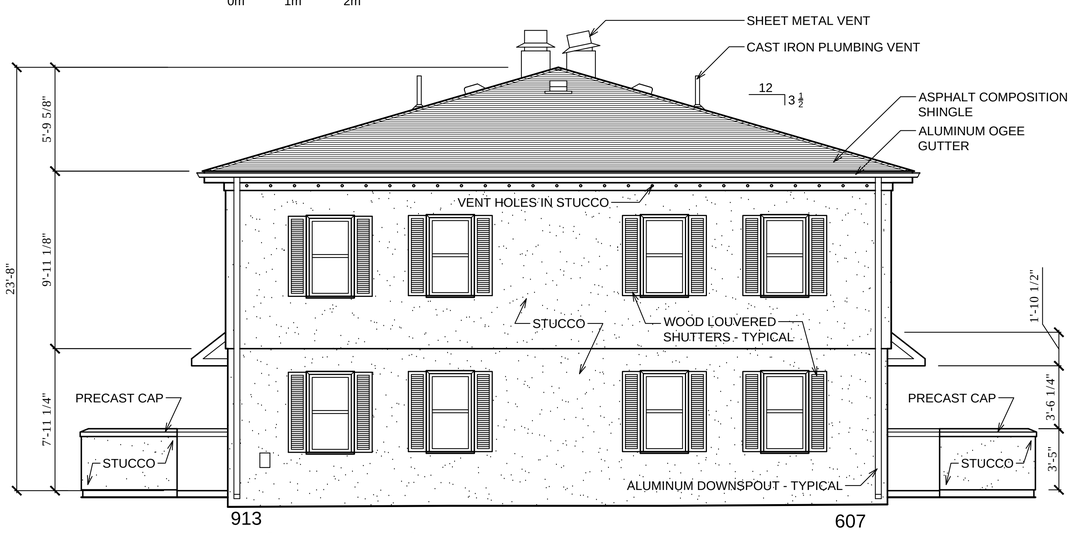

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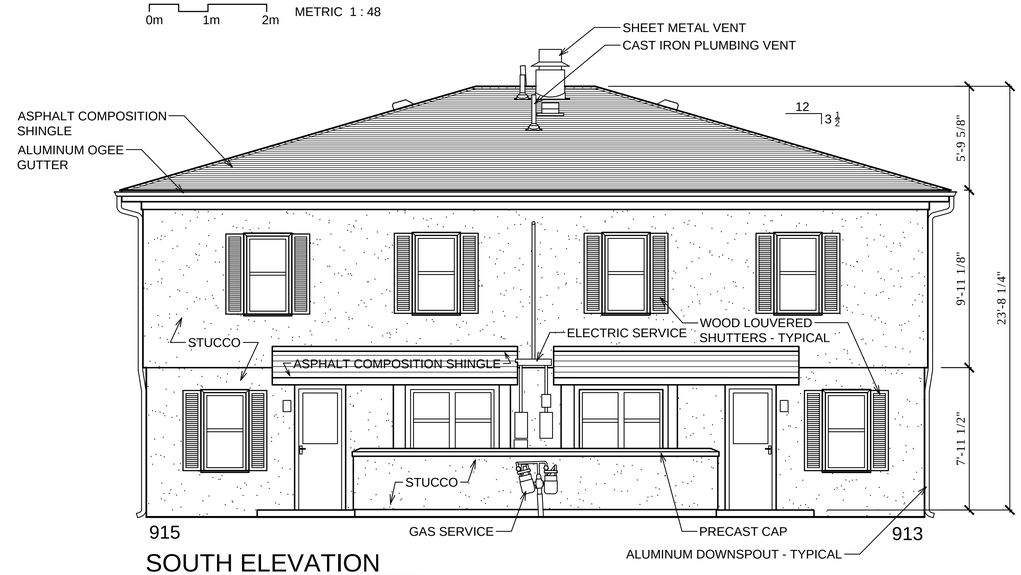

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HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 4 OF 4 SHEETS

HABS/HAER/HALS
NICK NUNNER

ENCLOSURE 2

DHR Project No. 2015-0558

Revised Documentary Study and Archeological Resource Assessment

Ramsey Homes

City of Alexandria, Virginia

WSSI #22682.01

Documentary Study and Archeological Resource Assessment

April 2016 (Revised September 2016)

Prepared for:
Ramsey Homes, LP
401 Wythe St.
Alexandria, VA 22314

DRAFT

Prepared by:

David Carroll, M.A., RPA, Anna Maas, MUEP, and Boyd Sipe, M.A., RPA

Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.®

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ABSTRACT

Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia prepared a Documentary Study for Ramsey Homes, located on North Patrick Street between Pendleton and Wythe Streets for Ramsey Homes, LP of Alexandria, Virginia. The Board of Commissioners of the Alexandria and Redevelopment Housing Authority (ARHA) propose to redevelop the study area consistent with the Braddock East Master Plan (BEMP) at a density high enough to sustain a critical mass of mixed-income residents and work force housing in order to maintain the strong social and support networks that are essential in sustainable communities. The provision of additional affordable housing is a key goal of the Alexandria City Council 2010 Strategic Plan, ARHA 2012-2022 Strategic Plan, Braddock Metro Neighborhood plan, and the BEMP. Specifically, the BEMP proposes meeting the goal of additional units in the ARHA sites proposed for redevelopment. The Documentary Study is required under the City of Alexandria Archaeological Protection Code prior to development of the property.

The Ramsey Homes property is situated outside of the original 1749 boundaries of Alexandria and remained undeveloped until the 19th century. George and Teresa Blish, immigrants from Germany, owned the block from at least 1834 until 1849 and operated a market garden on the property that supplied fruits and vegetables for the needs of residents of Alexandria. Henry Daingerfield, one of the wealthiest men in Alexandria, purchased it and erected several houses which were rented primarily to Irish immigrants who worked in various industries and businesses in and near Alexandria. During the Civil War, the Union army commandeered the lot for the headquarters, barracks, and hospital of Battery H of the Independent Pennsylvania Artillery, which served garrison duty in Alexandria from 1863 until 1865. Following the war, Henry Daingerfield's heirs continued to rent out deteriorating houses on the block until the 1890s, by which time the property was likely vacant of habitable buildings.

During the early 20th century, the property changed hands multiple times and remained vacant until World War II. In 1941, the United States Housing Authority (USHA) began to plan for the construction of permanent housing for African-American defense workers in the Uptown neighborhood. Then known as the Lanham Act Alexandria Defense Housing Project VA-44133, the vernacular Modernist Ramsey Homes (or Ramsay as it was sometimes spelled) was completed in 1942. ARHA purchased the homes in 1953 and has maintained them as affordable since then. Between 1964 and 1979, ARHA added walled patios and removed the skylights and constructed hipped roofs, altering the buildings' style to vernacular Prairie. In 1995, Colonial Revival elements were added, and original chain-linked fencing, a paved playground, and plantings were removed.

In 1984, the Parker-Gray Zoning Overlay District, where the Ramsey Homes are located, was established and codified "to protect community health and safety and to promote the education, prosperity and general welfare of the public through the identification, preservation, and enhancement of buildings, structures, settings, features and ways of life which characterize this nineteenth and early twentieth century residential neighborhood" (Zoning Ordinance Article X. Sec. 10-200). Two years later, a Board of Architectural

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Review (BAR) was appointed to review applications for alterations to properties in the district. In 2008 and 2010, the "Uptown/Parker-Gray Historic District", which covered a larger area, was listed respectively to the Virginia Landmarks Register (VLR) and the National Register of Historic Place (NRHP). In early 2015, ARHA submitted an application to the BAR for a Permit to Demolish. In a memo dated April 22, 2015, city staff recommended demolition; however, the BAR voted to deny the request. ARHA appealed the decision, and on September 12, 2015, City Council overturned the BAR's decision, thereby granting the Permit to Demolish.

The study area has a moderate to high probability of containing late 18th century – 20th century artifact deposits and archeological features that could potentially provide significant information about domestic development in the Parker-Gray Historic District within the City of Alexandria, Virginia. Additionally, one previously recorded archeological site has been mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was subjected to limited investigations conducted by Alexandria Archaeology in 1991. According to the DHR site record, site 44AX0160 has not been evaluated for eligibility to the NRHP. As such, the study area is known to include cultural deposits associated with the historic Civil War-era military occupation of the city. An Archeological Evaluation is recommended.

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INTRODUCTION

The Ramsey Homes are located on North Patrick Street between Pendleton and Wythe Streets in the City of Alexandria, Virginia within the bounds of the historically African-American community known as Uptown and the locally zoned "Parker-Gray District" (Figure 1). The Board of Commissioners of ARHA propose to redevelop the study area consistent with the Braddock East Master Plan (BEMP) at a density high enough to sustain a critical mass of mixed-income residents and work force housing in order to maintain the strong social and support networks that are essential in sustainable communities. The provision of additional affordable housing is a key goal of the Alexandria City Council 2010 Strategic Plan, ARHA 2012-2022 Strategic Plan, Braddock Metro Neighborhood plan, and the BEMP. Specifically, the BEMP proposes meeting the goal of additional units in the ARHA sites proposed for redevelopment. In a memo dated April 22, 2015, city staff recommended demolition of the Ramsey Homes.

One previously recorded archeological site is mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. According to the DHR site record, the resource has not been evaluated for eligibility to the NRHP. Thunderbird Archeology, at the request of Ramsey Homes, LP of Alexandria, Virginia, prepared a Scope of Work (SOW) for this Documentary Study and Archaeological Assessment.

The project area includes four buildings with 15 units, labeled I, II, III, and IV north to south (Figure 2). The buildings were previously recorded with DHR as seven resources in 2006 in anticipation of nominating the "Uptown/Parker-Gray Historic District" (DHR No. 100-0133) to the VLR and NRHP.

Building I.	912 and 914 Wythe Street (DHR No. 100-0133-1328)
	625 and 627 Patrick Street (DHR No. 100-0133-0754)
Building II.	619, 621, and 623 Patrick Street (DHR No. 100-0133-0751)
Building III.	609 and 611 Patrick Street (DHR No. 100-0133-0747)
	613 and 615 Patrick Street (DHR No. 100-0133-0749)
Building IV.	605 and 607 Patrick Street (DHR No. 100-0133-0745)
	913 and 915 Pendleton Street (DHR No. 100-0133-0948)

Each resource contributes to the Virginia Landmarks Register (VLR) district listed in 2008 and the NRHP district listed in 2010.

Principal Architectural Historian Anna Maas, MUEP and Associate Archeologist David Carroll, M.A., RPA conducted archival research and prepared the report. Boyd Sipe, M.A., RPA was project manager. Geospatial Analyst Michael Bowser prepared the map exhibits. Research was conducted at the Office of Alexandria Archaeology; the Alexandria Archives and Records Center; the Alexandria Courthouse; the Alexandria Library, Barrett Branch (Special Collections); the Alexandria Redevelopment and Housing Authority Records; the American Institute of Architects Archives; Fort Ward Museum, Alexandria; the Jackie Robinson Foundation; the John D. Rockefeller Jr. Library, Williamsburg; the Library of Congress, Washington, D.C.; the Library of Virginia, Richmond; the National Archives at College Park, Maryland, which houses the Records

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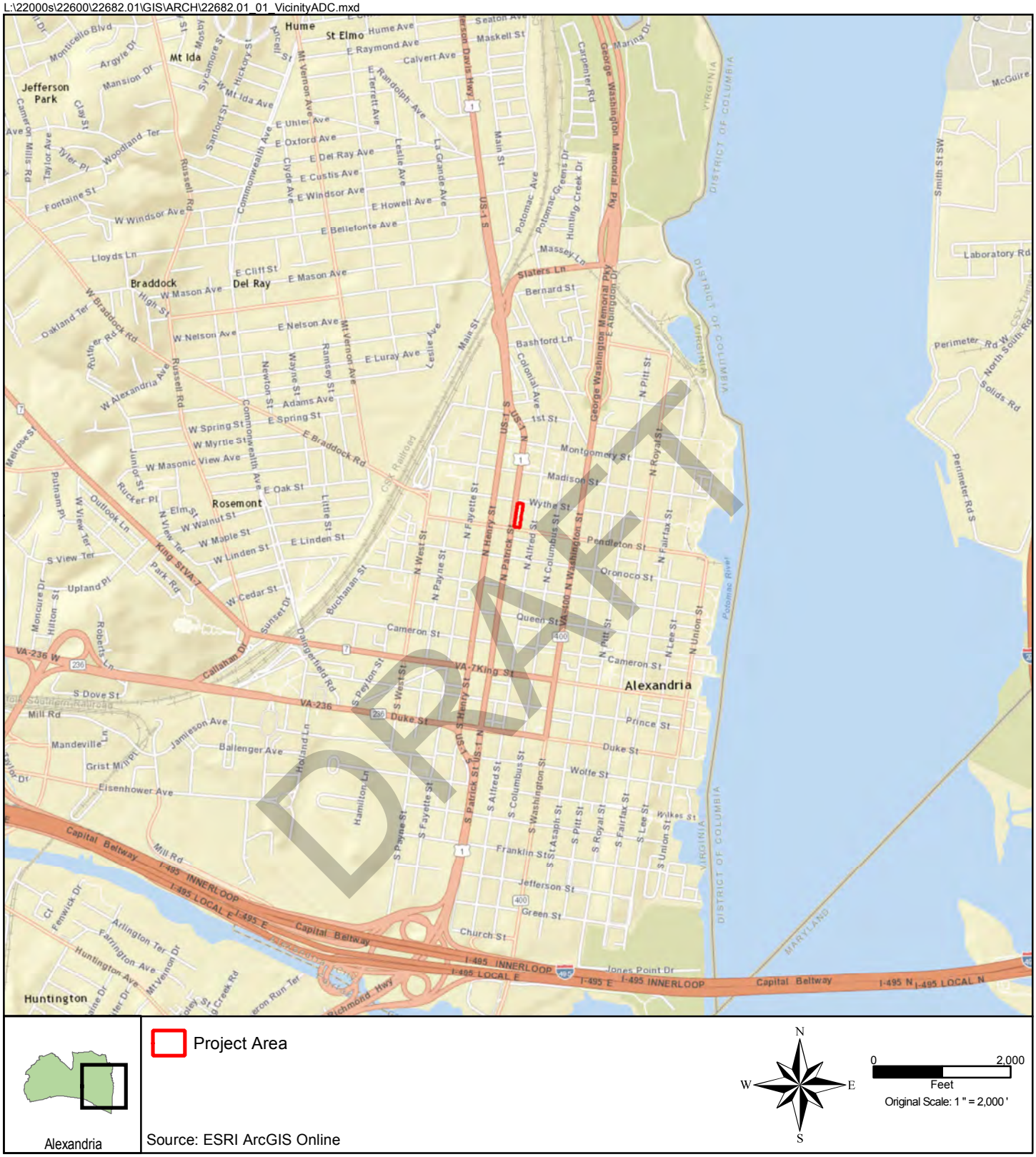

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Figure 1
Vicinity Map

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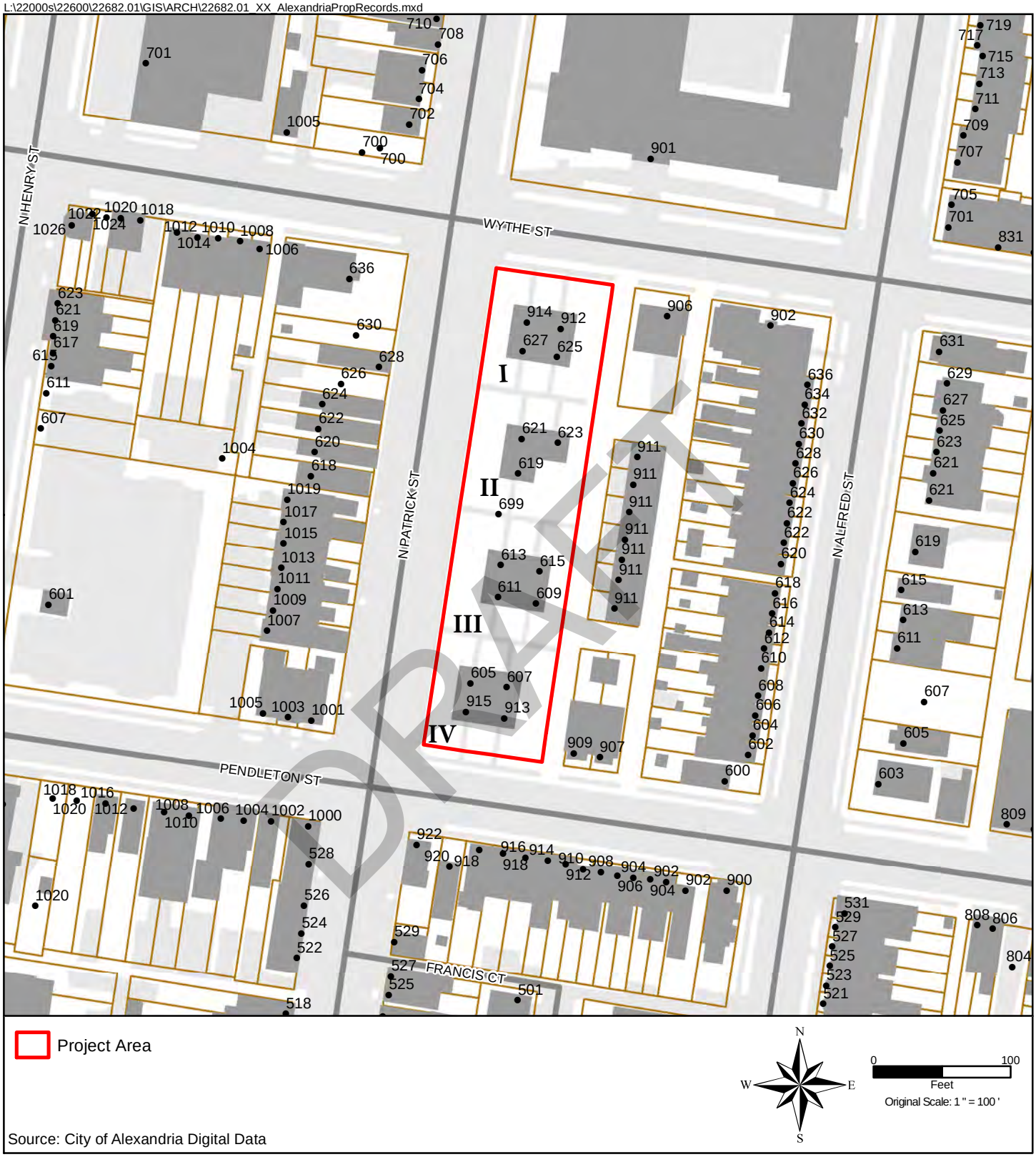

Figure 2
2015 City of Alexandria Parcel Map

of the Federal Works Agency (FWA) and the Public Housing Administration (PHA); the National Archives, Washington, D.C.; the Nimitz Library and Navy Department Library; the Tuskegee University Archives, Department of Records and Research; and the Virginia Department of Historic Resources (DHR). United States Census Records; United States Patent and Trademark Office Records; Historical Newspaper Archives; and the National Association of Housing and Redevelopment Officials Records were reviewed. Previously collected research data from the Housing and Urban Development (HUD) Library in Washington, D.C. and oral histories from Mr. James Henson and other 20th–century occupants of public housing in the city were consulted. Additionally, specific research questions were discussed with staff at Alexandria Archaeology, the City of Alexandria Fort Ward Park Museum, and the Jackie Robinson Foundation.

HISTORIC CONTEXT

The history of public housing in the United States provides a context in which to analyze the architectural design and styles of the built environment at the Ramsey Homes project site, as well as the situation of the historic and modern residents of the Project. A neglected area in the writing of urban history is the physical environment. It is very likely that the built environment reflects and shapes human behavior (Gardner 1981:64). Most literature on low income housing has concentrated on tenements and urban reform in the late 19th century (Gardner 1981:66). In recent years, interest has shifted to the evolution of public housing policy and design.

Public Housing in Early America

In rural or agrarian socio-economic milieus, such as much of the United States prior to the 20th century, families typically built houses for their own use. Industrialization in the 19th century radically altered the social relations of building, working and living. Increasingly over time, dwellings were built by hired labor and sold at market prices; those who could not afford such housing or were restricted by codes, covenants, and other discriminatory practices, collected in slums.

> In the early stages of our history, settlers built their own homes, good or bad, with their own hands and some help from their neighbors. Much of our farm and rural housing is still in this stage. When we came to town building and industrialization, private business enterprise took over the job. It has had no competition until recently, and the result is a larger acreage of worse looking slums than can be found in any other allegedly civilized country. Private enterprise rise can offer no alibi. That is simply what happened as a result of laissez faire and the free working of supply and demand (Wood 1940:83).

Prior to the American Revolution (1775-1781), responsibility for caring for Virginia's poor rested with Anglican parishes. However, after the British were defeated, the Anglican Church was disestablished, and the responsibility shifted to the local governments (Ward 1980; Watkinson 2000; Roach 2002). Public housing, with its current connotations, is a product of the early 20th century, in the 18th century the term "public house" referred to an ordinary, an inn or tavern.

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The Alexandria Poor House

Circa 1800, the town of Alexandria erected a poor house at the northwest corner of present-day Monroe Avenue and Route 1. Inmates and the keeper of the poor house likely lived in the main building, which was a large, two-and-a-half-story, seven-bay, Federal-style brick structure (Ward 1980; Watkinson 2000; Roach 2002). The building displayed Flemish bond brickwork and featured a hipped roof with pediment, dormers, and four interior chimneys. The symmetrical façade was arranged around a two-story, projecting center pavilion. The center pavilion contained an arched entrance that incorporated a fan light and sidelights; a Palladian window occupied the second story of the projecting pavilion. The interior displayed a rectangular, longitudinal-hall plan with central entrance.

The ledger of Robert Hodgkin, who became keeper of the Alexandria Poor House in 1861, provides valuable information about the operation of the Poor House between 1861 and 1863 (Miller 1989; Ward 1980). Hodgkin's record of the operations of the Alexandria Poor House documents that, despite the disruptions to the local economy, he was still able to purchase a variety of foodstuffs, including fresh meat, salt beef, flour, butter, bread, molasses, cornmeal, herring, and pickled codfish. He also purchased "20 bushels rye for coffee" (Ward 1980:65). These purchases supplemented the vegetables produced on the Poor House farm. In January 1862, the livestock on the farm included "three horses, two cows, one bull, and nineteen hogs" (Ward 1980:66).

In January 1862, Robert Hodgkins prepared a list of the people, livestock, furnishings, and agricultural implements at the Poor House for submission to the "committee on the poor," which oversaw the institution. At that time, thirty-eight inmates lived at the Poor House, along with eight members of Robert Hodgkins's household. The Poor House ledger for 1861-1862 contains two sections, one for the "alms house" and one for the "work house", indicating that the Alexandria Poor House was divided into these two units. According to local historian Ruth Ward, who analyzed the ledgers, "The ledger entries dealing with the work house indicate that most inmates were sent there for thirty days, although some were sentenced to six months." During the period covered by the ledger, at least two inmates of the work house, John Crisman and Kate Thompson, ran away (Ward 1980:66). In January of 1863, one inmate delivered a child at the Poor House. The ledger also mentions three deaths in 1862: James Buckhannon, an unnamed boy who drowned, and a "German who died at poor house" (Ward 1980:65-66).

Philanthropic and Limited Dividend Housing

Until the Depression, most American leaders believed that the private market, with a helping hand from private philanthropy, could meet the nation's housing needs. The antecedent of public housing, philanthropic and limited dividend housing of the late 19th century, though privately built and operated, shared some similarities with later public housing. For instance, philanthropic and limited dividend housing was also faulted for plain appearance (Gardner 1981:67). In the early 20th century, a few unions and settlement house reformers built model housing developments for working class families, mostly in the northeastern United States and without government subsidy.

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Public Housing in the Early Twentieth Century

Overview

The Great Depression began on October 29, 1929, when the stock market crashed on what became known as Black Tuesday. By 1932, at least one-quarter of the American workforce was unemployed. President Franklin Roosevelt took office in 1933 and began a series of experimental projects and programs, known as the New Deal, focusing on Relief, Recovery, and Reform. Prior to the 1930s, the Federal Government had no role in housing private citizens; the social welfare of the public, in terms of housing, was left entirely to local governments and private charities (Robinson et al:1999b:5). The Depression focused the nation's attention on "the inequities of the housing market and on the smoldering slum problems … devastated home ownership and the residential construction industry" (Robinson et al:1999b:1:12).

Public housing in the United States was first implemented after many Americans lost their homes and livelihoods as a result of the economic crises. One of Roosevelt's responses was the Federal Housing Act of 1934, which established the basic format for public housing in which the government subsidizes the market value of the housing, and the creation of the Federal Housing Administration (FHA) (Trotter 1958; Gotham 2001:296). Public housing in the New Deal was also an employment program, as under the National Industrial Recovery Act, the formation of the Public Works Administration (PWA), which developed and built the first housing projects in the United States, led to the creation of many jobs in the construction industry (Aiken and Alford 1970).

The socio-political environment during the early years of the Great Depression accommodated reformers who believed that that the federal government should subsidize social housing and build a noncommercial alternative housing sector. Many American housing activists envisioned public housing for the middle-class workforce as well as the poor.

The Emergency Relief and Construction Act of 1932

The first significant New Deal measure targeted at housing was the Emergency Relief and Construction Act of 1932. This act created the Reconstruction Finance Corporation (RFC), a federal agency authorized to make loans to private corporations providing housing for low-income families. Also in 1932, the Federal Home Loan Bank Board was established to make advances on the security of home mortgages and establish a Home Loan Bank System. The act did little to assist individual homebuyers. The average home loan at that time required very short-term credit, with terms generally ranging from three to five years. Large down payments, second mortgages, and high interest rates were commonplace.

The Housing Act of 1934

As the economic situation worsened, the National Housing Act of 1934 was passed to relieve unemployment and encourage private banks and lending institutions to extend credit for home repairs and construction. Under the Act of 1934, the FHA was created. The responsibilities of the FHA, now a federal agency under the Assistant Secretary for Housing-Federal Housing

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Commissioner, are to improve housing standards and conditions; to provide an adequate home financing system through insurance of mortgage loans; and to stabilize the mortgage market. Two mortgage insurance programs were established under Title II of the Act of 1934:Section 203 mortgage insurance for one to four family homes; and Section 207 multifamily project mortgages. The Act of 1934 also authorized the FHA to create the Federal National Mortgage Association, or Fannie Mae, which was chartered in 1937.

Helen Alfred, Executive Director of the National Public Housing Conference, summarized the rationale for the act, its means, and its goals:

> Recognizing the social importance of housing to all the people, and the value of a home construction program as a medium of reemployment in a great key industry, the Federal government has taken a hand. The removal of blighted areas and rehousing of the lower-income groups at rents which they can afford to pay has not been accomplished by speculative builders or limited dividend corporations. This new policy of the Federal government, as expressed in the terms of the National Industrial Recovery Act, presents an opportunity to make rapid progress toward the solution of our housing problem. In conformity with the provisions of the Act, the Government has made large sums of money available for the purpose of clearing slums and erecting low-rent dwellings. These funds will be advanced in the form of loans and outright grants. Private corporations, including limited dividend companies, can merely obtain loans for their projects. Public agencies, in addition to loans, can obtain subsidies amounting to thirty percent of the cost of labor and materials (Alfred 1934:23).

Alfred also summarized the necessity for states and local communities to pass legislation and charter local authorities that would make implementation of law possible:

> The policy of the Government presents an opportunity for a vigorous battle against indecent housing conditions. The Government is doing its part; the next steps must be taken by local communities. As stated above, the outright grants will be given only to public bodies. Only five States now have the power to create housing boards or authorities with full power to acquire unhealthy areas, clear slums, and construct and operate dwellings. These States are California, Michigan, New Jersey, Ohio, and Wisconsin. Enabling legislation is pending in a number of extraordinary sessions of State Legislatures ….civic and welfare groups, members of the clergy, women's organizations and progressive labor leaders are uniting to promote sentiment in their local communities favorable to the creation of municipal housing authorities. Most of the municipal legislation is being patterned after a bill prepared in New York City under the supervision of the National Public Housing Conference. Under the terms of this bill, it is recommended that a municipal housing authority be created and that a board be appointed by the Mayor. This board is to have power to issue its own bonds and to sell them to the Federal government. It will have placed at its disposal an effective procedure for acquiring land by condemnation or purchase, for clearing, replanning and rebuilding unhealthy and

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> blighted areas, and finally to manage and operate dwellings when completed. The Government loans will be repaid out of the rents collected (Alfred 1934:23).

Critics of the Housing Act of 1934 have pointed to the act's failure to assist lower income families most in need of housing aid and feel it did little to improve inner city housing; it promoted the single family detached dwelling as the prevailing mode of housing, which perpetuated suburban sprawl and it intensified racial segregation. Critics of the FHA have seen racially discriminatory policies and practices of the agency associated with mortgage insurance and lending, appraisal guidelines, and home building subsidies (Gotham 2001:309).

Many New Dealers, including Eleanor Roosevelt, Harold Ickes, Aubrey Williams and Harry Hopkins acknowledged and worked to mitigate the effects of race on public policy; for instance, it was mandated that African Americans, who comprised about 10% of the total population, and 20% of the poor, would collect at least 10% of welfare assistance payments and various New Deal relief programs such as the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC) allocated 10% of their budgets to African Americans (Leuchtenburg 1963:244-246). President Franklin D. Roosevelt appointed an unprecedented number of African Americans to second-level positions in his administration; these appointees were collectively called the Black Cabinet. These efforts were largely responsible for the transition of black political organizations from the Republican Party to the Democratic Party by 1936, forging the political alliance between African Americans and the Democratic Party that still exists. Few efforts were; however, extended to ending racial segregation or guaranteeing the civil rights of racial minorities. The CCC was organized in racially segregated units; however, pay and working conditions were equitable (Leuchtenburg 1963:256-257).

Reformers and Housers - Ideals and Designs for Social Housing

Even before the onset of the Great Depression, a cadre of progressive American architects and planners had come to believe that fundamental restructuring of national residential patterns was needed. These design professionals and other reform-minded citizens, including urban and labor activists, envisioned the development of attractive and affordable alternatives to single-family suburbanization, which had become endemic by the 1920s (Mayer 1935:400). Albert Mayer, among other advocates of the rethinking of the American domestic landscape, saw new social housing not only as a solution for the problems of impoverished slum dwellers but a necessary step toward providing better lives for all Americans:

> The slum and the blighted district -- urban and rural - are only the most spectacular manifestations of the bad conditions under which almost all of us live. The people who live in slums can't afford to live in decent places. Those who can afford to don't get anything really satisfactory, unless they shift around with the shifting, sprawling city and suburb. Lack of play spaces and convenient parks, noise, exposure to traffic accidents, encroachment of business, overcrowded roads and streets and subways -- these affect the well-to-do only in less degree than they afflict the poor. The well-to-do shift to new areas, and the poor move into the abandoned unsatisfactory areas. If this sounds an exaggeration to anyone, let him simply visit the derelict areas that were good neighborhoods twenty, fifteen, ten years ago.

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> …the housing problem is twofold. First, there is the lack of reasonable planning and stability which makes our entire physical environment unsatisfactory. Then there is the problem for something like two-thirds of our population who haven't the money to pay for physically decent housing--whose income or relief wage or relief dole is not enough to pay the sum of real-estate taxes, current interest and amortization on cost of land and building, and adequate maintenance. On top of these permanent elements there is the impending housing shortage, which will affect both groups. The problem of the two-thirds is bluntly one that involves redistribution of wealth. The physical solution is similar for all:planning and construction of projects on a sufficiently large scale so that they can be free from traffic dangers and extraneous noise, can contain facilities for recreational and community life, and can achieve the economies of large-scale planning and its amenities of proper orientation to air and sunlight. Such projects must be so related to the larger community of which they are a part that they are within convenient reach of daily work, of shopping districts, of larger recreational and park areas (Mayer 1935:400).

Catherine Bauer [Catherine Krause Bauer Wurster], born May 11, 1905 in Elizabeth, New Jersey, was a leading member of a group of early 20th century idealists known as housers, social reformers, mostly women, committed to improving housing for low-income families. On the basis of her belief that social housing could produce good social architecture, and impressions made on her by the wide spread suffering during the Great Depression, she became a great advocate for the poor in the struggle for housing. Bauer was a charismatic figure in the reform movement, and one of its greatest theorists. Her classic *Modern Housing* (1934) made her an authority on social housing and she co-authored the Housing Act of 1937.

Bauer was significantly influenced by American urban critic Lewis Mumford and European and expatriate American artists and architects in Europe including Fernand Léger, Man Ray, Sylvia Beach, and the architects of change group; Ernst May, André Lurçat, and Walter Gropius.

European ideals and designs for social housing that had developed in the 1920s were adopted and implemented in the United States in the 1930s. The goal of the houser movement, beyond the creation of a supply of adequate, low-rent Government-built housing for the urban poor, was the establishment of an ordered environment for the urban poor that would eventually lead to the elimination of urban slums. European urban planning concepts such as Zeilenbau, or a plan that arranged buildings in parallel rows, to take advantage of maximum light and ventilation, were adopted for many projects. Limited traffic flow with planned circulation patterns, pedestrian walkways, courtyard areas and open spaces with park-like settings were also emphasized in the designs (Robinson et al:1999a:18). Most projects were designed to a human scale and were well landscaped. Some included private or semi-private garden spaces.

Ultimately, the uninspired, sterile, and institutional designs that began to characterize American public housing fell far short of the communitarian, European-style projects that the housers envisioned.

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The PWA - Public Housing Design and Construction

The United States Public Works Administration (PWA) was created as a federal agency under the National Industrial Recovery Act in June 1933. The agency's mission was to provide employment, stabilize purchasing power, improve public welfare, and contribute to a revival of American industry through management of the construction of public works and housing (Figure 3).

Horatio Hackett, a Chicago architect and engineer with limited experience in housing reform issues, was placed at the head of the PWA's Housing Division; consultants on staff included architects, Alfred Fellheimer and Angelo R. Clas (Robinson et al:1999a:21-23).

Figure 3: PWA Steam Shovel
(Franklin D. Roosevelt Library, National Archives)

Several subordinate units were organized within the Housing Division of the PWA; the Branch of Land Acquisition which handled property acquisition and supervised site development; the Branch of Plans and Specifications, staffed by architects, engineers, landscape architects, and cost estimators, who worked closely with local architects and engineers; and the Branches of Construction and Management, which were responsible for the final aspects of project development, including slum removal, construction supervision, and administration of tenant services.

In the first years of its existence, the PWA Housing Division oversaw all phases of site development for public housing projects, excepting the style in which the buildings were built; which was, at least theoretically, left to the local architects (Robinson et al:1999b:19).

As PWA public housing scholars Michael W. Strauss and Talbot Wegg wrote:

> …the style of buildings, whether they should be "modern," colonial, Spanish, or what-not, was on the whole left to the decision of local architects. They had only one watchword, simplicity. As a result there is, to the layman's eye, great variety in the exterior design of projects. New York, Chicago, Camden, Cleveland, and some others are modern; Jacksonville and Miami are of typical design; Charleston recalls the graciousness of its heritage; Boston is in keeping with the New England tradition; Dallas suggests the distinctive architecture of the Southwest (Strauss and Wegg 1938:68).

The autonomy of local architects in design decisions proved problematic; PWA officials determined that most American builders were incapable of designing large-scale public housing projects that met the high standards of the Housing Division. Months before the first federal government funded public housing project, First Homes, opened in Manhattan's lower east side on December 3, 1935, the Plans and Specifications Branch began the preparation of a series of plans for the basic units of public housing complexes, including apartments and row houses of all types and sizes. These plans were published in May 1935 as *Unit Plans:Typical Room Arrangements, Site Plans and Details for Low Rent Housing*, were adopted by most local architects involved with public housing projects, and became the standard for PWA public housing design (Robinson et al:1999b:19). Such publications were updated from year to year. Public housing design in Alexandria, Virginia seems to have been informed by these plans with considerable flexibility in final site plan development.

Over time, the use of standardized plans and model unit designs became more and more evident. Although the original rationale for this approach stemmed from observed deficiencies in the design skills of local architects, the ultimate effect was a net loss of freedom of design and architectural innovation. Further, economy increasingly dominated other considerations of design and construction.

Typical American public housing projects of this period included multi-family, low-rise residential buildings and an ordered site plan that arrayed the buildings around open spaces and recreational areas; buildings generally occupied less than 25 percent of the site (Figure 4 and Figure 5). The most common building forms were several-story walk-up apartments and row houses, often constructed of brick, simply designed and generally well-built (Robinson et al:1999b:21-22). Attached dwellings were popular with designers of public housing complexes, being more economical in both construction and operating costs (Robinson et al:1999b:21-22).

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Figure 4: K Street Projects in Washington, D.C.
(Franklin D. Roosevelt Library, National Archives)

Figure 5: Cedar-Central Project in Cleveland, Ohio; June 1937
(Franklin D. Roosevelt Library, National Archives)

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A community center, typically a one-story building containing management offices, recreation rooms or classrooms, and a hall for community functions such as dances or meetings, was usually integrated into the project. Management offices, maintenance buildings, garages, nursery schools, and buildings originally containing retail or office spaces comprised a non-residential component at some sites (Robinson et al:1999a:18-19, Robinson et al:1999b:21-22). Larger projects often included multiple commercial and community buildings and manifested as almost self-contained communities within the surrounding neighborhoods. These sometimes included heating plants, generally characterized by a tall smokestack (Robinson et al:1999a:18-19).

Spartan utilitarian design characterized the interior spaces of the individual residential units (Figure 6). Most units included one to four bedrooms, a kitchen, living room, and bathroom. Room sizes were minimal and the shapes generally regular. Walls were most often painted concrete block or plaster partitions; floors typically asphalt tile or linoleum over concrete, with the occasional use of wood parquet where costs and availability permitted. Units included modern conveniences; a gas range and electric refrigerator in the kitchens and full bathrooms (Robinson et al:1999a:19-20).

Each project was subject to both strict cost controls and minimum standards of appearance and livability. Various cost and space saving strategies were employed including open cupboards and closets and suite type plans as interior hallways were considered wasted space. Units were almost always situated to take advantage of maximum natural sunlight and ventilation, and arranged to maximize the privacy of residents (Robinson et al:1999a:19-20).

Factors in determining the location of public housing projects within local communities included proximity to employment opportunities, slum clearance, existing transportation and infrastructure development, and availability of suitable land. City blocks were often combined to form superblocks (Robinson et al:1999b:21-22) (Figure 7 and Figure 8).

Designers sought to invest the project's residents with a sense of communal identity, distinct from its surrounding neighborhood, through the deliberate site plans and the design and form of the buildings. Public art was also an important component of early PWA-era projects and some later designs. The earliest PWA projects successfully integrated European design theories and contemporary American housing reform philosophies; the best of these achieved very high standards of design, site planning, and construction (Robinson et al:1999a:19).

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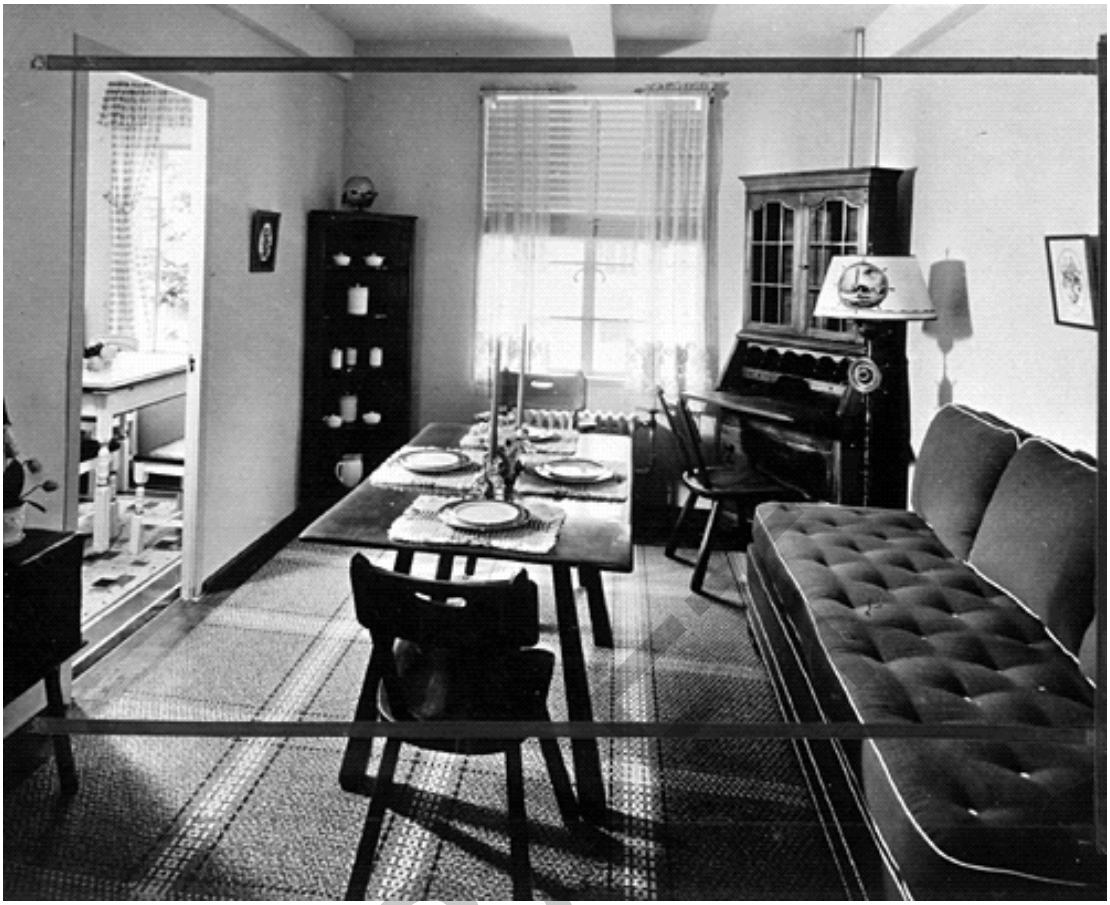

Figure 6: Public Housing Unit Interior, Hillside Homes, Bronx, New York (Franklin D. Roosevelt Library, National Archives)

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Figure 7: Aerial View, PWA Built Hillside Homes, Bronx, New York (Franklin D. Roosevelt Library, National Archives)

Figure 8: Aerial View of Williamsburg Houses in Brooklyn, New York (Franklin D. Roosevelt Library, National Archives)

Slum Clearance

Housing reformers during this period were divided over the issue of slum clearance. In the 1930s, most American cities included slum areas, neighborhoods characterized by substandard housing of various types, occupied by the very poor, often ethnic or racial minorities (Figure 9 and Figure 10). Many believed that slums were breeding grounds for crime and a major public health problem (Figure 11 and Figure 12). Traditional reformers believed that slum clearance served to eliminate blighted and overcrowded neighborhoods while the building of new low-income housing on former slum sites allowed the poor to continue to live near their places of employment. Others, including Bauer and many housers, believed that slum clearance was a waste of time and money that primarily benefited the real estate industry. Opponents of slum clearance contended that new housing built on former slum sites, even with public financing, would often be too expensive for the dispossessed tenants. Lewis Mumford, an icon of the houser group, wrote:"if we wish to produce cheap dwellings, it is to raw land that we must turn... The proper strategy is to forget about the slums as a special problem…. When we have built enough good houses in the right places, the slums will empty themselves" (Robinson et al 1999b:29).

Legal issues related to slum clearance proved to be a major obstacle for the PWA Housing Division projects. Early on, the PWA was determined to prove the feasibility of combining slum clearance with the construction of low-rent housing (Figure 13). Numerous PWA acquired sites that had been slum neighborhoods were condemned under the power of eminent domain. As some slum sites had hundreds of owners with whom the PWA had to negotiate, acquisition was sometimes very complicated. As a result of various legal challenges to condemnation proceedings before 1936, the PWA built all subsequent housing on vacant land or in sites for which it could negotiate clear title (Robinson et al 1999b:37).

United States Housing Act of 1937

As previously discussed, the Housing Act of 1934, although responsible for several major public works housing projects, was quite limited in scope. In December 1935, Senator Robert F. Wagner of New York began a campaign to push a broader housing bill through Congress (Robinson et al 1999b:33). In a speech before the NPHC, he defended his stand on public housing against attack from the political right:

> The object of public housing … is not to invade the field of home building for the middle class or the well-to-do ... Nor is it even to exclude private enterprise from participation in a low-cost housing program. It is merely to supplement what private industry will do, by subsidies which will make up the difference between what the poor can afford to pay and what is necessary to assure decent living quarters (Robinson et al 1999b:33).

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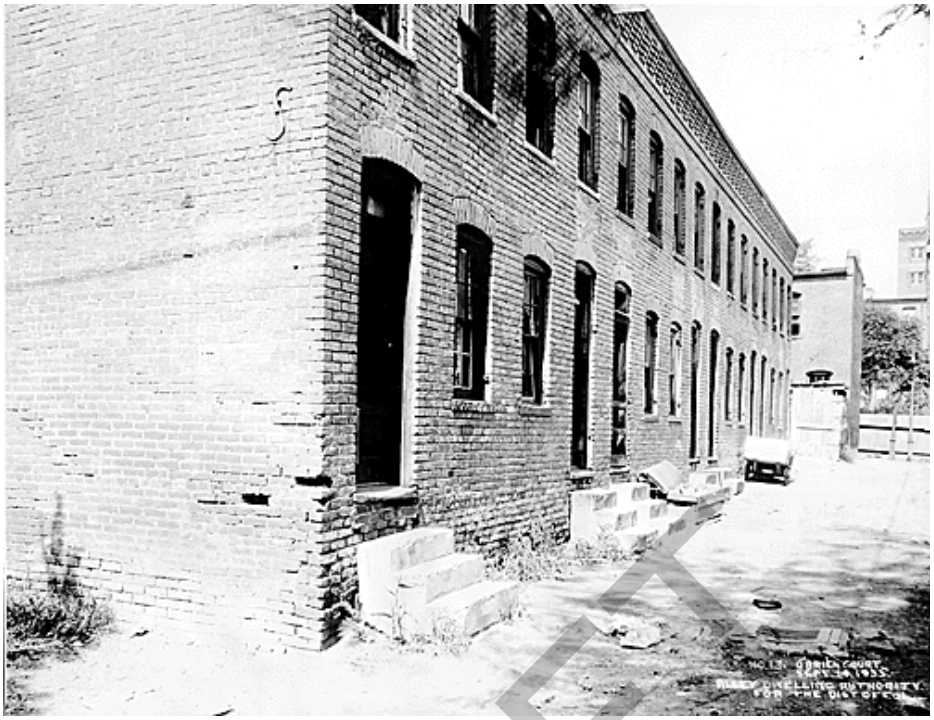

Figure 9: O'Brien Court Slum Dwellings, Washington, D.C., 1934-1936 (Franklin D. Roosevelt Presidential Library)

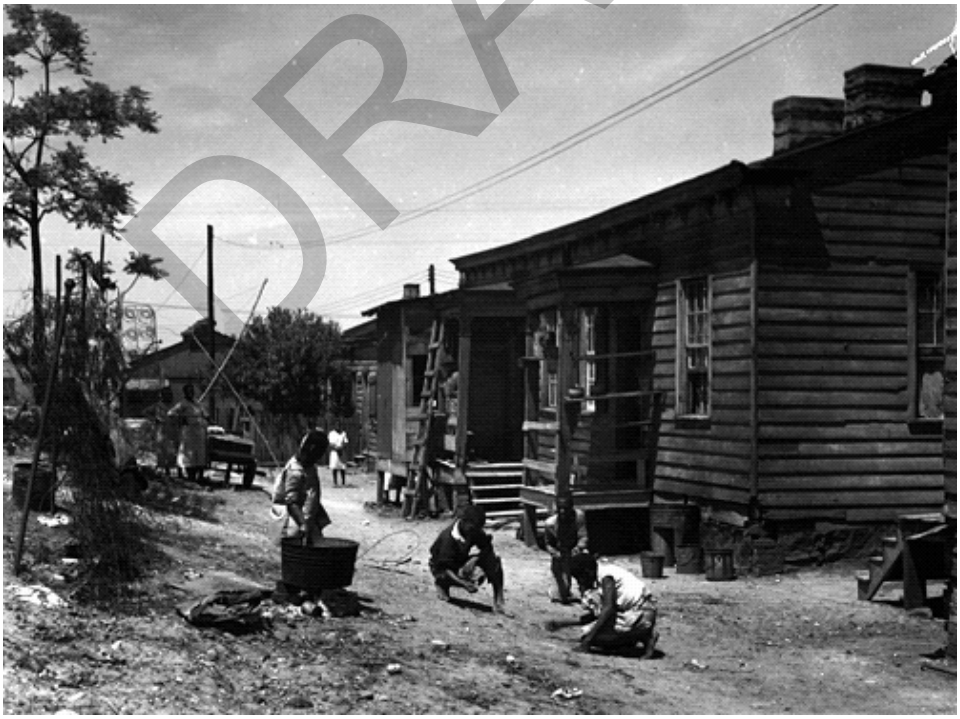

Figure 10: Canal Street in the Yamacrow Section of Savannah, Georgia, 1936 (Franklin D. Roosevelt Presidential Library)

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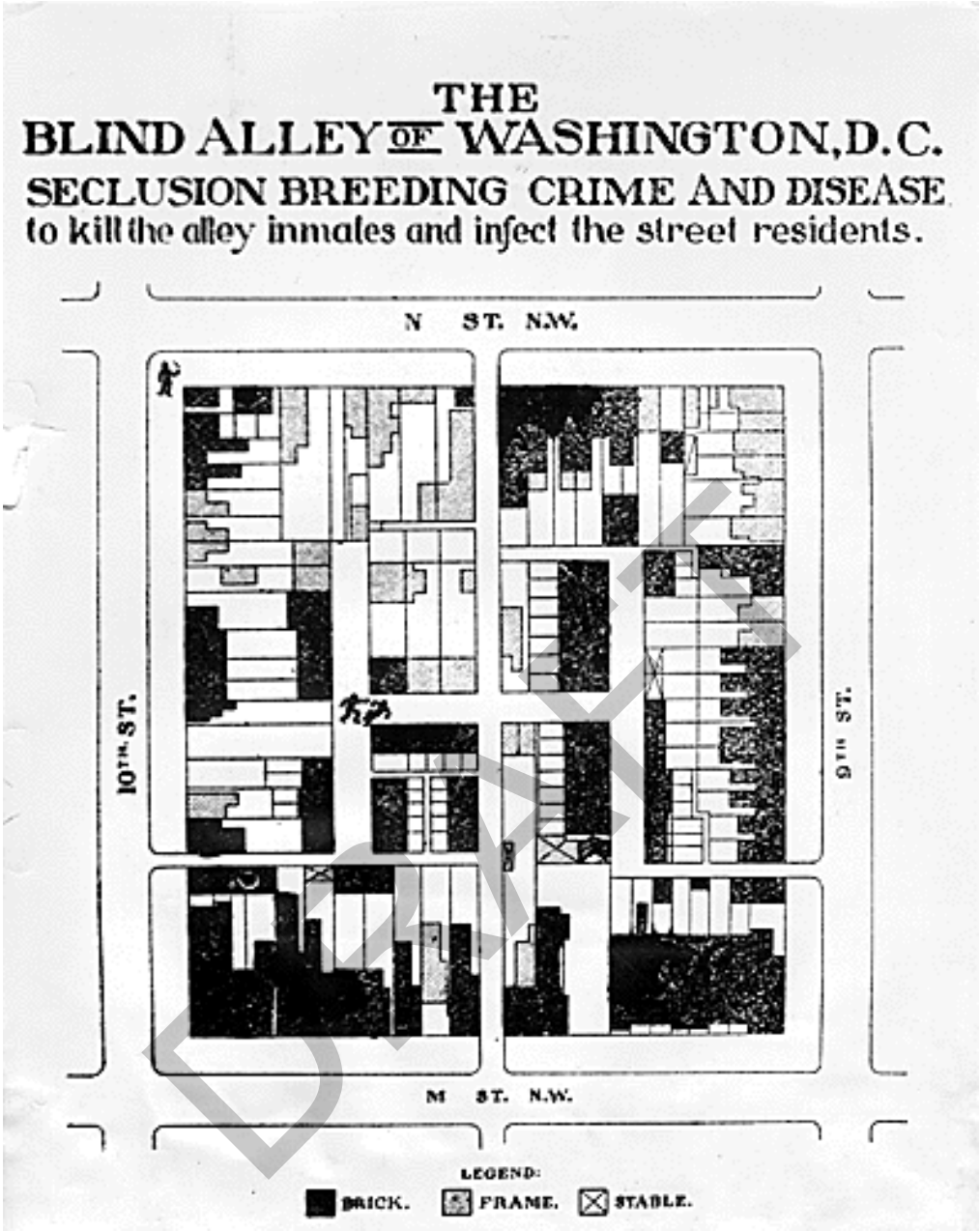

Figure 11: Propaganda for Slum Clearance in Washington D.C.
(Franklin D. Roosevelt Presidential Library)

Figure 12: Slums Breed Crime; USHA Poster from the 1930s (Franklin D. Roosevelt Presidential Library)

Figure 13: Slum Clearance in Washington, D.C., 1934-1936
(Franklin D. Roosevelt Library, National Archives)

Lobbyists for the private sector housing industry, amongst other groups, organized opposition to the new bill. One of the strongest and most vocal rebuttals to the philosophy of Wagner and his allies came from the president of the National Association of Real Estate Boards (NAREB), Walter S. Schmidt, of Cincinnati:

> It is contrary to the genius of the American people and the ideals they have established that government become landlord to its citizens … There is sound logic in the continuance of the practice under which those who have initiative and the will to save acquire better living facilities, and yield their former quarters at modest rents to the group below (Robinson et al 1999b:33).

Other business organizations followed suit, with the National Association of Retail Lumber Dealers, the U.S. Building and Loan League, and the U.S. Chamber of Commerce also expressing fierce opposition to public housing legislation (Robinson et al 1999b:33). The public housing activists responded by painting a bleak picture of the state of American housing:

> …AT LEAST A THIRD OF OUR HOUSING IS BAD ENOUGH TO BE A health hazard, but not all in the same way or to the same degree. The coverage of moral hazard is less than that of physical hazard, which is fortunate, as its effects are

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> worse. About two fifths of our housing is rural, divided more or less evenly between farm and non-farm. The Farm Housing Survey made in 1934 shows an appalling lack of modern sanitation and conveniences, except in a few favored regions. To call 80 percent of our farmhouses substandard is an understatement (Wood 1940:83).

Wood found data on urban housing conditions in the 1930s, derived from the *Real Property Inventories* housing field surveys conducted from 1934-1936, also disturbing. The structural condition of only 39% of urban homes was considered good, 44.8% needed repairs, and 16.2% was considered poor; 4.4% of urban dwelling units had neither gas nor electric lighting, 14.6% lacked a private indoor toilet, 19.9% had no bathtub or shower, and 17.4% of occupied dwellings were crowded or overcrowded (Wood 1940:83). According to Wood, "to call a third of the nation or a third of those who live in urban communities 'ill-housed' can hardly be an exaggeration (Wood 1940:83)." "One-third of a nation" became a rallying cry for the public housing movement (Robinson et al:1999b:34).

Enacted as law, the 1937 United States Housing Act, with the objective of providing affordable housing to the poorer segments of the population, provided stringent new cost guidelines to public housing projects that led to an increased emphasis on economy and greater standardization in American public housing:

> It is the policy of the United States to promote the general welfare of the Nation by employing its funds and credit, as provided in this Act, to assist the several States and their political subdivisions to remedy the unsafe and unsanitary housing conditions and the acute shortage of decent, safe, and sanitary dwellings for families of lower income and, consistent with the objectives of this Act, to vest in local public housing agencies the maximum amount of responsibility in the administration of their housing programs (United States Housing Act of 1937, Sec. 2; 42 U.S.C. 1437).

The new legislation revived the failing Red Hook housing project in New York City; however, it also tightly controlled the project's budget. The total cost per room was cut to nearly half that of earlier PWA efforts in New York City, and the project density far exceeded that utilized in earlier public projects in the city (Robinson et al:1999b:40-41).

The issue of slum clearance was also revisited in the 1937 act. Senator David I. Walsh, a proponent of slum reform from Massachusetts, added the "equivalent elimination" provision to the bill, which required the local authority to remove substandard slum units from the local housing supply in a "substantially equal number" to the public housing units it built. The local authority could meet this requirement by "demolition, condemnation, and effective closing" of substandard units, or through rehabilitation by "compulsory repair or improvement." This provision was supported by many commercial landlords, who feared that expanded housing supplies would lower the rents that could be charged for their rental properties (Robinson et al:1999b:37).

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United States Housing Authority

The United States Housing Authority, or USHA, was created under the 1937 Housing Act. This federal agency was designed to lend money to the states or communities for construction of low-cost public housing. Unlike the centralized organization of the earlier PWA Housing Division, which was responsible for every component of project planning and administration, operations at the newly established USHA were increasingly decentralized.

Roosevelt's Secretary of the Interior Harold L. Ickes successfully lobbied Congress to place the USHA within the Department of the Interior; however, President Roosevelt appointed Nathan Straus, a man strongly disliked by Ickes as the USHA administrator. This appointment resulted in Ickes distancing himself from the public housing program (Robinson et al:1999b:39).

Under the USHA, responsibility for initiating, designing, building and managing housing projects was given to local Public Housing Authorities (PHAs), while the Washington bureaucracy provided program direction, financial support, and consulting advice. In effect, site analysis, land acquisition, tenant distribution, and project design were handled by PHAs under the relatively strict constraints of the Federal program and the USHA furnished technical guidance, design assistance, project review, and issued program standards, management guidelines, design models, architectural standards, and building prototypes (Robinson et al:1999b:45).

Regarding the impact of increased standardization and restrictive budgets under the USHA on architectural style in public housing, it is clear that design creativity suffered during this period, continuing a trend that had actually begun under the PWA. Economy of materials and design trumped experimental and new design alternatives, resulting in what some critics have labeled an "unnecessarily barracks-like and monotonous" look. The social-psychological elements of project planning that had formed the core of the housers' vision were replaced by the goal of meeting minimum human needs of clean air and light within increasingly limited budgets. Although many new modern housing units were built, most were devoid of the artistic or aesthetic styling of earlier projects (Robinson et al:1999b:45).

As with the PWA projects, attempts were made to instill a sense of community in the public housing projects financed by the USHA. PHAs were encouraged to organize a variety of social, educational, and recreational events for the residents of the local complexes, most of which included a neighborhood community center. Choirs, nondenominational children's Bible schools, card clubs, dancing classes, nursery schools and neighborhood newsletters were amongst the activities and programs employed (Robinson et al:1999b:43). The USHA also attempted to increase public support for its programs and the new housing projects using city newspapers and government printed material, ground breaking and dedication ceremonies, tours of model homes, and radio broadcasts (Robinson et al:42).

Criticism of Public Housing in the New Deal

In its earliest phase, the American efforts in public housing were inspired by modern architectural theory, progressive social ideals and the praxis of urban activists; however, it soon foundered due to political squabbling, pressures from private sector builders, racial prejudice, classism, and

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uninspired design. Although a high degree of technical excellence was mandated by USHA for public housing design after 1937, the buildings generally showed investment in healthier and safer designs over aesthetic considerations. There was also long standing social bias toward plain public housing (Gardner 1981:67). Bias of this type might be supported by identification with property values as an expression of socio-economic status and a zeal for protection of private property rights (Hooks 2001:139).

Some historians, including Richard Pommer, have blamed the failures of public housing in the United States almost entirely on the architecture and design. Pommer explained that modern architecture was not embraced by the architects of American public housing projects due to the separation of housing designs, which remained traditional, from other building forms. Pommer added, "…the degradation of public housing in [the United States] resulted as much from the contempt of it and its inhabitants expressed by these purely architectural values as from the political-economic compromises necessary to sell it to the real estate owners, the rural politicians and the bureaucrats (Pommer 1978:264)."

Housing and urban planning scholar John F. Bauman noted that the private housing market has long undermined government programs in public housing. This antagonism from the private sector, together with factors associated with racism and classism, such as the resistance of the middle class to living in proximity to the poor or racial minorities, the idea of public housing as transitional and the failed aesthetics of public housing design have resulted in the current state of public housing. Bauman stated, "The nexus of privatism and racism has foreclosed serious attempts by either public or private agencies to make low income housing into more than a poor house…" (Gardner 1981:66).

Public Housing in the 1940s

Overview

As President Franklin D. Roosevelt moved industry toward war production and abandoned his opposition to deficit spending, the PWA became irrelevant and was abolished in June 1941. Although Congressional interest in public housing had begun to diminish in the late 1930s, the onset of World War II would lead to renewed interest, redirection and expansion of Federal housing efforts. As the United States increased industrial capacity in response to the expanding conflict, established manufacturing centers such as Chicago and Detroit, as well as new manufacturing sites, experienced a great influx of population which again drew attention to the inadequate stock of urban housing. Good quality and inexpensive housing for defense workers and their families became a component of the war effort, leading to the revivification of the American public housing program after 1941. The goal of the program was; however dramatically altered from the provision of housing for low-income families to housing for defense workers on the home front (Robinson et al:1999b:46).

Despite the patriotic rationale of the new public housing efforts, private enterprise and its supporters in Congress again formed opposition, arguing that federal involvement in housing should be limited to loans and mortgage guarantees to support private construction and, at most, the public construction of temporary housing. Political battles continued between public housing

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advocates and business interests and their allies, which included Congressional conservatives such as Senator Harry F. Byrd of Virginia and Republicans from rural constituencies. Opponents of public housing tried to derail defense housing funds being appropriated to the USHA and feared that public housing would emerge after the war to compete with private enterprise. The success of such attacks on government-built defense housing severely limited the extent of the public housing program during the war (Robinson et al:1999b:46).

The Lanham Act of 1940

In opposition to the USHA, a new housing bill that would severely restrict Federal efforts to build public war housing was sponsored by Republican Congressman Fritz Lanham of Texas. The Lanham Act, enacted as law on October 14, 1940 (54 Stat. 1125) was designed to provide relief for defense work areas found by the President to be suffering from an existing or impending housing shortage. In such cases, the Federal Works Administrator was empowered to acquire "improved or unimproved lands or interests in lands" for construction sites by purchase, donation, exchange, lease or condemnation. The Lanham Act provided $150 million to the Federal Works Agency to provide federally built housing quickly and cheaply in the most congested defense industry centers. It emphasized both speed in construction and economy of materials.

The Lanham Act represented a radical departure from previous federal public housing policy. It waived the low-income requirement for tenancy and made defense housing available to all workers facing the housing shortage. It also ordered local authorities to set fair rents at variable rates to be within the financial reach of all families employed in defense industries. The act exempted local authorities from the "equivalent elimination" clause, no longer requiring the demolition of an equal number of slum housing units for all public housing units built. Interestingly, the new policies conformed to the vision of earlier housers, such as Mumford and Bauer; public housing was becoming available to a more diverse section of American society, not only the most impoverished, and expensive, time consuming, and wasteful slum clearance was no longer mandated (Robinson et al:1999b:47).

Between 1940 and 1944, about 625,000 units of housing were built under the Lanham Act and its amendments with a total appropriation of nearly $1 billion.

War Trailer Projects

During World War II, the great majority of the public housing units, over 580,000, were of temporary construction, such as plywood dormitories and trailers (Robinson et al:1999b:52). Government built trailer camps became a common sight on the home front landscape during World War II:

> Across the length and breadth of America at war can be seen compact colonies of strange little cottages on wheels. These vehicles, each boasting all the comforts of home on a miniature scale, are known as trailers. A group or colony of them is a trailer camp. They are used to house workers in American war industries and other plants which have sprung up like giant mushrooms all over the United States. An

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> owner, with his auto, which. pulls his trailer, may journey 500 to l,000 miles to join some trailer camp near the factory where he intends to work …
>
> People do not live in trailers because they like the idea of being gypsies, but generally because there are few houses to rent in the big war industry centers. So as a last resort they buy or rent a trailer, or even make one. Each trailer is built on two or four wheels and towed behind the owner's automobile. There are thousands of these trailers gathered in colonies near the nation's war plants.
>
> There were not quite 200 trailers in the camp. There were four neat rows of them and a few more scattered under the trees in front of a wooded ravine. Two white, roughly macadamized roads let through the trailer village. In about the middle of the camp stood the office and utility buildings. The office building was a bare room with a concrete floor and on the wall was a poster advertising war bonds. At the end of the room was a small office which served as renting bureau and post office. Stretching down one side of the room was a store where one could buy everything with the exception of fresh fruit and vegetables; fish and fowl. There was every kind of delicatessen -- sausages, salami, cheeses and potato salad and great stocks of sardines and canned salmon, canned goods and groceries. There was a small selection of such meats as chopped beef, pork chops and stew meats. There were oranges, bananas, cakes and bread (Vorse n.d.).

As early as 1940, war trailers were being distributed to areas in need of housing for defense workers. In the National Housing Agency publication, *Standards for War Trailer Projects* (NHA 1942b), it was stated that trailers were to be used as expedient and temporary housing for defense workers, were to be transferred to other locations once adequate housing facilities became available, and were to be held to minimum construction standards due to their temporary nature. Additional guidelines suggested site selection in consultation "with local housing authorities, planning agencies, municipal officials, military authorities, industrial experts, and other persons in a position to give information and advice" (NHA 1942b:1). The primary criterion for site selection was proximity and convenient access to the war activity, usually a defense plant of some type.

Sites were to be, when possible, within walking distance to the war activity, "2 miles for men and 1 mile for women" (NHA 1942b:i). "For economy and speed of construction," site layout conformed to existing topography and utilized existing drainageways; water lines and sanitary sewers were installed on-site; storm sewers were not built (NHA 1942b:5, 15). Construction of paved roads accessing the site if not already present and sidewalks within the site were mandated (NHA 1942b:6). Acceptable site density was considered to be "12 to 18 trailers per acre of usable land" (NHA 1942b:i). Example site plans were included in the manual.

Service trailers or buildings ancillary to the residential trailers and their arrangement in the site plan were also specified in the standards. Community Facilities included "Community Toilets," to be located within 200 feet of the residential trailers; "Community Laundries," within 300 feet; and "Collection Stations" for "refuse, garbage, sink waste, water supply, and ashes" within 150 feet. Outdoor lighting was recommended to "supplement street lighting" on walkways between the residential and ancillary structures (NHA 1942b:7). Larger trailer camps, sites with 50 or more

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dwellings, were to be provided with on-site management and maintenance services, social or activity centers, outdoor recreation areas, health service facilities, and commercial facilities unless it could be demonstrated that adequate off-site facilities of these types were available to camp residents. Reduction or omission of such facilities required the approval of the Washington office of the Federal Public Housing Authority (NHA 1942b:9).

With the end of the war in 1945, the PHA was required, under the Lanham Act, to dispose of the temporary housing units, over 320,000 extant family dwelling and dormitory units at that time (NHA n.d.). The agency experimented with the reutilization of temporary war housing, in whole or in part, as barracks, utility buildings, and even rural dwellings and actively promoted the sale of such structures in domestic and foreign markets (NHA n.d.). The success of this program and the number of such structures that continued in use after the war is not known.

Following is a series of photographs documenting one or more war trailer camps in the vicinity of Alexandria, Virginia in 1941 (Figure 14 and Figure 15). These photographs were probably taken at Spring Bank Trailer Camp located on U.S. 1, in Fairfax County, south of the City of Alexandria (Netherton et al 1992:622). A segregated Farm Security Administration (FSA) Trailer Camp for African Americans was present in Arlington, Virginia by 1942 (Figure 16). Although few details relevant to this facility have been located at this time, a community building including "a well laundry" supplied with new aluminum Maytag Commander washing machines was located within the camp (Lupton 1996:21).

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Figure 14: "Trailer Occupied By War Department Employee and Wife from Pennsylvania. Trailer Camp near Alexandria, Virginia; March 1941" (Farm Security Administration - Office of War Information Photograph Collection; Library of Congress)

Figure 15: "Showers and Toilets for Trailer Camp Occupants; Trailer Camp near Alexandria, Virginia; March 1941" (Farm Security Administration - Office of War Information Photograph Collection; Library of Congress)

Figure 16: "Arlington, Virginia. FSA (Farm Security Administration) Trailer Camp Project for Negroes. Single Type Trailer; April 1942" (Farm Security Administration - Office of War Information Photograph Collection; Library of Congress)

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The Housing Act of 1949

After World War II, any effort to extend public housing policy was vigorously contested by special interest groups, sometimes referred to as the real estate lobby, including the National Association of Real Estate Brokers (NAREB), the National Association of Home Builders (NAHB), the U.S. Chamber of Commerce, the U.S. Savings and Loan League, and the National Association of Retail Lumber Dealers.

In 1945, legislation to extend the public housing appropriations of the 1937 Housing Act, which had been suspended before the war, was introduced in Congress. This legislation reached the U.S. House of Representatives as the Taft-Ellender-Wagner (T-E-W) Bill in 1948. Although it was bitterly fought by the real estate lobby and its political allies, after the election of Harry S. Truman as President of the United States in 1948, a popular mandate for passage of the bill was perceived. The T-E-W Bill was signed into law in July of 1949 as the Housing Act of 1949. The Act called for the production of more permanent public housing across the United States. Under Title I of the Act, the Housing and Home Finance Agency (HHFA) was authorized to provide capital grants and loan guarantees to local agencies for use in urban renewal; large scale land acquisition and slum clearance; under Title III, the Public Housing Administration (PHA) was authorized to allocate federal funds to local housing authorities for the construction of 810,000 public housing units over a six year period (Robinson et al:1999b:100).

Although the Housing Act of 1949 was nominally an extension of the United States Housing Act of 1937, it was also a great compromise between advocates of housing reform and the real estate lobby (Robinson et al:1999b:100).

Public Housing After 1949

Overview

In the perceived prosperity of the postwar years, public housing remained an integral part of Federal housing policy but received limited attention and funding. The rapid growth of population in the United States in the latter half of the 20th century and the concentration of this population in urban areas led to new problems in housing and the need for government to address these problems. Under the Housing Act of 1949, beginning in the 1950s, numerous massive public housing projects, typically high-rise complexes were constructed in urban areas across the country (Robinson et al:1999b:57).

In terms of design, public housing projects after 1949 were characterized by a simple, unified appearance. Standardization and economy became the most important elements of design; the "stripped modern" exterior architectural detailing of most public housing resulted in an institutional appearance. These later complexes also had much higher site densities than earlier projects, having both taller buildings with more units, and a greater number of buildings per site. The interiors of later public housing complexes also contrasted with the earlier ones, typically having smaller units with smaller rooms, connected by long hallways. Also, unlike earlier small-scale projects that were designed to blend with their surroundings, public housing in the second half of the 20th century tended to stand out in the urban landscape (Robinson et al:1999b:57).

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Many critics of the public housing system in the 1950s considered it tied to humanistic sentiments and not focused on practical methods of assisting the poor. They claimed that the bureaucracy involved in the public housing system was inefficient and significantly decreased the funds that were actually used for housing, that public housing tended to result in more racially segregated communities within cities, and that the demand on collective cooperation and unity necessary in public housing, due to the close quarters in which tenants lived, was often unreasonable. The most significant federal housing legislation to be enacted between 1949 and the 1970s was the Housing Act of 1959, which established a direct loan program for senior citizens in need of housing aid.

Although local housing authorities continue to be supported with federal funding through the Department of Housing and Urban Development (HUD), the federal government no longer pays to build new housing projects. HUD organizes all public housing in the United States. Federal programs begun in the last quarter of the 20th century, the Section 8 Housing Program, and HOPE VI involved government encouragement of and partnership with private sector entities to provide low cost housing and to redevelop distressed public housing projects as mixed-income communities. Since 2001, HUD has increasingly diverted funds from public housing toward home ownership programs. Many such programs including the "Renewing the Dream" tax credit work to encourage private sector housing developers to construct housing for low income residents. HUD has also formally recognized the persistence of inequalities in the conditions of housing for racial minorities and persons with disabilities.

Section 8

In reaction to the problems associated with the aging stock of public housing and increased requirement for low cost housing for those in need, the U.S. Congress passed legislation enacting the Section 8 Housing Program in 1974, which Richard Nixon signed into law. Section 8 encourages the private sector to construct affordable homes and assists poor tenants by giving a monthly subsidy to their landlords. This assistance can be 'project based, "which applies to specific properties", or "tenant based," which provides tenants with a voucher they can use anywhere vouchers are accepted. Since 1983, almost no new project based Section 8 housing has been produced. Effective October 1, 1999, existing tenant based voucher programs were merged into the Housing Choice Voucher Program, which is today the primary means of providing subsidies to low income renters.

HOPE VI

In 1989, a National Commission on Severely Distressed Public Housing was named and charged with proposing a National Action Plan to eradicate severely distressed or obsolete public housing by the year 2000. The Cranston-Gonzalez National Affordable Housing Act (NAHA) of 1990 included the first reference to the acronym HOPE (Homeownership and Opportunity for People Everywhere). NAHA programs included HOPE for Public and Indian Housing (HOPE I), HOPE for Multi-Family Units (HOPE II), and HOPE for Single-Family Homes (HOPE III). The HOPE VI program, also known as the Urban Revitalization Demonstration Program, was authorized by the Departments of Veterans Affairs and Housing and Urban Development and Independent Agencies Appropriations Act of 1993. It was also authorized, with slight modifications (amending

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Section 24 of the 1937 Housing Act), by Section 120 of the Housing and Community Development Act of 1992. The program focused on the concept of mixed-income New Urbanist developments, which better blended with existing neighborhoods than previous public housing developments. PHAs on HUD's Troubled Housing Authority list were eligible to apply for HOPE VI funds. In 2009, HOPE VI received a $120 million budget. By the following fiscal year, it received no funds while the new Choice Neighborhoods program received $250 million. According to HUD, while functional, HOPE VI grants were used to demolish 96,200 public housing units and produce 107,800 new or renovated units. 56,800 were to be affordable to the lowest-income households (United States Department of Housing and Urban Development 2016).

Public Housing in Alexandria

Overview

The history of public housing in the City of Alexandria may be traced to the last years of the 1930s, beginning with the establishment of the Alexandria Housing Authority and planned USHA slum clearance efforts in the city. In the early 1940s, several temporary public housing projects for defense workers - war trailer camps - were established in the city. Several permanent public housing projects, including Ramsey Homes, were acquired or constructed by 1945. Segregation of the city's public housing appears to have been a constant component of the system. In 1965, with the integration of two African American families into the previously "whites only" Cameron Valley Homes, efforts to remedy this situation were made (Reft 2013; WP 1965:C1).

The Alexandria Housing Authority

In June of 1939, the Alexandria Housing Authority was formally established as a public agency under the Housing Authority Law, Chapter 1, Title 36 of the Code of Virginia of 1938, as a result of work done by the local Council of Social Agencies and the Woman's Club. Reportedly, the municipal authorities were originally opposed to the creation of the agency; however, the city appropriated $3,000, granted as a loan, to fund the Authority, pending anticipated financial assistance from the USHA. In 1940, the agency had one permanent full-time employee, the executive director, two part-time typists and an architect hired on a contingent basis. Its first mission was clearing slums and creating new affordable housing in the Berg and Parker-Gray neighborhoods where little investment had occurred since before the Depression (Woodbury 1940:140).

During the 1940s and 1950s, the Authority constructed new units and acquired ones built for the war effort. It was renamed the Alexandria Redevelopment and Housing Authority (ARHA) by 1956 as it was granted authority to issue bonds. New developments continued in throughout the coming decades. The City established a Housing Office in 1975, and increasingly received federal Community Development Block Grants (CDBG), which funded infrastructure development and anti-poverty programs in affordable housing areas. Though ARHA received no funding from the City, in 1972, ARHA and the City jointly adopted Resolution 99 with the City agreeing that it must maintain units or engage in one-for-one replacement for any units that are removed from its affordable inventory. This was enacted because public development or redevelopment activity

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made the elimination of existing housing desirable. Resolution 830 superseded Resolution 99 in 1982 to incorporate publicly assisted housing occupied by the elderly and disabled persons.

Since inception, the primary mission of the agency has been to provide sanitary and safe dwelling accommodations to persons of low income at affordable rents in the city. ARHA's annual operating cost and capital funding for the upkeep and maintenance of ARHA properties are primarily funded by the U.S Department of Housing and Urban Development (HUD). The City appoints the nine members of the ARHA Board of Commissioners.

Slum Clearance in Alexandria

In a letter to the editor of the *Washington Post* in December 1935, a citizen of Alexandria expressed outrage at the paper's hostility to the emerging federal housing program and its contention that local government could handle the housing crisis:

> In my own hometown I know of no present or past attempts to remove the slum dwellings or even discuss the possibility of removing them. Shacks that were formerly grog shops and houses of worse repute are now renovated with a coat of paint, brass dooor-knockers [sic], green shutters, foot scraper, and a tub and are rented to the stupid petit bourgeois for fabulous sums while the former inhabitants are turned out to shift for themselves and develop bigger and better slums by their shifting…your "local government" is a non-entity and has failed to alleviate conditions… (WP 1935:8).

In October 1939, the USHA earmarked $900,000 for use by the Alexandria Housing Board in a program of slum clearance and the construction of "200 family units that may be individual dwellings, row houses or single apartments." Provisions for slum clearance mandated that for each unit constructed an existing unit would be renovated or razed. The units were expected to rent from between $14 and $18 monthly and were to be made available to families earning less than $75 per month (WP 1939:12).

According to a letter to the editor of the *Washington Post*, slum clearance in Alexandria was underway by the beginning of 1941, the author informed:

> …of a situation which exists in the town of Alexandria…about the close of the year notices went out to various colored families living in Alexandria, in that area near the railroad tracks between Oronoco and Princess Streets, that because of the slum clearance in charge of the Housing Authority, these families must vacate the shacks in which they then lived and move to other homes so that better houses might be erected there.
>
> …However, they did not move…and on January 2, 1941 the wrecking crews came…Today I received word that the houses on Princess Street are having their roofs taken off…all those people living in that row of houses, including a child with a broken neck, will be entirely homeless, without even the shelter usually given to

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> animals…Alexandrians are content to allow people to be treated worse than animals.
>
> It seems that the Housing Authority should have…ascertained whether there were enough places for these people to move… (WP 1941a:10).

In a 1944 interview, Virginia Representative Howard Smith noted "the extremely pressing problem of District slums and the dire need here for proper Negro housing." Smith remarked on the recent efforts toward slum clearance and public housing in Alexandria:

> Over in Alexandria we can see in a small way the blessings of slum clearance. There are two blocks down there of fine brick dwellings for Negroes, with backyards and plenty of air and sunlight. They replaced former slums. It is deeply gratifying to see the pride and self-respect which a decent place to live has engendered in the occupants of these homes. They are beautifully kept (WP 1944b:B1).

Proponents of the Taft-Ellender-Wagner housing bill of 1948 noted that Alexandria, with a population of about 75,000, had available only 421 rental housing units for low income families (130 units for white families, 291 units for African-American families), not including those allotted for military personnel (WP 1948:15). Former defense housing, including Ramsey Homes, was acquired by ARHA for use as public housing in the 1950s, and additional public housing was constructed in the 1950s and throughout the latter half of the 20th century to address the housing needs of low-income families.

In addition, there was a general housing crisis for all classes of African American with deed restrictions not allowing black people to buy and forcing them to live in Washington, D.C. “The city’s eighteenth- and nineteenth-century urban core was seen as dilapidated and overcrowded, while its western portions were largely rural and underdeveloped. With the post–World War II suburban construction boom taking place in nearby counties, local leaders were especially concerned that white middle-class families would avoid Alexandria” rather than concerning themselves over the black middle-class (Moon 2016:29).

In 1985, a group called "The 16th Census Tract Crisis Committee" accused city officials of deliberately reducing and eliminating housing opportunities for African Americans in the city, beginning in the 1960s (WP 1985:F1). They filed a complaint with HUD, that the constitutional rights of African Americans were violated by city actions. Backed by the NAACP Legal Defense Fund, The 16th Census Tract Crisis Committee singled out the following city actions as violating the Civil Rights Act of 1968 (WP 1985:F2). Among other things, they complained that the city was:

> Using zoning code, code enforcement or condemnation to demolish homes occupied by African Americans without providing affordable alternatives;
>
> Rejecting planned urban renewal projects and renovating housing units that were generally too expensive for African Americans;

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Closing the historically African-American Parker-Gray High School and reselling the property for commercial and upper end housing use rather than low income housing; and

Enacting a 1984 ordinance that designated the Parker-Gray African-American community as a special preservation district.

Residents of the primarily African-American Parker-Gray neighborhood opposed the extension of the Old Town Historic District into the neighborhood as it would increase property values and property taxes and force them from their homes (WP 1984:C1).

Ramsey Homes Defense Housing

During the Second World War, the United States Housing Authority (USHA) constructed Ramsey Homes, then known as Lanham Act Alexandria Defense Housing Project VA-44133, as permanent housing for African-American defense workers. Alexandria architect and architectural historian, Delos H. Smith, FAIA, of Smith, Werner, and Billings Architects, proposed two Modernist designs for the project. The first option consisted of three buildings comprising 19 units, while the second option consisted of three four-unit foursquares and a three-unit L-shaped building constructed of more economical materials complex. The final plan included landscaping and a simple paved play area within the L of the triplex.

Approval for construction of Ramsey Homes was attained in November 1941. It was completed in November 1942. Some units were already occupied prior to the entire project's completion. The original residents of the complex were African American defense workers, but their identities were kept secret as a matter of national security. The 1945 Alexandria City Directory does not list the odd-numbered addresses on the 600 block of N. Patrick Street as a result of this policy. Similarly, photographs and information concerning the Naval Torpedo Station on the waterfront, which employed an integrated work force and where residents of Ramsey Homes may have worked, were similarly withheld from public access until after World War II (WP 2014).

The Alexandria City Directory for 1947 listed the residents of the Ramsey Homes project in that year. Two of the listed residents, Carneal Coffee and Cleveland B. Tivy, appear to have been associated with the defense industry, their occupations listed as "USA" (perhaps the Army) and "Clerk War Dept." respectively. Other residents listed include Will Daniels, barber; George W. Witherspoon, auto mechanic; and Charles E. Smith, janitor. All of the residents were noted to be African American. The appearance of listings for the Ramsey Homes residents in 1947 reflects the end of the policy of secrecy that likely caused their omission from the war-time city directories, and the listed occupations of the residents suggests that the housing was no longer restricted to defense workers.

After World War II, the Federal Public Housing Authority sought to sell the Ramsey Homes; the City of Alexandria contemplated the purchase of the site, and the *Washington Post* reported that the Mayor of Alexandria claimed the wartime housing did not meet city building codes and were therefore "substandard" (WP October 1946:5). The property did not leave federal hands until 1953, when the ownership of Ramsey Homes was transferred to the Alexandria Redevelopment and

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Housing Authority (Alexandria Deed Book 356:407), which remains the owner and manager of the property.

Other Housing Projects in the Vicinity of the Ramsey Homes

Several other public housing projects have been constructed in the vicinity of the Ramsey Homes and the Parker-Gray District. The earliest projects were built in the 1940s, as either defense housing or slum clearance public housing. The following brief descriptions of public housing projects are presented in chronological order by construction date.

John Roberts Homes

The first public housing project constructed in the Uptown/Parker-Gray area was the segregated "whites only" John Roberts Homes, built in 1941 in the block bound by Oronoco Street, E. Braddock Road, N. West Street, and the RF&P Railroad line. John Roberts Homes consisted of twenty-one wood-frame buildings each of which contained between four and ten units. The projects were razed in 1982 and replaced by the Colecroft Station residential development. Ninety units were replaced by ground lease to a private developer and the construction of 90 project-based units at the Annie B. Rose House.

Cameron Valley

Originally built around the same time as Ramsey Homes, Cameron Valley became the focus of a replacement-housing program in 1987. ARHA sought to build and acquire and rehabilitate a variety of housing types in scattered locations to replace all 264 homes. Sixty homes were rebuilt onsite, 30 units were New Construction Public Housing, 55 were Rehabilitation projects, 152 units were located in Glebe Park, 38 condominiums were located in Park Place, and 41 units were at scattered housing sites. The project received a CDBG and was required to considered size, scale, materials, and setback of the existing neighborhood, induced traffic, minority economic participation, affirmative action goals, and job training.

George Parker (Hopkins-Tancil Courts)

George Parker Homes public housing, renamed Hopkins-Tancil Courts in the 1980s, are located on two blocks bounded by Fairfax Street, Royal street, Pendleton and Princess Streets. The housing consists of two-story brick buildings constructed for military housing circa 1942 and later turned over to ARHA for use as public housing units for low-income African-American families. When renamed, they were rehabilitated under the Moderate Rehabilitation program and provided with project-based voucher subsidies.

Samuel Madden Homes (Downtown) or the Berg

The Samuel Madden Homes (Downtown), also known as the Berg, was a 100-unit public housing complex, built between ca. 1942 and 1959. It was built adjacent to the George Parker Homes and occupied two contiguous blocks, bounded by Pendleton Street to the north, Princess Street to the south, the George Parker Homes to the east, and North Pitt Street to the west. The earliest units

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were two-story brick row townhouses constructed for military housing circa 1945. The project, named for the first African-American pastor of the Alfred Street Baptist Church, was initiated as part of a program of slum clearance, with the "blighted" area extending well beyond the site of the public housing units, and including areas north of Madison Street and west of N. Fairfax Street. After clearance, some of the land became the location of temporary houses built to provide displaced families a place to live while the Samuel Madden Homes were under construction. It was replaced in 2005 by Chatham Square, a mixed-income community of 52 units on-site plus 48 scattered units, for one-to-one permanent replacement.

Samuel Madden Homes (Uptown)

Samuel Madden Homes (Uptown) were built in 1945, in the 900 blocks of Patrick and Henry Streets and the 1000 block of Montgomery Street, and are a non-contiguous element of the Samuel Madden (Downtown) project several blocks to the east of the Parker-Gray District. The Samuel Madden Homes and the later James Bland project were all the work of architect Joseph Saunders, and were very similar in design. The project includes side-gabled brick row town houses, sometimes with six or more repeated in a row, and positioned around landscaped garden areas that are oriented to face the north-south streets. Through oral history interviews with residents who lived in the neighborhood and in the Samuel Madden Homes and James Bland Homes public housing projects in the 1940s and 1950s, it has become apparent that little distinction was made by the residents between the Samuel Madden Homes (Uptown) and the later and adjacent James Bland Homes projects. Typically, both were known as "the projects." Perhaps due to confusion associated with Samuel Madden Homes (Downtown), Samuel Madden (Uptown) is frequently referred to as “James Bland” by area residents.

James Bland and James Bland Addition

The James Bland Homes occupied two entire and three partial city blocks bounded by First, N. Patrick, Madison, N. Alfred, Wythe, and N. Columbus Streets. Constructed in 1954 and 1959, the project was named for James Alan Bland, a 19th-century African American musician and songwriter. Although formally integrated, the complex became almost entirely African American after the completion of the project. between 2008 and 2014, ARHA redeveloped the site with the assistance of the urban home building firm EYA in four phases as the award winning Old Town Commons. The original 194 public housing units were replaced by 134 affordable triplex and multi-family units and 245 market rate townhomes and condominiums. The mixed-income community incorporates a mixture of architectural styles reminiscent of Colonial Revival, Italianate, Folk Victorian, Queen Anne, and modern “industrial inspired”.

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ARCHITECTURAL CONTEXT

The Effect of Early 20th Century Experimentation in Structural Systems and Prefabrication on Architecture in the Washington Metro Region

Before the World Wars

Builders on a quest for fireproof material began experimenting with sand, gravel, and lime around 1850. By 1860, the first patent for a reinforced concrete wall was granted, yet it wasn't until after 1900 and a number of patents to improve production and stability, that its use became widespread. Concrete's perhaps most visible early application was for the roadbed of the first National Auto Trail, Lincoln Highway, a coast-to-coast interstate built and operated by a private association with the assistance of local governments in 1913. The Lincoln Highway Association and subsequent auto clubs built "seedling miles" to gain support for the Good Roads Movement and lobby the federal government to support widespread infrastructure improvements (Gaudette and Slaton 2007). At the same time, "Ernest Ransome in Beverly, Massachusetts, Albert Kahn in Detroit, and Richard E. Schmidt in Chicago, promoted concrete for use in 'Factory Style' utilitarian buildings with an exposed concrete frame infilled with expanses of glass" (Gaudette and Slaton 2007:3).

A pioneer in both structural precast concrete and affordable housing, Grosvenor Atterbury began to experiment with techniques in housebuilding in 1902 with the idea that prefabrication could solve the bulk of housing needs. Early precast concrete units proved expensive due to heavy investment in the molds and transportation challenges and were only cost effective on large-scale projects. Around 1907, he designed precast hollow-core panels for walls, floors, and roofs, and between 1910 and 1918, oversaw the construction of several hundred houses for the Russell Sage Foundation in Forest Hills, Long Island, where the units arrived by truck. With quality results, the cost remained high, and though the production and structural engineering were innovative, the architecture was not with stucco, wood, and brick veneers and a vocabulary of Tudor Revival and Colonial Revival styles (Kelly 1951:12-13).

Other attempts at prefabrication included Thomas Edison's cast-in-place reinforced concrete homes in Union Township, New Jersey (1908); "the Merrill System of monolithic concrete walls formed in situ (1908); Simpson Craft, a complete house system of concrete, about 90% precast (1917); Lakeolith, the precast ribbed panel system of Simon Lake, the submarine designer (1918); [and] the Hahn Concrete Lumber System of precast and site-formed concrete (1919)" (Kelly 1951:14). Though none were considered practical enough to translate to mass production, Edison's cast iron molds were used to construct houses in Pennsylvania and Virginia (Hurd 1994).

Architect of the Ramsey Homes, Delos Hamilton Smith entered the professional world at the same time experimentation took off. He grew up in the years after the 1876 Centennial Exhibition in Philadelphia, America's celebration of 100 years of independence and its first major World Fair, which sparked the nostalgic and enduring Colonial Revival movement. During his youth, the World's Columbian Exposition or Chicago's World Fair was held 400 years after Christopher Columbus landed in America on an extensive Beaux Art style campus, which promoted Neoclassicism, symmetry, and balance, and like the Philadelphia Exhibition had long lasting effects on the future of architecture and urban planning, particularly in Washington, D.C. Like

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many of his contemporaries, Smith trained in the Beaux Art style and became part of the City Beautiful movement as he had an intense interest in history and worked frequently in revival styles.

Born in 1884 in Willcox, Arizona, Smith graduated from high school in Washington, D.C. and received his B.S. in architecture from George Washington University (GWU) in 1906 (Smith 1946). As an undergraduate student from 1904 to 1906, Smith worked as a Junior Architect Draftsman for $840 per year at the Treasury Department in the Office of Supervising Architect (OSA) (United States 1906). The majority of architects working in the D.C. metro region began their careers at the OSA, which functioned from 1852 to 1939 and employed over 100 architects during Smith's tenure to design Beaux Art style federal buildings throughout the U.S., including courthouses, post offices, mints, marine hospitals, and custom houses. A fellow junior architect, J.R. Kennedy would later work for the U.S. Housing Corporation, the first of its kind in the federal government, and become involved with the noted craftsman John. J. Earley and his experimentations in precast concrete. Smith and Kennedy were active in the Washington Architectural Club, which was popular among younger OSA architects until it disbanded during wartime. Upon graduation, Smith took positions with locally prominent firms Hornblower & Marshall (1907-1909), Hill & Kendall (1910-1911), and Jules Henri de Sibour (1911-1912). From 1910 to 1916 he taught part time at GWU and received his M.S. from the institution in 1916. He concurrently established his own practice, where he focused on Gothic and Colonial Revival ecclesiastical and residential commissions, such as the circa 1914 St. John's Episcopal Church in Bethesda, Maryland (Smith 1946).

While the majority of residential and governmental architects like Smith worked with more traditional materials and styles, a minority of practitioners, primarily but not exclusively in the Midwest and West, began to experiment with Modernistic forms and materials, drawing from nature and industry. Locally, the most conspicuous use of concrete occurred in the federally owned Meridian Hill Park in D.C., designed in the Beaux Art style with experimental decorative precast concrete developed by John J. Earley. Around the same time that Smith came to D.C. from Arizona, Earley (1881-1945) moved from New York City during his childhood. He attended St. John's College in Annapolis, Maryland and apprenticed under his father, who was an ecclesiastical artist and stone carver. After his father's death in 1906, he took over the studio in Rosslyn, Virginia and began to experiment heavily with decorative aggregate in concrete to create mosaics. In 1911, research conducted for the National Bureau of Standards led him to develop what became the Earley process, which he employed on traditionally styled park features throughout Meridian Hill Park beginning in 1916.

World War I (1914-1918)

The Federal Government's first major attempt to address housing arose from a desperate need as the U.S. entered the war. In 1917, the Council of National Defense formed a Housing Committee. The following year, the Housing for War Needs Act passed and the U.S. Housing Corporation was organized, employing many architects who had worked at the OSA, including Kennedy. Under its organization, master plans, housing, local transportation, and other facilities were provided for industrial worker communities, and housing projects were designed and constructed for war workers. Projects in the D.C. area included the Washington Belt Line track construction. Master plans included street and site plans, grading and paving, sewer and water supply, street profiles,

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property maps, and architectural drawings of house types. After Armistice, construction activities ceased July 1, 1919, and the agency primarily worked toward liquidating assets and disposing of real estate until 1952 (Matchette 1995).

The Army Quartermaster Corps dismissed experimentation in concrete and prefabricated housing before and during World War I, arguing that balloon framing was mastered by most builders and that expedited large-scale construction required a proven system no matter how labor intensive or outdated. After testing pre-cut sectional wood, sectional steel, and wire-mesh concrete at Fort Myer, Virginia, prior to World War I, the Quartermaster General determined that traditional methods of prepping material on site was, as he had theorized, cheaper and more efficient due to the average builder's skill set. The Army had little confidence in private companies meeting demands on short notice and managed to create 240,000,000 square feet of space with minimal prefabrication within 18 months (Garner 1993).

Reflecting on the architecture and funding of public housing over 20 years after World War I's Armistice, Catherine Bauer, Director of Research and Information at USHA, wrote,

> For the most part the private construction industry found it unprofitable to build homes for low-income families and therefore confined itself to the more profitable task of catering to the higher income groups. On the few occasions when private enterprise did build homes for low-income groups, the architect's services were frequently dispensed with or-what is even worse-the architect was asked to turn out plans for jerrybuilt chickencoops [sic].
>
> Public enterprise, on the other hand, never made more than a few scattered efforts in the low-rent housing field. During the World War the Unites States constructed and operated low-income rent homes for munitions workers and shipbuilders. But when the war was over, instead of following the example of England and most European counties by launching a large-scale public housing program, the Federal Government retreated from the housing field and sold its holdings to private interests (Bauer 1939:65-66).

In Alexandria, the steel and ferro concrete Torpedo Factory at 101 North Union Street was planned for torpedo production during the war, but was not completed until after its end (Applar 2008). It is the earliest example of the industrial style popularized by Albert Kahn and influential in later Modernistic commercial design.

From 1916 to 1918, Delos H. Smith served the U.S. Navy as Supervising Engineer at the U.S. Naval Academy in Annapolis (Smith 1946). During his tenure, he oversaw the first of several expansions of the 1906 Beaux Art style Bancroft Hall, the largest dormitory in the world (Kelly 2011:332) (Figure 17). As with the Army, the Navy did not engage in experimental housing.

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Figure 17: 1918 Addition to the 1906 Bancroft Hall, Overseen by Delos H. Smith, while Serving as Construction Supervisor at the U.S. Naval Academy (Lowe 1981)

Post World War I

While experimentation in concrete housing flourished in the private sector after the war, the federal government turned its attention to infrastructure after the successful lobbying of the Good Roads Movement. An early adopter of mass produced affordable housing for employees, industries made advances where government left off, often building company towns with their own products. In contrast, the American Steel and Wire Co. in Pennsylvania sought to eliminate steel and built foursquare housing similar in form to the present-day Ramsey Homes around 1920 with concrete walls, floors, roofs, and partitions. "While the flat concrete roof is the logical covering for a concrete house, it was believed that the public would not be entirely satisfied with this type, and as a concession to the taste of the occupant and the necessity of some form of insulation for the ceiling, the concrete cornice and roof slab are poured and a low-pitched false roof of asbestos shingles on a wood frame is placed over it" (Whipple, ed. 1920:80) (Figure 18).

Plate 71. A STREET FRONT OF CONCRETE HOUSES AT DONORA, PA.

(See Page 112 for Typical Plans for Third House from Right) (Floor Plans for Right-End House Are Shown on Page

Figure 18: 1919 Reinforced Poured Concrete Houses and Duplexes in Cement City Historic District, Donora, Pennsylvania, Built by American Steel and Wire Co. for Employees (Comstock 1919)

The 1920 book *Concrete Houses, How They Were Built* (Whipple, ed.) illustrates the wide variety of reinforced and precast concrete systems developed in the first two decades of the century, including Edison's aforementioned precast Ingersol system. It also shows the wide variety of styles employed from the Colonial Revival to Craftsman to flat-roofed Mediterranean Revival. As noted, Americans were resistant to flat-roofed houses outside of the Southwest and West unless some sort of parapet or embellishment was added. Though Modern examples were widely built during this period in Europe, they only appeared sporadically in America.

> Every home builder benefits by the accumulated experience of others, as expressed through his architect and his builder. Equally he is the loser by that experience which holds to traditional methods and materials long after better things are obtainable. This conservatism coupled with a mental laziness that resists the effort required to develop new ideas, is chiefly responsible for the slow development of the fireproof house.
>
> The percentage of houses in which concrete is the principal structural material has been so small that the man who builds a fireproof house is looked upon in most localities as a curiosity and his work as a kind of dementia (Whipple 1920:5).

Grosvenor Atterbury continued his work on housing and concrete from 1919 to 1921 supported by the American Car and Foundry Co. In 1921, Boston industrialist Albert Farwell Bemis began to sponsor research into prefabrication as he owned a number of companies related to the building industry.

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> For the next 10 years, a period during which prefabrication was quite removed from the limelight, Bemis Industries, Inc., studied building materials and structural methods in its laboratories and in the field, experimenting with a large number of different types of construction… The lack of continuity in approach may be noted when we consider that the 22 systems which were tried included such elements as solid wood panels, plywood panels, concrete poured in situ, precast gypsum blocks, precast gypsum slabs, gypsum tubes, an excelsior-magnesite material known as "Acoustex," steel, [etc.] (Kelly 1951:20-21).

In Alexandria, builders and architects had begun to use hollow tile, a precast structural terra cotta block in walls, as well as concrete block for foundations after the war (The Hollow Building Tile Association 1922). Local architect J.A. Clark produced 10 designs for 30 houses in the Rucker-Johnston Subdivision of the Rosemont Historic District, to be constructed entirely with hollow tile in 1919 (Maxwell and Massey 1991). Like most examples of precast buildings of this era, the houses had veneers that concealed their advanced technology.

Despite exposure to evolving technology and architectural styles, Delos Smith's interest remained firmly planted in historicism. After his experience at the Naval Academy, he surveyed and documented historic buildings in Annapolis and continued to design a number of houses and churches in historical styles, completing the Dutch Colonial Revival Henry C. Winslow House in Leesburg, Virginia and the Colonial Revival Mrs. S. Lawrence Heap House in Chevy Chase, Maryland in 1922 (Walsh 1922:256) (Figure 19). When he joined the American Institute of Architects (AIA), his office was located in the Neoclassical Union Trust Building designed by the prominent architect, Waddy Butler Wood, in 1906 at 740 15th Street, N.W. in D.C. period (AIA 2015).

The Great Depression (1929-1939)

Despite the Depression, the 1930s provided fertile ground for architects and planner working on projects in private industry and under the New Deal. Presenting a stark contrast to the revival work of Smith and many regional American architects, Henry-Russell Hitchcock and Philip Johnson prepared an exhibit and book entitled *The International Style* (reprinted 1995) for the two-year-old Museum of Modern Art (MoMA) in New York in 1932. With origins in American industrial design and European design schools such as the Bauhaus founded in 1919 in Germany, the International Style emphasized volume over mass, depended on rhythmic organization of asymmetrical arrangements, and outlawed ornamentation, relying on steel and concrete to achieve these three goals (Roth, ed. 1983:630). The deceiving simplicity of the style and its vernacular variations complimented the mood of the Great Depression (1929-1939) and World War II (1939-1945) as well as ongoing experimentation in translating the production lines of the motor industry into the housing industry to create affordable options for all; yet, America continued to resist such architecture in residential building until after World War II.

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Figure 19: 1922 Mrs. S. Lawrence Heap House, Chevy Chase, Maryland by Delos H. Smith (Walsh 1922:256)

A year after the MoMA show, the Chicago World's Fair of 1933 exhibited only three prefabricated experimentals houses in its showcase of contemporary homes, showing two of steel and one of precast synthetic stone during a period when up to 50 systems were actively tested. In 1935, *The Architectural Forum* reported on 33 commercially available systems eight of which were structural precast concrete. Three years later, it listed 25 commercially available systems, including five of structural precast concrete, which continued to challenge developers. While steel had been preferred, long-term technical issues and high costs led to its fall in favor by the late 1930s and a temporary shift back to wood framing occurred (Kelly 1951:49-50).

In 1931, Robert L. Davison founded the Housing Research Division of the Pierce Foundation, in Raritan, New Jersey to research "materials and structures that would yield a house of lowest possible cost consistent with adequate physical standards. Among the materials which this group tried were concrete, plywood, composition board, cellular glass, stabilized earth, and a hydro-calcium silicate composition known as 'Microporite' [in an effort] to find a single material which would serve both as structure and as enclosure" (Kelly 1951:30-31). In 1935, the group completed the first of many experimental houses, using a steel frame and precast reinforced Microporite slabs for walls, floors, roof, and partitions. Most notable was the Foundation's work on plumbing and

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heating equipment and studies of floor plans and living habits, which contributed to future standards in low-income housing.

During this period, Alexandria was still a relatively small community on the outskirts of the district. Serious experimentation in design, materials, and planning had not occurred in the city, while national publications promoted "Concrete for New Designs" (Raymond 1936) and innovative projects were ongoing in the surrounding counties and D.C. Following his prototype at Meridian Hill Park, John J. Earley achieved the title of Master Craftsman. His decorative concrete projects remained largely sculptural and included the East Potomac Park Field House (1919), the Shrine of the Sacred Heart (1923) for which he won an AIA award, and the Department of Justice ceiling (1933) in D.C. as well as the Baha'i Temple in Wilmette, Illinois, and the Lorado Taft Fountain of Time, in Chicago (Kelly 2011:325). After completing dozens of projects and winning an award from the American Concrete Institute, John Earley's interests expanded beyond the decorative use of precast concrete in large-scale commissions. In 1934, he partnered with engineer, Basil G. Taylor, and architect, J.R. Kennedy (a frequent collaborator), to design and build a group of five experimental houses in Silver Spring, Maryland. In 1935, he incorporated the Earley Process Corporation in D.C. as his first Polychrome House was being completed. Each house consisted of concrete slabs with crushed Oklahoma jasperite in the walls, buff Potomac River gravel in the fluted corners and entrance pillars, and accents of ceramic material in other locations to create a mosaic prefabricated at his sculpture-studio-turned-production plant in Rosslyn (*Architecture* 1933:227; Lavoie 1990:2-4; Hurd 1994). The two-story version of the Polychrome House resembled and possibly influenced Delos Smith's foray into Modernism at the Ramsey Homes in the following decade (Figure 20).

Kennedy and Earley designed the system with the hopes that an average small builder could erect the precast concrete walls using an A-frame and a chain hoist and lock the slabs with cast-in-place columns. Despite promise in Silver Spring, Earley met some of the same challenges as fellow precast concrete builders in production and transportation. He completed five in the Polychrome Historic District and was commissioned to build one more in Capitol Hill; however, he failed to sell the prototype for use in mass produced housing. Essentially, the decorative nature of the Earley Process would have been considered nonessential and value engineered out of projects during World War II (Lavoie 1990). It was perhaps too experimental for local tastes as well. G. Frank Cordner, AIA, who lived in Alexandria around 1940 according to directories, wrote of America's ongoing resistance to architectural and technological advances in 1936,

> Exterior design of residences is slow to respond to new types so one may come upon a very modern plan or layout having its exterior done in the details of one of the conventional or period styles. It is the same with interiors. Entire interiors in the modern style are rare in small houses as yet but one will find single rooms, decoration here and there and other features that indicate the trend. One influence that will speed this up is the more rapid spread of furniture done in the modern manner. Movable equipment is always more quick to respond to new influences than fixed matters like buildings.

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Figure 20: 1936 Two-Story Polychrome House, Silver Spring, Maryland by Sculptor and Craftsman John J. Earley and Architect J. R. Kennedy (Terry 1995)

> Surprisingly enough, there are but few really new materials to be found on the new houses. Older materials being used in new ways are much more common (Cordner 1936:59).

Within the American Modernist movement, builders and architects on a local scale gravitated towards the more ornate yet also technologically driven Art Deco style in the 1930s and Art Moderne or Streamline Moderne in the 1940s, while others still clung to historical styles, particularly in Virginia. Rather than allowing form to follow function as was promoted in the International Style, architects working in the Deco and Moderne styles incorporated stone, brick, decorative concrete, and metal veneers with abstract, geometric motifs on often symmetrical, flat-roofed buildings. The same year as the MoMA exhibition, factory pioneer Albert Kahn applied Art Deco rather than the industry-inspired International Style to the Alexandria Branch of the Ford Motor Company, which consisted of a steel structure with yellow glazed brick veneer and three simple concrete additions on wood pilings in the Potomac River. Built one year after the completion of Smith & Edwards's Neoclassical courthouse in Maryland, this dramatically different building served Ford on the Alexandria waterfront until 1942, when the U.S. Navy used it for the war effort (Applar 2008). Other early examples of Art Deco in Alexandria include the Virginia Public Service Company at 117 South Washington Street designed by noted Chicago architect Frank D. Chase in 1930, the 1932 former Coca Cola Bottling Plant at 1500 King Street, the George Washington Middle School designed by the state architect Raymond V. Long in 1934,

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and multiple commercial buildings on Mount Vernon Avenue and King Street as well as one at 301 North Patrick Street.

Streamline Moderne trended a little later than Art Deco and was used much more in domestic architecture than its predecessor. Examples include numerous row houses, duplexes, and apartment complexes in Alexandria. Along Mount Vernon Avenue and King Street, commercial buildings incorporated curved corners and corner windows. The grandest local example is National Airport constructed in 1941 (Cox 2012). Many examples of apartment buildings and duplexes built in the city in the 1940s began to exhibit features of the International Style as ornamentation was stripped away. A few rare examples of vernacular International Style homes exist from this era, including a house at 2800 Farm Road designed in 1937 by Samuel Lorrin Powell for himself (Shapiro 2016) and a house 3301 Cameron Mills Road (Cox 2012).

Continuing on the same path, Delos Smith did not engage in the early Modernist movement in the 1920s and 1930s. From 1924 to 1934, he partnered with traditionalist Thomas H. Edwards and worked on a number of large commissions, which were clearly influenced by the work of the OSA and architects of the Naval Academy. In 1931, they completed the Grey Courthouse in Montgomery County, Maryland in the Neoclassical style with a large portico of Ionic columns, using a granite foundation, steal structure, and Indiana limestone veneer (Figure 21).

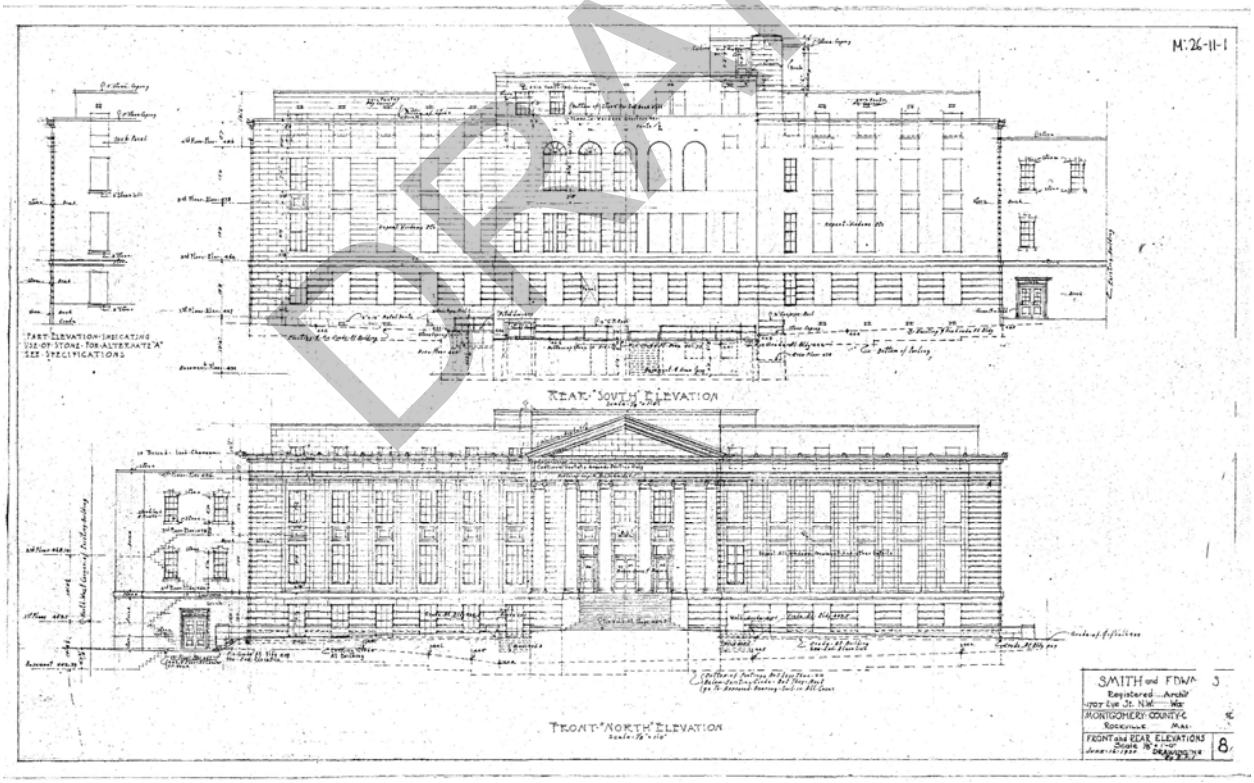

Figure 21: 1931 Grey Courthouse, Montgomery County, Maryland by Delos H. Smith & Edwards (Montgomery County Government 1976).

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A natural extension of his survey of historic Annapolis, Smith began to prepare documentation for the Historic American Building Survey (HABS), a National Park Service program developed during the Great Depression in 1933 and authorized in 1934 for out-of-work architects to spend ten weeks documenting "America's antique buildings". The project was expanded and continues today. During this time, Smith documented 250 colonial churches among other properties (Kelly 2011:183, 332).

World War II (1939-1945)

After occupying the Rhineland in 1936, Austria in 1938, and Poland in 1939, the Nazis provoked the U.S. to start emergency planning and military expansion in preparation for its involvement in World War II. The Army Quartermaster General began to prepare plans for the expansion of existing military bases and the construction of new camps. The Vinson Law of 1938 facilitated the most significant expansion of the Navy since World War I, calling for an increase in ships, aircraft, and shore facilities. The Bureau of Yards and Docks Department of Planning and Design prepared drawings of training stations, officers' quarters, barracks, dispensaries, hangars, shops, power plants, warehouses, dry docks, parachute lofts, and magazines during expansion and awarded two major contracts for new bases on the Atlantic and the Pacific while improving the pre-World War I Naval training stations at Newport, Rhode Island; Norfolk, Virginia; Great Lakes, Illinois; and San Diego, California in 1939. Yet, when European conflict escalated in 1940 facilities were still inadequate (Navy Facilities Engineering Command [NFEC] 2007:15; Garner 1993:16).

The Planning and Design Department was comprised of officers from the Civil Engineering Corps, the vast majority of which were civilian planners, engineers, and architects, including Delos Smith, who worked under the direction of Capt. Thomas Trexel, Chief Architect. “This contingent of civilian employees would-account for differences between projects in the two branches of service” (Garner 1993:17). In 1942, the Navy created construction battalions known as the Seabees to build overseas. Enlisted Seabees reported to civilian command officers of the CEC while entering warzones “behind the Marines to build bases, harbors, roads, and airstrips overseas” (Garner 1993:17). In addition to engineering innovative structures like sectional floating dry docks that played a direct role in the invasions of Sicily and Normandy, CEC architects and engineers worked on countless other projects for non-military federal agencies through their private practices. Between 1939 and 1945, the number of CEC officers increased from 150 to more than 10,000 and the stateside naval shore facilities grew to 14 times their 1939 size (Garner 1993:16-18).

In January of 1939, Catherine Bauer, Director of Research and Information at USHA, wrote in *The Architectural Record*,

> Until the creation of the United States Housing Authority, only a little more than a year ago, an almost inseparable barrier stood between American architects and the millions of American people who have always been in great need of well-built and well-designed homes.
>
> So far, 53 architectural contracts have been awarded by the local [housing] authorities, and in a rapidly growing number of other towns architectural contracts are now under immediate consideration… [Low-rent housing project] constitutes a

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> challenge to the resourcefulness, the adaptability, and the social viewpoint of the American architect… If he is the average local, architect, he had no experience at low-rent housing whatsoever. The experiences he has had, moreover, might even prove harmful. If he has spent much time catering to the whims of individuals who demand homes in the manner of this-or-that period of such-and-such country, he will naturally have formed certain habits of thought which will have to be completely broken or else temporarily discarded. Ostentation, luxuriousness, and fancy gadgets have no place in homes that are designed, not for the well-to-do families livin separatedly, but for low-income families living in low-rental community. This does not mean that the architect will have to lower his standards; in many cases he will have to observe certain standards of livability which he would never think of living up to in his ordinary practice…
>
> … most important of all, he must plan homes that will for at least 60 years… he has a responsibility not only for delivering a product in good condition but for planning it in such a way that it can be used and kept in good condition at a minimum of expense over a larger period of time… In some cases, architects have made use of new and more economical materials …
>
> Uncritical acceptance of standard designs-whether they be the standards of other countries, the standards ordinarily followed in the local community, or the standard designs drawn up by the USHA-must be avoided. Architects must study local tastes, customs, and habits-and above all, the needs of the families who will live in the projects (Bauer 1939:67).

During the war, the prefabrication industry lost the luxury of the slow experimentation and development of the 1920s and 30s and the ability to meet all local needs. Skeptical after witnessing decades of failed experimentation, the Public Buildings Administration planned a prefabricator's demonstration in 1941 at Indian Head, Maryland, which in itself was somewhat of a failure. By the time the event commenced, thousands of prefabricated houses were already under construction elsewhere and the firms that signed on proved to be inexperienced and ill equipped to join prefabricated parts properly. Minor successes included competitive production prices, ease of disassembling and reuse, and less onsite labor and traffic. In 1941, more than 18,000 housing units were built, making it the first year of serious mass production in housing (Kelly 1951:54-55).

The military remained skeptical of prefabrication as it had been in World War I, however, the risk of not being able to procure conventional construction materials for the scale of this war was too great not to authorize experimental housing. Metal, masonry, and other materials replaced wood in building endeavors on a number of bases and in housing projects within cities (Garner 1993:15) Experimentation with precast concrete as the primary structural component also continued and increased primarily because of the war and the need to conserve steel. Trade magazines almost exclusively covered the war's effect on housing issues and technological advances. In *The Architectural Record*, Dorothy Rosenman (1942:42-44) pointed to the squalor of make-shift houses along highways and trailer camps on the outskirts of cities, noting that not enough attention was given to the construction of housing while cutting edge factories went up overnight. "War Needs…. Housing" illustrated nationwide examples from housing authorities in Freeport and

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Houston, Texas; Almeida, California; Wilmington, North Carolina; Seattle, Washington; and Chicopee, Massachusetts. The same issue covered "Housing from the Tenant's Viewpoint", revealing the biggest complaint was related to square footage. "What rooms were designed for and what they are actually used for are frequently quite different things. Thus does the nicest theory fall before the fact" (*The Architectural Record* 1942:71-72). The same year, *The Architectural Record* reported,

> Important among the materials currently being given new scrutiny in the stress of war building conditions is precast concrete. Precast materials, both in architectural and structural uses, have major potentials in relation to wartime objectives-such as using materials to their full capacities, conserving steel and other critical metals, saving time and labor on the job.
>
> For many years mass housing has been a fertile field for experimentation with all manner of materials and ideas, and in recent years precast concrete, latest of concrete developments, has begun to appear in new housing ideas. The two shown on this page [Cameron Valley and Ramsey Homes] are of more than passing interest, as they are experimental projects for federally financed war housing. The current call for demountable units, built in factory production and quickly erected and moved, coupled with present or expected shortages of certain materials, lends fresh interest of this use of concrete.
>
> Built in an experimental housing project of the RSA [Cameron Valley] at Alexandria, Va., these houses of precast concrete are now reaching completion, from plans by Kastner and Hibben, architects. Slabs are used for floors, walls and roofs, with a board type insulation above the roof slabs. Houses of stabilized earth block and of rammed earth are also part of the project (*The Architectural Record* 1942a:55) (Figure 22 and Figure 23).

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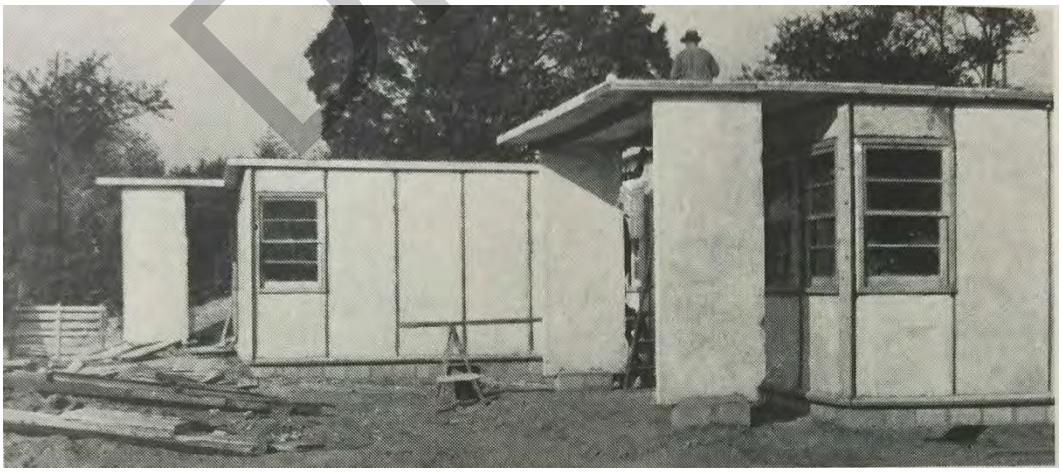

Figure 22: Cameron Valley Homes Under Construction with Experimental Precast Concrete Slabs (*The Architectural Record* 1942a:58).

Figure 23: Perspective View of Alexandria Housing Authority, Cameron Valley Housing, Alexandria, Virginia (Lowe 1988)

Critics credited the passage of the Lanham Act in 1940, which funded the Ramsey Homes, and the centralization of defense housing under the FWA with "some of the most progressive work architecturally" performed by "able practicing architects" (Funk et al., ed. 1942:30). "Structural experiment under the Division was chiefly advanced at the Alexandria, Va., project by Kastner & Hibben [at Cameron Valley] (along with numerous plan variations) and included rammed-earth stabilized cement" (ibid). In several of the units, Thomas Hibben experimented with concrete, asphalt-stabilized adobe brick, bituminous earth block, and cement-stabilized tamped earth. In some examples, he used two methods in one house. In his work at Cameron Valley, he hoped to create a prototype for producing mass-produced rammed earth walls with metal forms and mechanical tamping machines. Like other innovators in concrete and architecture, Thomas Hibben was the son of an artist. He studied architecture and engineering at Princeton University, the University of Pennsylvania, and schools in London and Paris. He began his career in Indiana and in the early 1930s, moved to Washington to serve as chief engineer in an emergency reconstruction program and work on New Deal projects under President Roosevelt. Prior to his work in Alexandria, he wrote two children's books about tools and metallurgy and designed buildings at Butler University and the first phase of the Lincoln Boyhood National Memorial. During World War II, Thomas worked as an industrial and construction engineer in the Bureau of Economic Warfare and served active duty in the African, Italian, and Austrian campaigns. After the War, he

worked in foreign trade and the economic development of emerging nations (Hibben 2003:297-299). Educated at the State University in Hamburg, Germany, Alfred Kastner came to the United States in 1924 at the height of the Bauhaus movement. He first partnered with Oskar Stonorov, and in 1934, they designed the International Style Carl Mackley houses in Philadelphia, "which was the first limited, divided, self-supporting housing project financed by the Public Works Administration" He later worked with the world renowned Modernist Louis I. Kahn on a Roosevelt Project in Hightstown, New Jersey, a very early example of a fully integrated community. Following the war, "he served as Director of the Bureau of Advanced Housing at Princeton University from 1965 to 1971, where he worked to rationalize techniques used in housing construction" (University of Wyoming, American Heritage Center 2012).

In the same article covering Kastner & Hibben's Cameron Valley project, *The Architectural Record* reported,

> Still in the drawing stage is another experimental housing project [Ramsey Homes], also for Alexandria, Va. Done with precast concrete slabs, this one for USHA. The same typical slab unit is used for floors, walls and roof. Floor joists rest directly over the wall studs, transmitting the load directly to the foundation walls. The wall section (left) and the details [below] show how slabs are fitted together and are tied with rods and tie wires. Architects are Smith, Werner & Billings (*The Architectural Record* 1942a:58) (Figure 24).

As he had in World War I, Delos Smith served in the U.S. Naval Reserve in World War II from 1940 to 1945 as one of hundreds of commanders in the CEC. His assignment was design superintendent of the Army and Navy Munitions Board at the Norfolk Navy Yard (John D. Rockefeller, Jr. 2015). In 1940, just over a year before designing Ramsey Homes through his private practice, Delos Smith returned to his birthplace of Willcox, Arizona during extensive travels across the U.S. in his continued work for HABS, for which he sometimes served as photographer and sometimes historian. His reintroduction to historic southwest architecture, much of which consists of structural adobe blocks, stucco, and clean lines not unlike Kastner & Hibben's work, may have played a part in his divergence from the traditional East Coast styles that dominated his entire career in his 1942 USHA project (Figure 25). He may have also been influenced by fellow Naval Reserve professionals working at the CEC, the value engineering that they had to consider during wartime, and the gradual adoption of Modern trends in more local examples.

For USHA, Smith, Werner, and Billings Architects constructed Ramsey Homes, then known as Lanham Act Alexandria Defense Housing Project VA-44133, as permanent housing for African-American defense workers. He and his partners proposed two Modernist designs for the project (Figure 26 and Figure 27). The first option consisted of three buildings comprising 19 units, while the second option consisted of three four-unit foursquares and a three-unit L-shaped building constructed of more economical materials complex. Smith also worked on a number of the Cameron Valley homes with Kastner & Hibbens.

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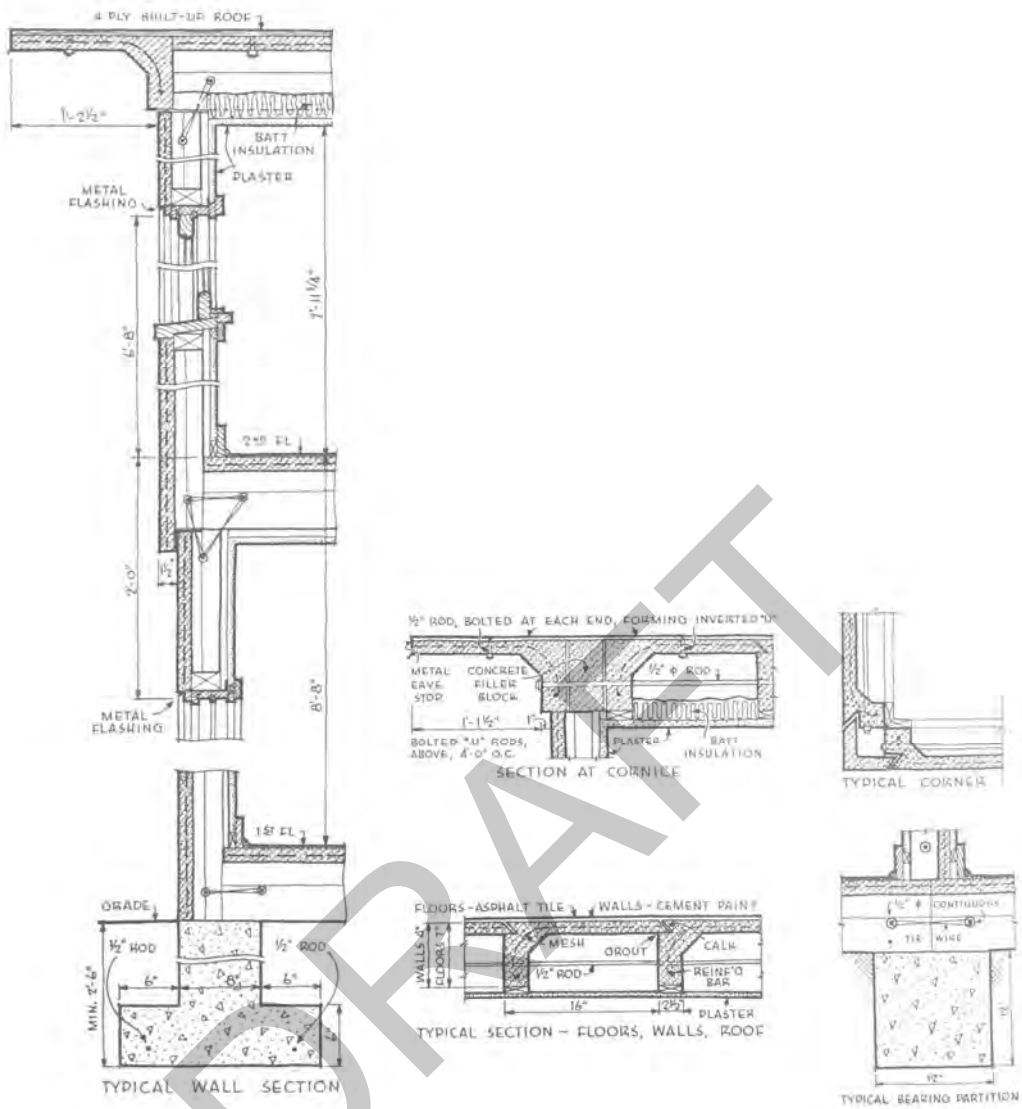

Figure 24: Sections of Precast Concrete Specified for Ramsey Homes (*The Architectural Record* 1942a:58).

At Ramsey Homes, he used "Fab-crete" developed in 1939 by Joseph E. Hines of Kensington, Maryland, assignor to Frabcrete Corporation of Richmond, Virginia. Patent No. 2,270,846 was granted on January 27, 1942 (Hines 1942) (Figure 28). The system was much like other experiments from the decade. The application stated,

> The present invention is directed to improvements in building constructions, and more particularly to buildings that are formed from pre-cast units of cementitious material.
>
> The primary object of the invention is to produce a building employing units so constructed that they may be easily and quickly assembled and held in rigid relationship to provide walls, partitions, floors and roofs.

> Another object of the invention is to provide a building unit which is light in weight, water and fire proof and so fashioned that the units when united can be used to produce a building of any desired size and shape, and at a minimum cost.
>
> Another object of the invention is to` provide units so constructed that when assembled will eliminate the use of interior frame-work as supporting mediums therefor [sic].
>
> Another object of the invention is to provide building units to which may be conveniently secured composition board, laths and the like in order to impart to the interior of the building the desired finished appearance.

In 1942, the project was completed and built in the International Style unlike any of Smith's previous work.

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Figure 25: House & Fence, Willcox, Cochise County, Arizona
Photographed by Delos H. Smith (1940)

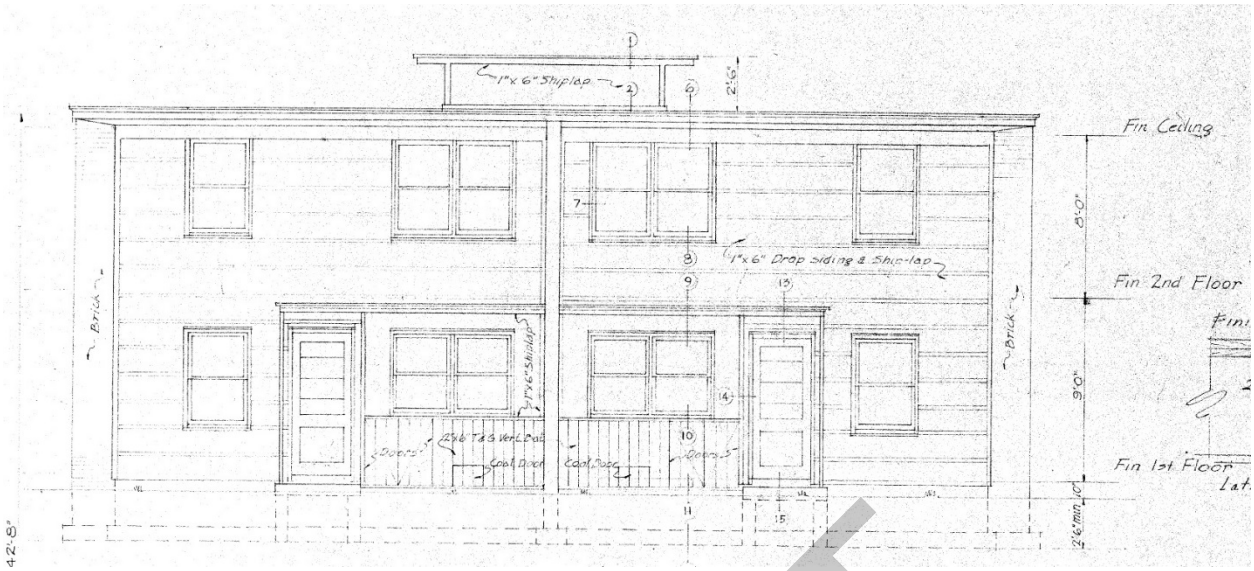

Figure 26: First Draft Elevation July 7, 1941 Lanham Act Alexandria Defense Housing Project VA. 44133 (Smith 1941a)

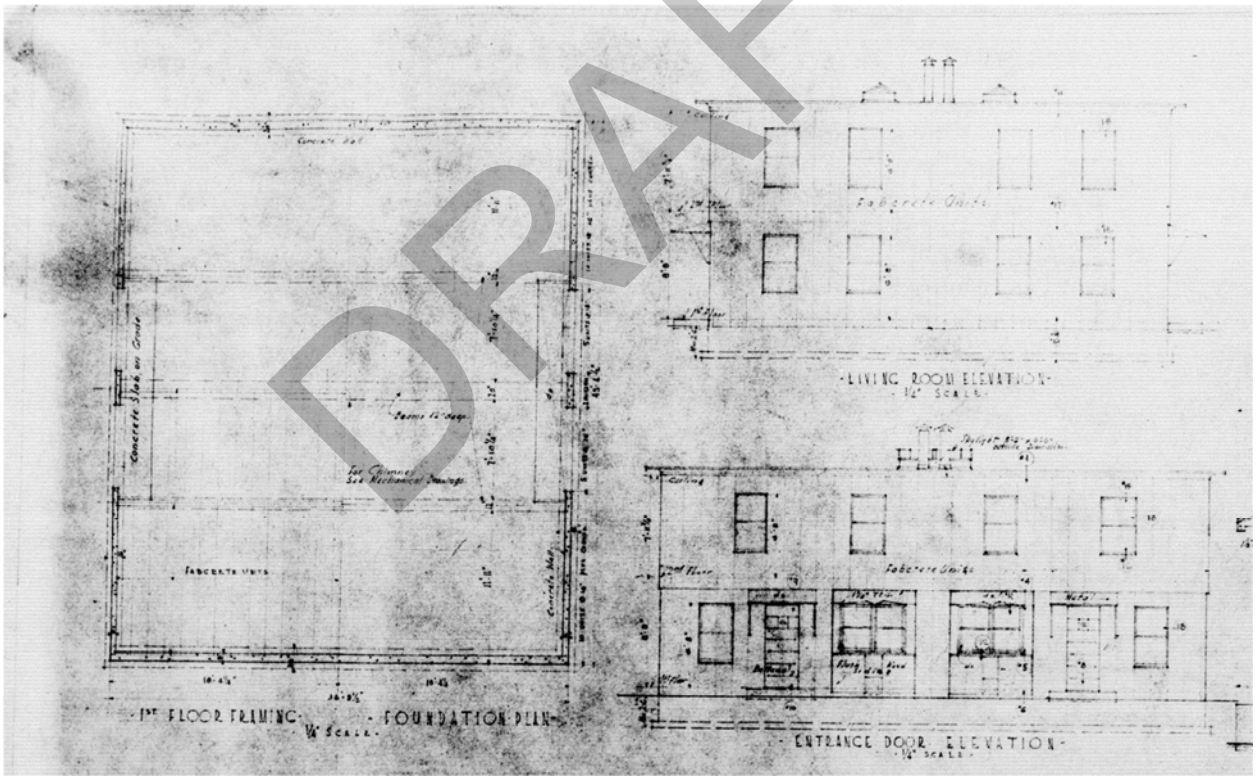

Figure 27: Final Elevation and Plans Selected by USHA October 10, 1941 Lanham Act Alexandria Defense Housing Project VA. 44133 (National Archives at College Park, Maryland)

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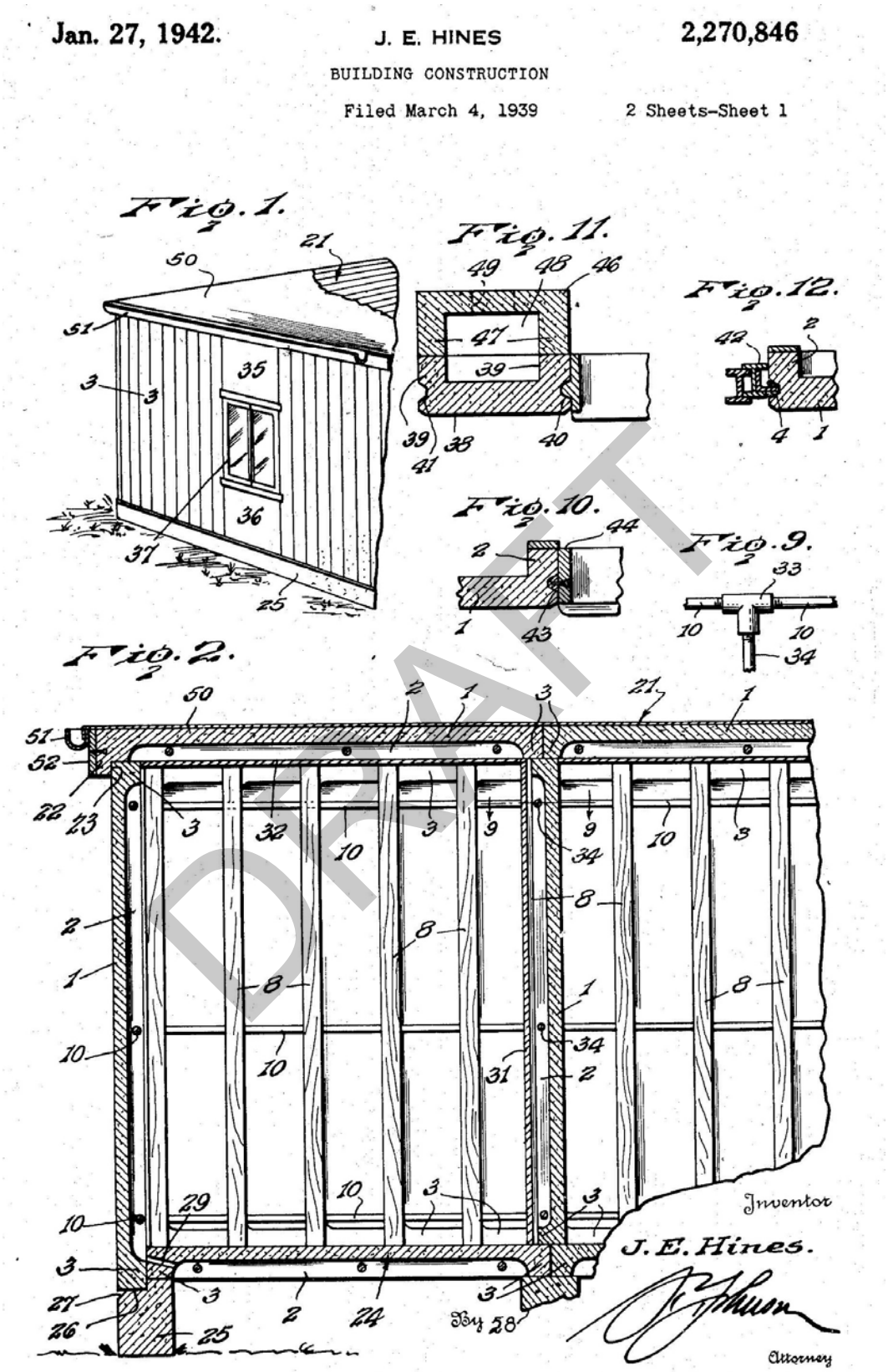

Figure 28: Precast Concrete Structural System of Ramsey Homes (Hines 1942)

Post World War II

After the war, the triangles and curves of Art Deco and Art Moderne finally gave way to rectilinear 90-degree angles, large plate glass windows, patios, and balconies, which helped to blur interiors and exteriors in higher end examples of the International Style, which became the favored vernacular for mid- and high-rise buildings in the 1950s and 1960s, over 30 years after the MoMA exhibition. Representing the most significant and largest cluster of International Style single-family residences, the Hollin Hills Historic District in Fairfax County, Virginia, was designed by Charles M. Goodman and developed between 1949 and 1971. Notably, Goodman did not begin Hollin Hills until eight years after Smith designed Ramsey Homes and Kastner & Hibben designed Cameron Valley. Though the temporary housing and trailer camps of the war left a negative impression on the general public, the widespread and sometimes successful wartime use of prefabrication, experimental material, and minimal ornamentation may have influenced the tastes of local buyers and therefore the willingness of developers to experiment beyond revival styles. Goodman himself was already a renowned architect and planner and unlike Smith had a "strong conviction that the traditional and widely accepted Colonial Revival-style house had no place in the twentieth century" (Trieschmann 2013).

Smith's use of Modernism was apparently brief. After the war, he was instrumental in the growing historic preservation movement, joining the Old and Historic Alexandria Board of Architectural Review (OHAD) in its first year in 1946 and becoming a charter member, board member, and keeper of the records of the Historic Alexandria Foundation (HAF) in 1947. According to the website of the City of Alexandria, the OHAD is the third oldest historic district in the nation and "was originally established to control development along the George Washington Memorial Parkway as it passed through the City as Washington Street and to protect the City's colonial heritage", a concern of Delos Smith's lifelong work. He also served on the Old Town Civic Association Survey Committee (Carignan 1992). A member since 1920, Smith was made a Fellow of the American Institute of Architects in 1952 and a Member Emeritus in 1954 (AIA 2015). Among his last commissions, he served as the consulting architect on the Capitol Building Prayer Room.

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PROPERTY HISTORY

1730-1830: The Growth of Alexandria

The origins of Alexandria are traced to the establishment of a public tobacco warehouse at "Bel Haven," created by an Act of the Virginia Assembly in 1730. To "prevent frauds in his Majesties Customs" in the staple tobacco trade, the Virginia Assembly appointed Inspectors for the public tobacco warehouses to be located at waterfront ports in the various counties. Under one inspection, two tobacco warehouses were appointed in Prince William County, one at Quantico on Robert Brent's land, and another at Great Hunting Creek on Broadwater's land (Hening 1820:268). The warehouses were built by Scottish factors (in essence, a middleman between the farmers and the merchants) for the purpose of holding tobacco prior to shipment to England. As central points in the tobacco trade, the warehouses were the location where the ships docked and where deals were struck (Harrison 1987:405).

By an Act of the General Assembly in 1748, a town at the Hunting Creek warehouse on the Potomac River was established on 60 acres of land owned by Philip Alexander, John Alexander, and Hugh West, both to benefit trade and navigation and to be to the advantage of the "frontier inhabitants." The 60 acres of land were directed to be taken above the mouth of Great Hunting Creek and laid out by the surveyor to the first branch above the warehouses and extend down the meanders of the Potomac to Middle Point [Jones Point]. The lots of the town were directed to be laid out along streets "not exceeding half an acre of ground in each lot setting apart portions of land for a market place and public landing, to be sold by public sale or auction, the proceeds of which were to be paid to Philip Alexander, John Alexander and Hugh West." Purchasers of each lot were required to erect one house of brick, stone, or wood, "well framed," with a brick or stone chimney, in the dimensions of 20 feet square, "or proportionably thereto" if the purchaser had two contiguous lots (Winfree 1971:443-446). A survey of the town of Alexandria shows the streets were laid in a grid pattern which was subdivided into blocks with four half-acre lots to a block.

By 1770, the town of Alexandria was the largest town on the Potomac River and, by the 1770s; it had developed into an important center for maritime trade, particularly in the flour trade with Europe and the Caribbean. By 1775, there were "20 major mercantile firms in Alexandria, 12 of which were involved in the transshipment of wheat" (Smith and Miller 1989:14). The success of the town led to several expansions of the boundaries in the late 18th century.

In 1785-86, the town of Alexandria expanded to include the study area. The new streets within the expanded area were named for Revolutionary War heroes including Greene, Lafayette, Jefferson, Patrick Henry, Washington and Wythe (Crowl 2002:124). The street grid in the expanded area was an extension of the original 1749 town grid, consisting of blocks containing two acres of ground which were frequently purchased by speculators. The sparsely-developed street grid of the late 18th century study area vicinity became the site of homes for wealthy businessmen of Alexandria as well as market gardens which supplied fruits and vegetables for the use of the town.

As the economy transitioned from one based on tobacco to other products, the population in Alexandria increased, as people moved into the town from outlying western areas to work as merchants, hotel proprietors, and cooks in local restaurants. Over the last decade of the 18th

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century, the population almost doubled compared to earlier decades, increasing from 2,746 in 1790 to 4,971 by 1800 (MacKay 1995:55). During the 1790s, due in part to turmoil in Europe associated with the French Revolution and the beginning of the Napoleonic Wars, Alexandria prospered as a major port for the exportation of American wheat. In 1791, the total value of the town's exports was $381,000, and four years later it had grown to $948,000 (MacKay 1995:55). From 1800 to 1820, Alexandria was fourth behind Baltimore, Philadelphia, and New York in wheat exports. With the shift from the tobacco economy to the wheat economy, occurring around the time Alexandria was ceded to the District of Columbia, enslaved laborers who were no longer needed on the outlying plantations were sold or hired out to businesses in Alexandria; many were manumitted and migrated to the City (Bloomburg 1988:62).

As the population increased in the District and in Alexandria, small enclaves formed where free African Americans established their own communities. One such community, bounded by West, Cameron, North Columbus and Montgomery Streets, was known as Uptown and became the largest of Alexandria's ten historical African-American communities. Although some free African Americans made their homes in Uptown prior to the Civil War, the settlement greatly expanded after the war with the influx of newly freed African Americans (Bloomburg 1988:73).

Ca. 1834-1861: Market Garden

George Blish (occasionally referred to in deeds as George Bloach) is listed in Alexandria tax records as the occupant of the eastern half of the square bounded by Wythe, Alfred, Pendleton, and Patrick Streets by 1834, the year that the western half of the square which includes the study area consisted of two vacant parcels credited to Frances Swann and Samuel Snowden (Gurganus 2013). In 1836, David Appich sold the eastern portion of the block to George Blish, where he was already residing and being taxed (Alexandria Deed Book X2:108). The deed from Appich explains that Blish, as a foreign-born non-citizen prior to 1836, was not able to own property in Alexandria and had an agreement with Appich to hold the property until Blish could legally purchase it. Also in 1836, Frances Swann sold the western half of the block including the study area to Blish, as well as the block immediately to the north (Alexandria Deed Book W2:238; 239). George Blish resided on and maintained ownership of the block until 1849.

The tax records appear to be somewhat at odds with the recorded deeds for the property, as the tax records prior to 1836 list Swann and Snowden as proprietors of separate lots in the western half of the block, and Edgar Snowden, presumably an heir of the Samuel Snowden listed in 1834-35, continues to be taxed for a lot on the block until 1840, when George Blish is at last taxed for the entire square including his dwelling. Snowden's presence on the tax record for the block may reflect a lease from Swann, but there is no mention of the persistence of such an agreement in the deed from Swann to Blish, and Snowden appears as a proprietor and not a tenant of his lot. In any case, according to deed records, George Blish owned the entire block bounded by Wythe, Alfred, Pendleton, and Patrick Streets by 1834 and according to tax records controlled the block by 1840, residing in a dwelling fronting on Alfred Street.

Details from city tax records for the Square that included the project area between the years 1834 and 1848 are shown on Table 1. Personal property tax records for George Blish indicate that he was taxed for one titheable (himself) from 1834-1844; in 1845, he was responsible for two

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titheables, and for three in 1846-47, before returning to a single titheable in 1848. Blish was also taxed for two slaves every year between 1834 and 1849 except 1837, when he is taxed for one slave, and 1845, when he is taxed for three. Blish also owned varying numbers of horses and cows during his ownership of the property, as well as carts/drays.

Table 1: Tax Records for Property Owners on the Square, 1834-1848

Tax Year	Individual Taxed	Property Description/Value	Titheables	Slaves	Horses	Cows	Carts/ Drays
1834	George Blish	House and ½ Square $1300	1	2	1	5	1
1834	Francis Swann	½ Square less 80-feet $400					
1834	Samuel Snowden	Est. 80-feet $100					
1835	George Blish	House and ½ Square $1300	1	2	1	5	1
1835	Francis Swann	½ Square less 80-feet $400					
1835	Samuel Snowden	Est. 80-feet $100					
1836	George Blish	House and Lot 4/5 Square $1200	1	2	1	8	1
1836	E. Snowden	Est. 80-feet $100					
1837	George Blish	House and Lot 4/5 Square $1200	1	2	1	7	1
1837	Edgar Snowden	Small Lot Patrick $100					
1838	George Blish	House and Lot $1700	1	2	1	7	1
1838	Edgar Snowden	Lot Patrick $100					
1839	George Blish	House and Lot $1700	1	2	2	4	1
1839	Edgar Snowden	Lot Patrick $100					
1840	George Blish	House and Square $1800	1	2	2	4	2
1841	George Blish	House and Square $1800	1	2	2	4	2
1842	George Blish	House and Square $1800	1	2	2	4	2
1843	George Blish	House and Square $1800	1	2	2	4	2
1844	George Blish	House and Square $1800	1	2	3	4	2
1845	George Blish	House and Square $1800	2	3	3	3	2
1846	George Blish	House and Square $1800	3	2	2	2	2
1847	George Blish	House and Square $1700	2	2	2	2	2
1848	George Blish	House and Square $1500	1	2	2	2	2

According to the 1850 census, which for the first time provided the names of all members of a household as well as specific information regarding occupation and place of birth, George Blish (age 50) and his wife Teresa (age 33) were German-born. Blish's occupation is given as "Farmer &Gardener," as is that of his son William (age 20) who resided in the household, and was Virginia-born. Other members of the household included Mary Blish (age 17), Andrew Blish (age 14), and George Blish (age 2), all of whom were likely born at the Blish residence on Alfred Street.

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The tax records of the preceding years indicating that Blish owned horses, cows, and a cart or carts, as well as his ownership of at least two blocks of land at the outskirts of Alexandria, strongly suggest that Blish utilized his property including the study area as a market or truck garden that supplied the fruit and vegetable needs of the City of Alexandria. Although Blish sold the block including the study area in 1849, the 1850 census suggests that he continued in this occupation nearby on a different property. It is notable that every occupation listed on the same census page as Blish was "Farmer" or more commonly "Farmer & Gardener," indicating that the neighborhood in which Blish lived in that year was dominated by similar market garden enterprises. It is likely that Blish sold his property including the study area and moved further from the city center to resume his profession as mid-century transportation enhancements including the Alexandria Canal and railroads increased prosperity and the demand for housing.

George Blish sold the property to Henry Daingerfield in 1849 (Alexandria Deed Book K3:276). Henry Daingerfield was one of the wealthiest men in Alexandria at the mid-point of the 19th century; he was a merchant who owned significant portions of the waterfront as well as numerous other properties in and around the city, and served as president or board member of many companies or organizations including that of the Alexandria Canal and the Orange and Alexandria Railroad (Miller 1989).

Daingerfield did not personally occupy the lots that included the study area, as he resided at the corner of Prince and Columbus Streets in what is now known as the Swann-Daingerfield House. The purchase of the block was likely a real estate investment intended to take advantage of the increased demand for housing in Alexandria.

Details from city tax records for the Square that included the project area between the years 1849 and 1854 are shown on Table 2. Tax records indicate that in 1849, Daingerfield leased the block including the study area to Aaron Knight, and in 1850-51, to John Foster. Thereafter, the property increased drastically in value from $1600 in value in 1851 to $2800 in 1852, in which year numerous tenants are recorded on the property. This increase in population on the property concurrent with the rise in value indicates that additional housing was constructed on the block; by 1854, when tax records indicate the presence of four houses on the block and give a value of $5000 for the property. There is no indication in the tax records of the location of the dwellings within the block.

Daingerfield's purchase of the property appears to have ended the era of dedicated market gardening on the block by 1852. However, the presence of only four dwellings on the block suggests that one or more of the residents may have continued the practice in a reduced capacity, as a significant amount of ground would still have been available for horticulture. The tenant Michael McSherry was taxed for a horse, cows, and a dray/cart beginning in 1853 which suggests McSherry may have continued the cultivation of a portion of the block for the local market.

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Table 2: Tax Records for Henry Daingerfield and Tenants on the Square, 1849-1862

Tax Year	Tenant	Property Description/Value	Titheables	Slaves	Horses	Cows	Carts/ Drays
1849	Aaron Knight	House and Square $1500					
1850	John Foster	House and Square $1500	2	2			
1851	John Foster	House and Square $1600	1	2			
1852	Mary Ann Silick	House and Square $2800		2			
	Lawrence McVerry		1	2			
	Peter McVerry		1				
	Michael McSherry		1	2			
	Peter McCann		1				
	James Gole[?]		1				
	John McCann		1				
	Barney McCann		1				
	John Burns		1				
	Richard McSherry		1				
	Patrick Bannon		1	2			
1853	John Dela Hunt	House and Square $3000	1	1			
	Patrick McConaway		1	1			
	Tie McConaway		1				
	John Ashford		1	2			
	Michael McSherry		1	2	1	1	1
	John Burnes		1				
	Barney McCann		1				
	James McFarlane		1				
	Francis McSherry		1				
	Owen Rice		1	1			
	John Quinn		1	1			
	John McCann		1				
1854	John Bl[ish]	4 Houses 1 Square $5000	1	2			
	Michael McSherry		1	2	1	2	1
	John Dellahunt		1	1			
	A. Henry		1				
	John Ashford		1	2			

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1861-1865: Battery H of the Pennsylvania Independent Light Artillery

At the onset of the Civil War, the Union army occupied Alexandria due to its proximity to Washington, D.C. and its importance as a sea-land transportation hub, which could be utilized to transport men, equipment, and supplies for the prosecution of the war. During the occupation of the city, much of the regular commerce that had characterized Alexandria before the war faltered as Southern loyalists fled the town and their properties were commandeered for the Union war effort. The United States Office of the Quartermaster General (USQM) took over the waterfront and many homes and buildings in the city were occupied by soldiers either temporarily staged in the town awaiting deployment, or more permanently garrisoned as part of the quartermaster corps or manning the system of forts that defended the city.

Details from city tax records for the Square that included the project area between the years 1861 and 1866 are shown on Table 3. Daingerfield was taxed for the square throughout the war years; however, the valuation of the property decreased significantly between 1861 and 1865. During the Civil War, Alexandria tax records ceased recording details regarding the number of dwellings on the block bounded by Wythe, Alfred, Pendleton, and Patrick Streets, possibly due to the presence of Union military buildings, detailed below.

Table 3: Tax Records for Henry Daingerfield, 1861-1866

Tax Year	Tenant	Property Description/Value
1861	Tenants not listed	4 Houses 1 Square $3000
1862	Tenants not listed	4 Houses 1 Square $2500
1863	Tenants not listed	1 Square $2500
1864	Tenants not listed	1 Square $2500
1865	Tenants not listed	1 Square $2000
1866	Tenants not listed	1 Square $2000

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The city block that included the study area was commandeered by the Union army to host the headquarters, barracks, and hospital facility of Battery H of the Pennsylvania Independent Light Artillery. The unit was formed in 1862 in Pittsburgh with John I. Nevin as captain, and was sent to Hagerstown, Maryland for two months before removing to Camp Barry, an artillery depot and training camp in Washington, DC. The battery spent its entire span manning the defenses of the District, moving from Camp Barry to garrison Alexandria from March 1863 until the end of the war in 1865 (American Civil War Archive 2016).

In a communique dated October 14, 1864, J. H. Taylor, Chief of Staff and Assistant Adjutant-General, Department of Washington, 22nd Army Corps, informed Major-General Augur that he had “authorized General Slough [the military governor of Alexandria, Virginia] to arm with rifles the surplus men of Battery H, Independent Pennsylvania Artillery, and use them as train guards” (United States War Department 1893:366). Train guard duty consisted of protecting military

supply wagon trains from the depredations of guerilla attacks or cavalry raids of the sort frequently employed by Colonel John Mosby in Northern Virginia. Battery H suffered no men injured or killed in combat during the war. Of the seven men the unit lost to disease, Private August Mentre died in Alexandria on August 2, 1863. The other six unfortunate men succumbed in Pittsburgh, Hagerstown, and Camp Barry.

Maps of all property and buildings in Alexandria utilized by the army were made by the USQM. The USQM map of the block bounded by Wythe, Alfred, Pendleton, and Patrick (Figure 29) indicates that the frame buildings depicted were constructed in 1863 for the use of Battery H by the quartermaster corps, and include a two story headquarters building on Patrick Street with single story wings on the north, south, and west and a large veranda on the east elevation, two 20 x 60 foot barracks buildings, a kitchen, a blacksmith, a large stable fronting on Alfred Street, a small hospital building on Pendleton, and a building marked "Sutlers, Private" in the southwestern quadrant of the block. A vegetable garden and landscaping surround the headquarters building and the space between the barracks, and several "sinks," or privies, are located at the edges of the block.

The hospital building centrally located along Pendleton Street is of relatively small size. This hospital was most likely a post hospital that specifically served the men of Battery H who were too injured or ill for duty but not in dire enough straits to be sent to one of the several general hospitals in Alexandria or Washington; this hospital would have been under the direct control of the commanding military officer of the battery and not part of the military hospital organization, which was headed by the Surgeon General (Lawrence et. al. 2015). Given the apparently healthy condition of Battery H during its sojourn in Alexandria, the hospital may have been little-used unless it was pressed into general service during periods of widespread sickness in the Alexandria garrisons or after the wounded from battles in other theatres of the war were transported to the city. The map indicates "hospital tents" to the north of the hospital building, which may illustrate an expandable capacity for the facility.

Hospital tents typically had elevated wooden floors with trenches around the base to drain water from beneath and around the tent (Wally Owen personal communication 2015; Geier and Potter 2000:151). This arrangement allowed for good air circulation, which was considered essential by many surgeons of the time who believed that infection and disease was spread by bad air and noxious odors (Geier and Potter 2000:151). The hospital building shown on the USQM map was likely used as offices or storage and patients were treated and convalesced in the ventilated tents. During the winter, the tents may have been heated by small heating stoves, or possibly by a Crimean oven. A Crimean oven consisted of a firebox in a pit outside of the tent, which was connected to a trench running through the tent or series of tents and was vented through an external chimney at the far end; the radiant heat from the hot air flowing through the trench, roofed with metal or stone slabs, warmed the tents while admitting little smoke. A Crimean oven was documented archaeologically at 206 North Quaker Lane in Alexandria, Virginia (Jirikowic et al. 2004).

A building used by a sutler was also noted on the USQM map. A sutler was a civilian merchant licensed by the U.S. military to supply goods and services to soldiers, filling the role later occupied by canteens and exchanges. Although providing much-needed goods to soldiers, sutlers

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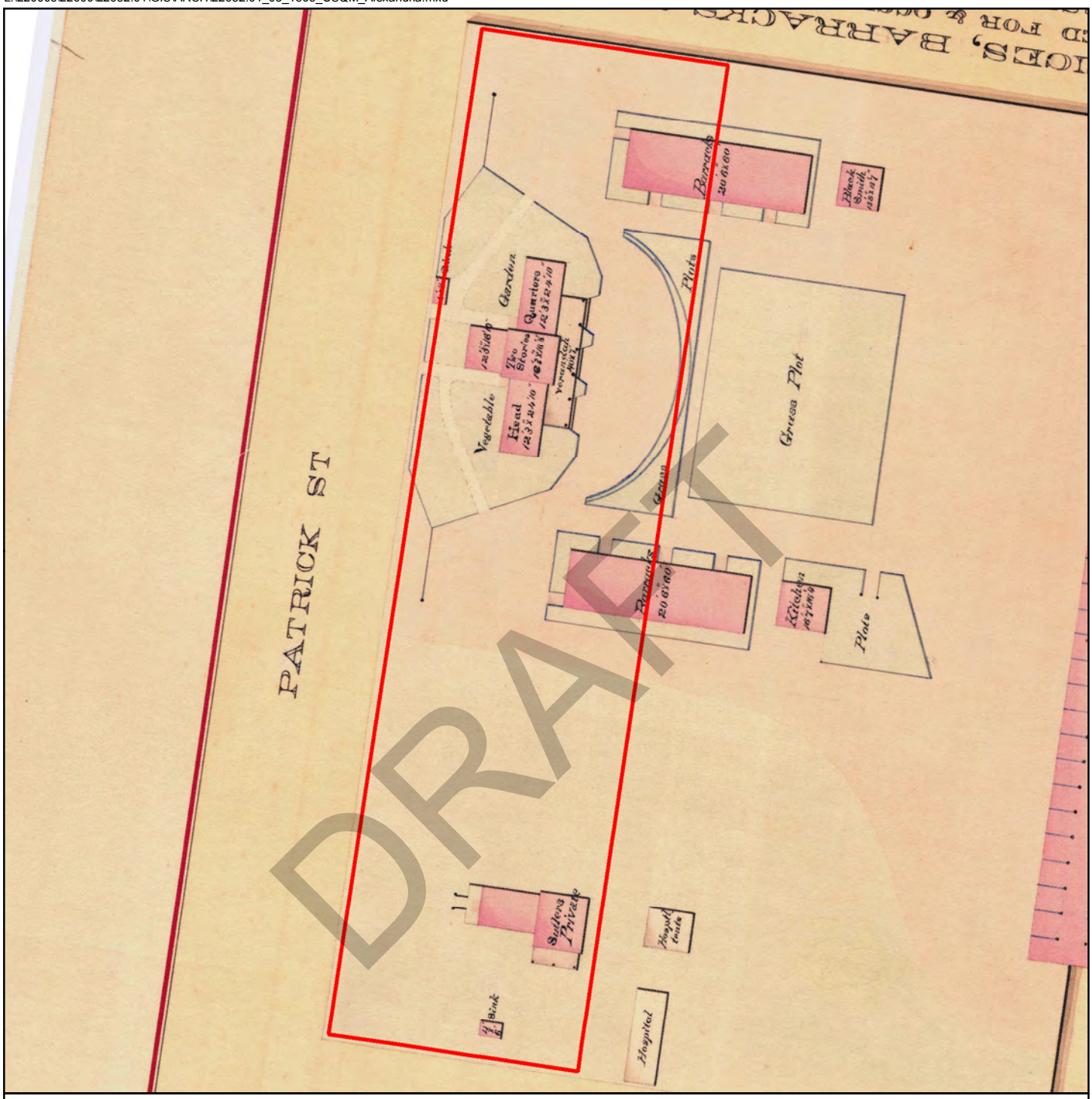

Approximate Location of Study Area

Map Source: U.S. Quartermaster Corps. 1865. "Wharfs Storehouses Etc."
Series: Post and Reservation Maps, compiled 1820 – 1905;
Record Group 92: Records of the Office of the Quartermaster General, 1774 – 1985;
National Archives and Records Administration (NARA).

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Figure 29
U.S. Quartermaster Corps Map 1865

had a checkered reputation, were looked upon unfavorably by the U.S. Quartermaster General and other highly-placed individuals responsible for keeping the military supplied, and were the subject of frequent changes in regulations regarding the manner of their selection and licensing, what articles they could sell, and how they were allowed to transport and distribute their goods.

Each regiment or discreet detached unit of the army, such as Battery H of the Pennsylvania Light Artillery, was allowed one licensed sutler to serve the needs of the soldiery. Although by regulations in effect early in the war sutler's licenses were ostensibly to be given out by regimental administrative councils, it appears that many were appointed by higher division officers, by state governors or other officials for political favors, or in some cases licenses were purchased outright (Spear 1970:121-122). A unit's sutler did not enjoy a position in the military chain of command, but was an official civilian contractor attached to the unit which provided them an effective monopoly on the trade of the unit's soldiers, as well as direct access to the paymaster to collect money due on account when pay was distributed (Spear 1970:130; Lord 1969:34-35).

Sutlers sold an astonishing array of goods to soldiers. Although the army issued uniform clothing, basic mess kits, and a ration of food, these items inevitably wore out, got misplaced or stolen, or proved inadequate. Goods officially approved for sale by sutlers included uniforms and other clothing; toiletries; games and other amusements such as playing cards, checker boards, etc.; pens, ink, and stationery; books and newspapers; mending kits; dishes and cookware; knives; blankets; candles; and matches (Lord 1969:39).

Food and condiments, however, as well as tobacco, represented the majority of a typical sutler's sales (Billings 1887:224). The military supplied a daily ration of hard tack and preserved pork or beef, all of which was frequently of sub-standard quality. The fresh and canned fruits and vegetables, pickles, flour, bread, cheese, butter, sardines, mustard, and other foodstuffs sold by sutlers were a welcome and necessary addition to the soldier's diet. Even the infamous sutler's pies, "moist and indigestible below, tough and indestructible above, with untold horrors within" (Billings 1887:227), were often attractive to the soldier whose other choices were to eat the inedible army rations or go hungry (Lord 1969:41).

Most sutlers did not restrict themselves to selling items on the list of government-approved merchandise, and nearly anything that soldiers (and frequently the local civilian population) would buy might be found in a sutler's stock, from pistols to bibles to hoop skirts (Spear 1970:127). Sutlers also frequently engaged in the sale of contraband, particularly alcohol, often with the approval or even the assistance of unit officers (Spear 1970:128-129, 132).

The sutler's shop not only supplied the soldiers material needs, but also frequently became the social center of camp life where soldiers gathered to eat, gossip, or otherwise pass the time (Spear 1970:123). However, despite the central role sutlers played in making a soldier's life bearable, they were frequently maligned by soldiers of all ranks. Sutlers enjoyed a monopoly within their assigned unit, and went to considerable trouble and risk to keep their shops supplied in time of war; even the least greedy of them charged high prices, and for many, their sole concern in their enterprise was to make as much profit as possible. The result was exorbitant prices sometimes reaching five or ten times the going rate for items in demand (Spear 1970:129-130), and the men who were forced to patronize them resented this daylight robbery. Particularly in the camps of

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armies in the field, sutlers' tents were frequently subject to pilfering and raids by soldiers pushed beyond endurance by the high prices, and any misfortune that befell a sutler or his stock was generally felt to be well-deserved (Spear 1970:136-138).

The sutler for Battery H may have differed in some measure from the typical sutler recorded in Civil War history due to his location at a stationary post in an urban area which would have denied him his monopoly, making him more subject to market forces than the roving sutlers who followed units in the field. However, his location adjacent to the barracks and headquarters of the unit likely placed him in a favorable and convenient position to sell to the troops and his shop likely served as a gathering place for soldiers of the battery. The identity of the sutler remains unknown, as they were not featured on unit muster lists and the Battery H sutler does not appear on a list of known sutlers compiled by Francis A. Lord (1969).

If the USQM map is an accurate record of the buildings on the property, then it appears likely that George Blish's former dwelling on Alfred Street and several of the multiple dwellings built by Daingerfield were demolished prior to the military construction. It is likely that the dwelling in use by the sutler was a remnant of the pre-war buildings, and possible that the two story core of the headquarters building is a second re-purposed pre-war building. The other two of the four pre-war buildings likely stood in the northeast and southeast quarters of the block and appear to be no longer extant as of 1865.

A second map depicting the locations of buildings within the block was produced in 1864 (Figure 30). Buildings are shown in the approximate locations of the headquarters, sutler, and stable illustrated in the USQM map, but the footprints depicted do not match those on the military map, in particular the lack of wings on the building in the headquarters location, and the appearance of two conjoined buildings along Alfred Street in the location of the stables. This 1864 plan map may simply be inaccurate or lack the necessary resolution of detail; it is also possible that the map depicts the pre-war configuration of buildings on the block. The sparse density of buildings in this quarter of Alexandria is clearly depicted on this map, suggesting that Daingerfield may have been one of relatively few to attempt increased residential development of the area prior to the outbreak of the war.

A lithograph presenting a birds-eye view of 1863 Alexandria depicts the vicinity of the study area near the right margin of the illustration (Figure 31). However, the street grid underwent some distortion in this area during the crafting of the work and the exact location of the study area is not discernible. The general vicinity is shown to be nearly empty of buildings. One apparent dwelling and outbuilding may represent the sutler building or perhaps the hospital building and sink, and a second long building possibly represents the stable depicted on the USQM map, but the headquarters and barracks buildings are conspicuously absent. The lithograph may therefore have been produced prior to those buildings' construction. Alternatively, accuracy at the outskirts of the city may not have been a major concern of the artist, as evidenced by the distorted street grid in the study area's vicinity.

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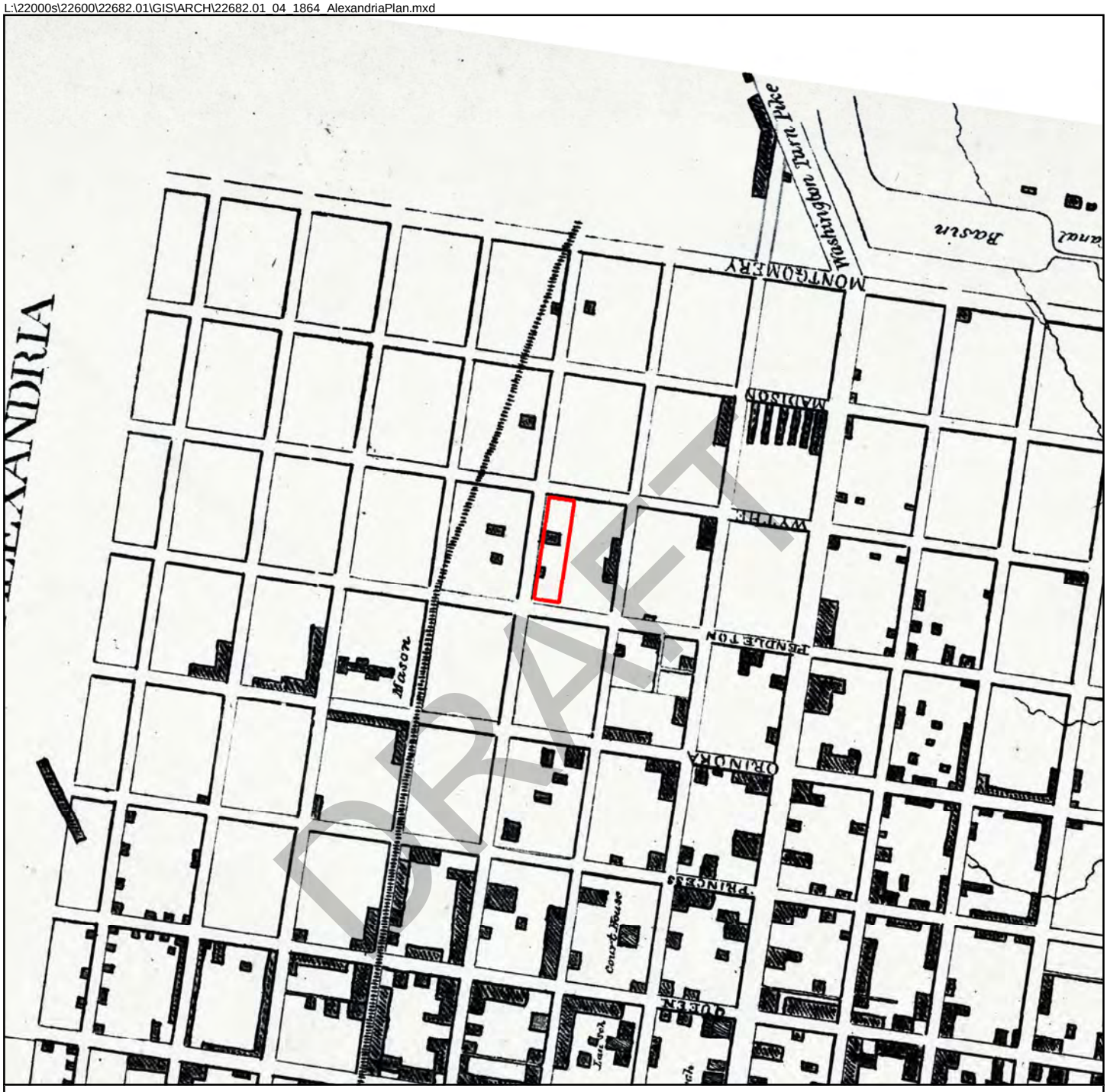

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Approximate Location of Project Area

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Map Source: Image from NOAA's Office of Coast Survey Historical Map & Chart Collection: http://historicalcharts.noaa.gov

Figure 30
1864 Plan of Alexandria, Virginia

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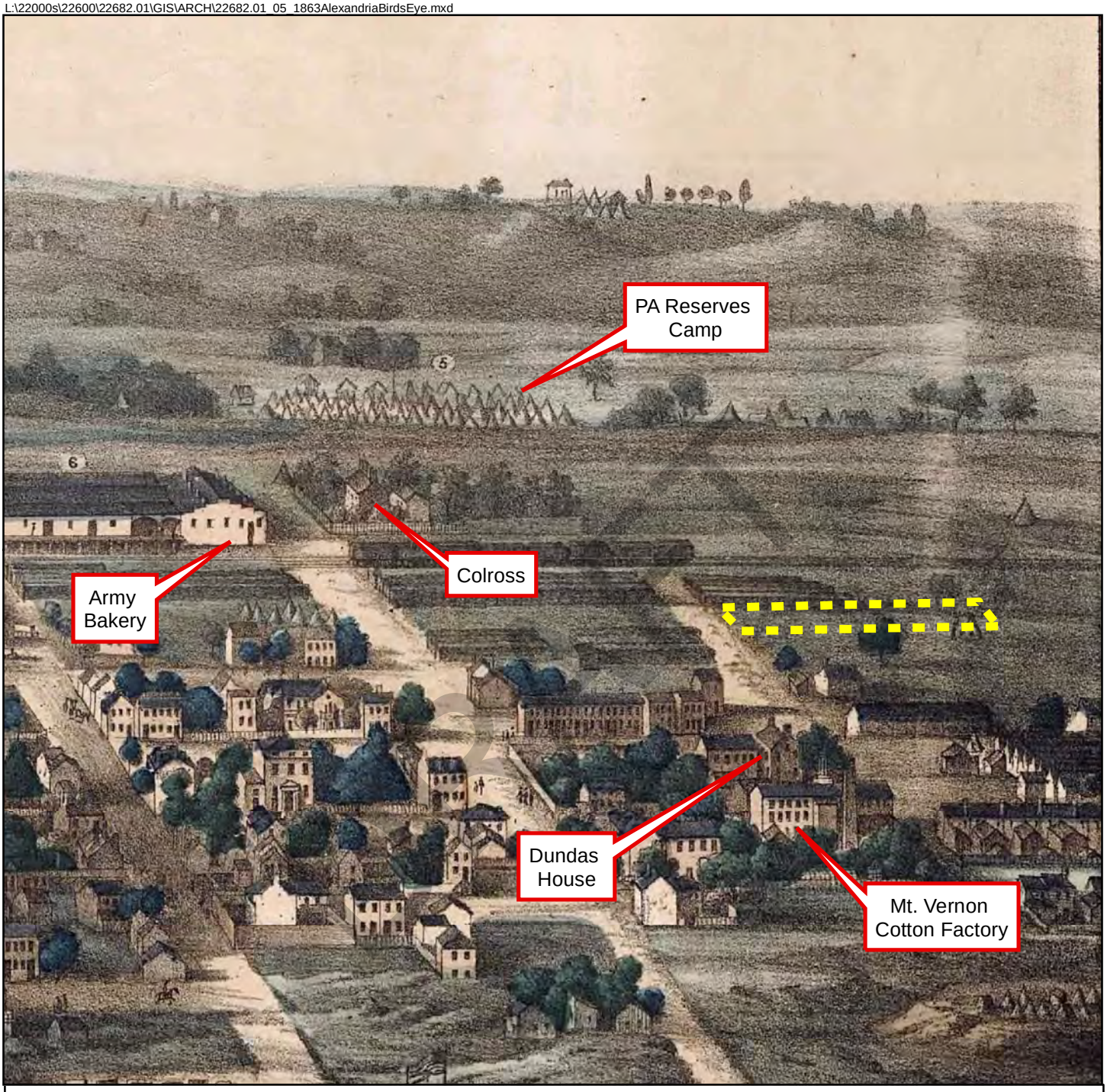

Approximate Location of Project Area

Map Source: "Birds eye view of Alexandria, Va." Magnus, Charles. 1863. G3884.A3A3 1863 .M32 Vault : CW 522.3. Library of Congress Geography and Map Division Washington, D.C.

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Not to Scale

Figure 31
1863 Birds Eye View of Alexandria

A Civil War-era photograph taken from Shuter's Hill to the southwest of the study area shows the same view as that depicted in Figure 19 from nearly the opposite direction (Figure 32). The same landmarks are visible in both views. Once again, the location of the study area is problematic in the photograph, as the Colross mansion is interposed between the viewer and the study area. The presence and appearance of buildings in the study area are not discernible in the photograph. However, the photograph clearly illustrates the largely undeveloped character of this portion of Alexandria in the mid-19th century.

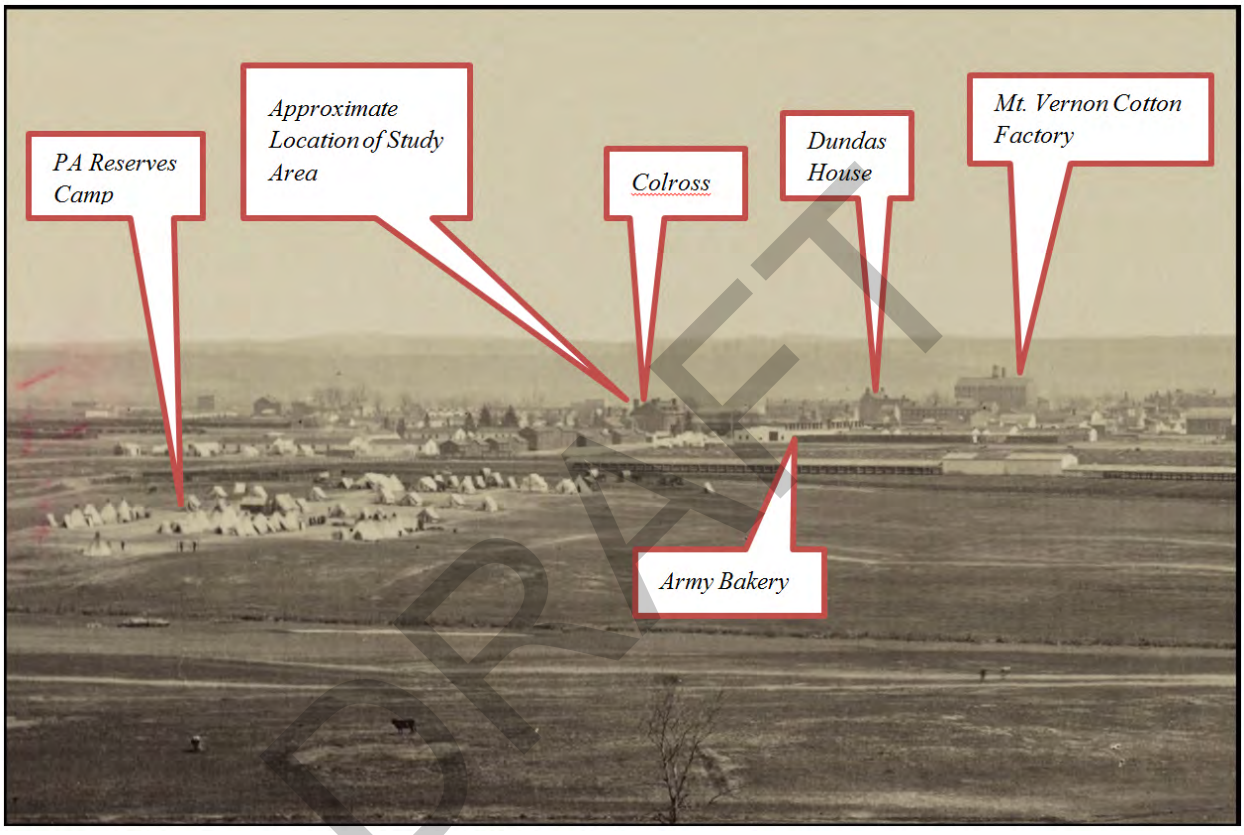

Figure 32: Camp of 44th New York Infantry near Alexandria Between 1861 and 1865, Showing Environs of the Project Area (Library of Congress Prints and Photographs Division)

A Phase I archeological investigation conducted by city archeologists in 1991 recorded site 44AX0160 within the project area. Although few details about this investigation are available, the site form and notes on file at Alexandria Archaeology record that the investigation located various areas of the barracks, as well as a possible associated cobble path.

1865-1914: Tenement Housing

After the close of the Civil War, the USQM returned control of the study property to Henry Daingerfield, who died intestate the following year. His properties were divided among his widow and children according to the decree of the chancery court in 1870. The block including the study area was part of the properties received by daughter Ellen C. Daingerfield in the 1870 chancery decree, however the property continued to be associated with Henry Daingerfield's estate in tax records until 1873.

Details from city tax records for the square that included the project area between the years 1867 and 1872, when it was identified as a part of the Henry Daingerfield Estate, are shown on Table 4. Details from selected tax records for the square between the years 1873 and 1890, when owned by Ellen C. Daingerfield are shown on Table 5.

Table 4: Tax Records:Henry Daingerfield Estate 1867-1872

Tax Year	Tenant	Property Description/Value
1867	Tenants not listed	1 Square $2000
1868	[Edgar Snowden Sr.– possible tenant]	1 Square $2000
1870	Tenants not listed	1 Square $2000
1872	Tenants not listed	1 Square $2000

Table 5: Tax Records:Ellen C. Daingerfield 1873-1890 (Selected Years)

Tax Year	Tenant	Property Description/Value
1873	Tenants not listed	1 Square $2000
1878	Tenants not listed	1 Square $2000
1880	[Frank Penn, Henry A. Parsons, Edward Houck.– possible tenants]	House and Square $1300
1890	[Samuel Lloyd.– possible tenant]	House and Square $1500

Until after 1870, the development of the Parker Gray neighborhood surrounding the project site was not unified or coherent; the area had yet to develop the cohesive character that is seen in later times (Necciai and Drumond 2007:7-2). Approximately 80-90% of the platted land north of Princess Street contained no permanent buildings until at least a decade after the Civil War, although some individual blocks contained a large residence or a few smaller ones (Necciai and Drumond 2007:7-2). The area was characterized by a "patchwork of different kinds of buildings and structures with open land at the center and smaller residential enclaves at the fringes" (Necciai

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and Drumond 2007:7-4). In addition to the dearth of residential development, few institutional buildings were present prior to 1880.

Hopkins' 1877 map (Figure 33) identifies the study area as a part of Henry Daingerfield's estate, and depicts four buildings on the block, two of which stand at least partially within the study area. The buildings shown appear to correspond to the Battery H headquarters and the building associated with a sutler on the USQM map. Interestingly, the headquarters building is shown as lying partly within Wythe Street. If accurate, this location speaks to the largely undeveloped nature of the study area vicinity in the mid-19th century. Henry Daingerfield owned the squares on either side of this section of Wythe Street, which likely was a proposed or paper street in the 1850s when Daingerfield built several dwellings on his property. Daingerfield may have ignored the Wythe Street right-of-way when building on his property, possibly with the formal or informal blessing of the city. It is also possible that Daingerfield respected the official lot boundaries and the military construction of 1863 chose to intrude onto the Wythe Street right-of-way, either through constructing the north wing onto an existing two-story dwelling fronting on Wythe Street, or through the construction of the entirety of the offending headquarters building.

In 1880, tax records indicate that one house stood on the square that includes the study area, but the specific location of the dwelling is unknown. Ellen Daingerfield apparently continued to rent out the dwelling on the square throughout the 1880s. In 1892, Daingerfield sold the square including the study area as well as the square immediately to the north to Noble Lindsey, Samuel Fisher, and George Fisher. Noble Lindsey was vested with an undivided 50% interest in the property, while the Fishers each received 25% (Alexandria Deed Book 27:240). In 1895, the Fishers deeded their interest in the block containing the study area to Lindsey in exchange for Lindsey's share of the block to the north, making Lyndsey the sole owner of the study area (Alexandria Deed Book 33:514; 515).

Several blocks of the Uptown/Parker-Gray Historic District in the vicinity of the project site were owned by locally well-known citizens by 1880. The owners of some of the larger tracts included Samuel Miller, Thomas W. Swann, John W. Green, George and John Seaton, William C. Yeaton, William Gray, Mrs. Jacobs and the Smith family. George Seaton was a master builder and one of the wealthiest African Americans in the city. It is thought that some of the owners may have purchased the properties as speculators and the larger lots were subdivided and smaller houses built on the Yeaton, Jacobs and Green properties (Necciai and Drumond 2007:7-3). By the late 1880s, residential development was occurring in the vicinity of the project area. Land developer A.J. Wedderburn erected 17 houses on North Alfred between Pendleton and Wythe (WP 1888:4).

By the early 20th century, a number of the city's largest employers were located on the periphery of the Parker-Gray District. These included Portner's Brewery, which by 1880, covered an entire city block. Three glass factories were built in Alexandria between 1890 and World War I; these operated until about 1918. By 1912, Smoot Lumber relocated to the fringe of Parker-Gray after a disastrous fire at their plant near the waterfront (Necciai and Drumond 2007:8-335).

During this period, housing in the vicinity of the project area appears to have been somewhat integrated as new residents were attracted by employment opportunities, for both blacks and

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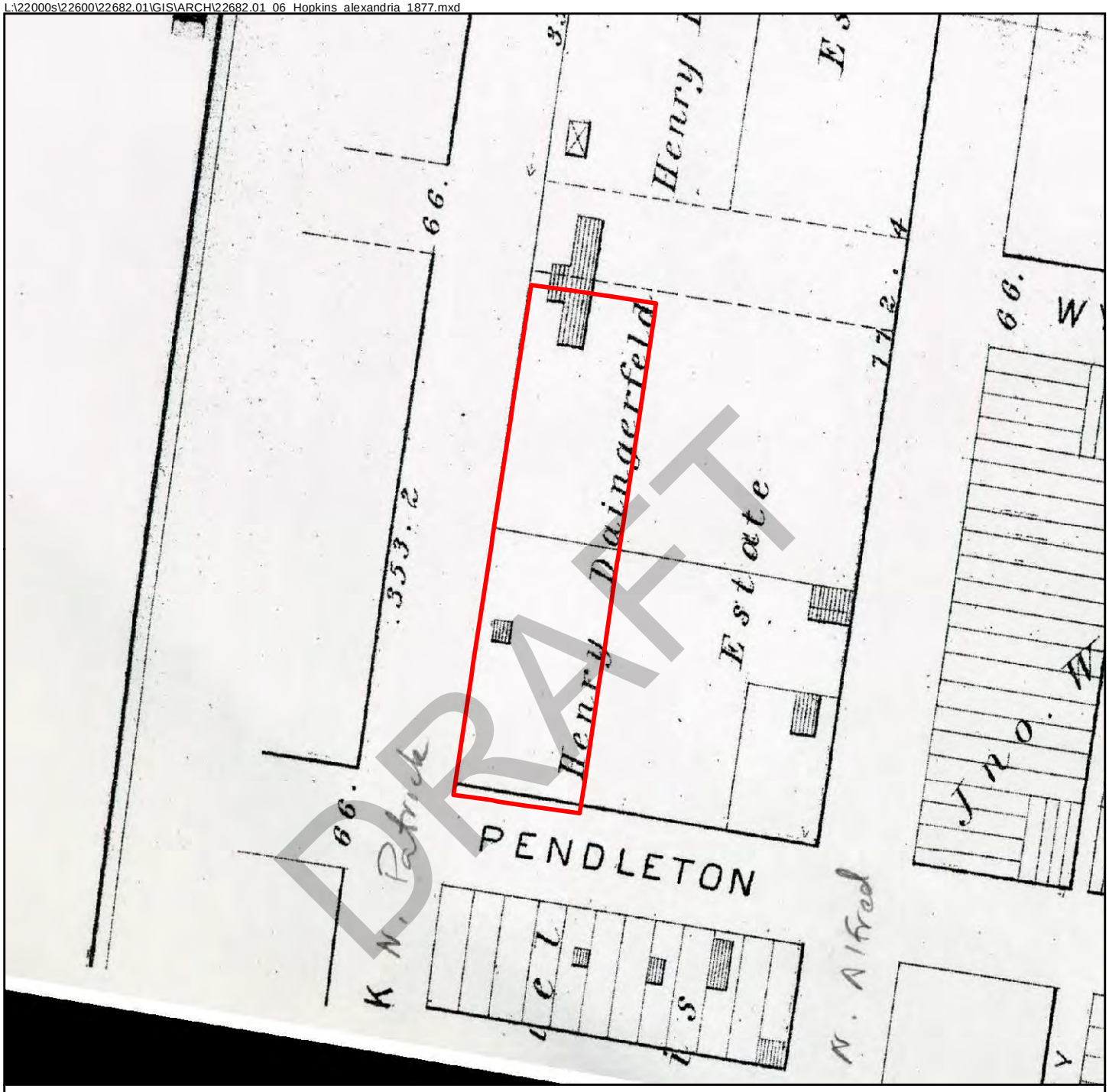

Approximate Location of Project Area

Map Source: "Alexandria County, Virginia". From G.M.Hopkins' Atlas of Fifteen Miles Around Washington, D.C., 1877". Library of Congress, Geography and Mapping Department.

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Figure 33
1877 Hopkins Map
Alexandria, Virginia

whites, associated with the railroad and industrial development. Northwest of the project area, the Belle Pre Bottle Company and the Alexandria Glass Company were located on Madison and Montgomery Streets, and warehouses stood along the railroad and North Fayette Street. A number of individual houses were built in the area at this time. Many European immigrants located in the neighborhood, continuing a tradition that had been in place since the mid-19th century when approximately 60% of the residents along North Columbus and Alfred Streets, near their junction with Oronoco and Wythe Streets, were Irish immigrants. By the 1930s, the same area was home to a diverse population of African Americans and both recent and descendant German and Italian immigrants (Necciai and Drumond 2007:8-335).

Ca. 1914-1941: Vacant Rowhouse Lots

Noble Lyndsey maintained ownership of the study area until 1914, when a decree was issued in chancery during the settling of his estate to sell the block for cash. The property was sold to the Real Estate and Investment Corporation of Virginia for $5,500 (Alexandria Deed Book 63:553). The Real Estate and Investment Corporation in turn sold the property to Charles W. King in 1919 for $8,000 (Alexandria Deed Book 69:135). By 1921, the block was vacant (Figure 34). In 1923, Charles King sold the property to his grocery wholesale company, Chas. King & Son (Alexandria Deed Book 76:110). Also in that year, the block was surveyed for subdivision and soon thereafter lots were sold for development (Alexandria Deed Book 76:242). Although the eastern and central portions of the block were developed, the western third of the block comprising the study area was sold to four buyers who left it vacant (Figure 35).

The segregated Parker-Gray Elementary School was built in the project area vicinity in 1920 when Alexandria combined two schools built in 1868 into a new elementary school (Necciai and Drumond 2007:8-344). The new school was overcrowded and the African-American community provided the funds for both furnishings and books. Although built to serve the lower grades, some high school classes were offered at the facility. After the construction of the Parker-Gray Elementary School, the African-American population expanded and coalesced into several more segregated neighborhoods including the Hump and Colored Rosemont (Necciai and Drumond 2007:8-340). Ultimately, these neighborhoods coalesced into Uptown, which became an increasingly African-American focal point from the early 20th century into the 1960s. It was the single largest predominantly African-American residential section of the city during segregation and contained many African-American owned businesses and institutions.

1942-1945: The Lanham Act Alexandria Defense Housing Project VA-44133

By 1941, the United States Housing Authority (USHA), Nathan Strauss Administrator, under the Federal Works Agency (FWA), John M. Carmody Administrator, began to plan for the construction of permanent housing for African-American defense workers in the Uptown neighborhood. Then known as the Lanham Act Alexandria Defense Housing Project VA-44133, Ramsey Homes (or Ramsay as it was sometimes spelled) was developed and maintained in the following sequence:

1941 March 3, the Lanham Act Alexandria Defense Housing Project VA-44133 received Presidential or Administrative Approval.

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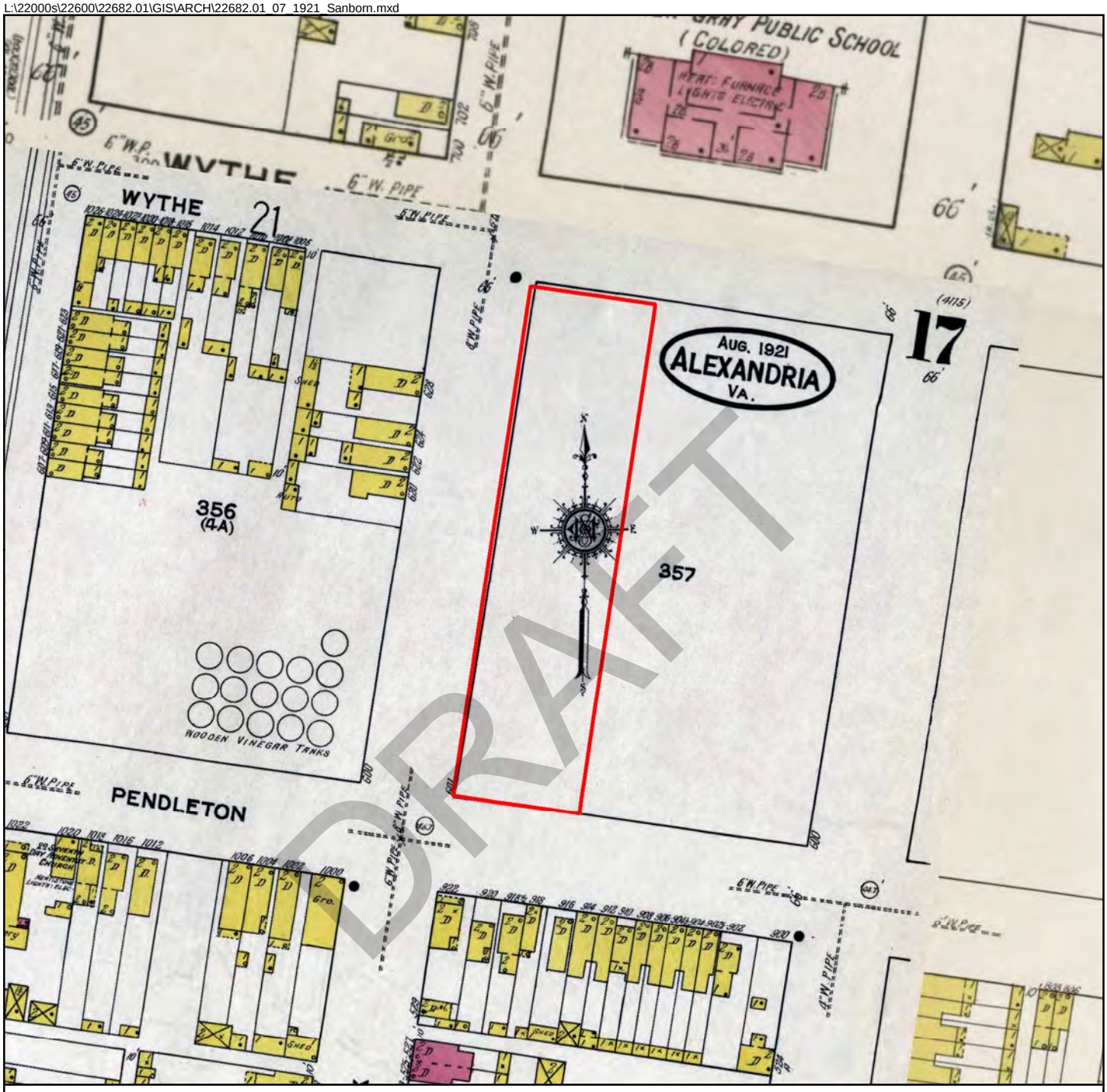

Approximate Location of Study Area

Map Source: "Sanborn Fire Insurance Map from Alexandria, Independent Cities, Virginia." Sanborn Map Company, August 1921. Sheet 17. Library of Congress Geography and Map Division Washington, D.C.

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Figure 34
1921 Sanborn Fire Insurance Map of Alexandria

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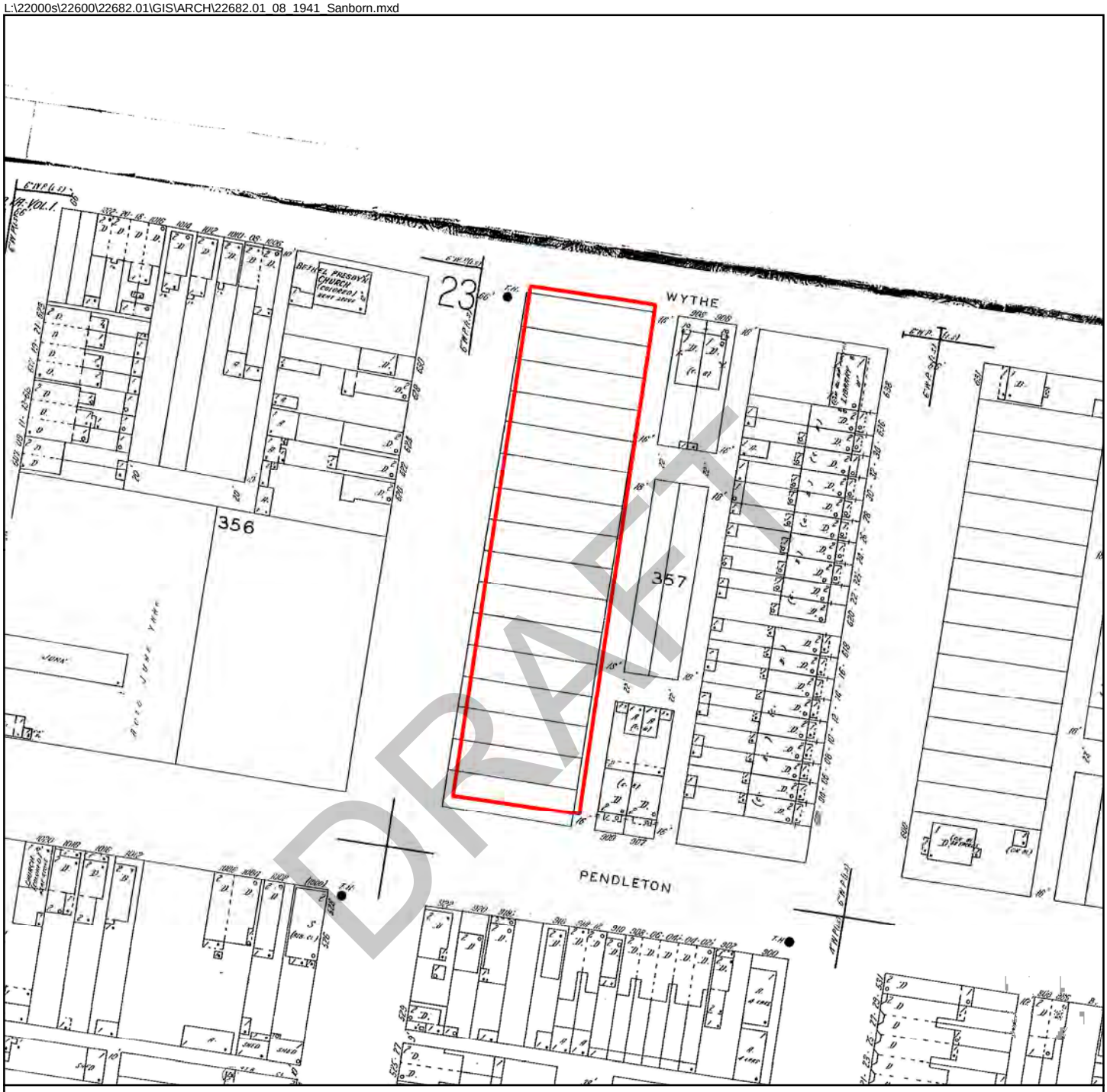

Approximate Location of Study Area

Map Source: "Sanborn Fire Insurance Map from Alexandria, Independent Cities, Virginia." Sanborn Map Company, 1941. Sheet 21. Library of Congress Geography and Map Division Washington, D.C.

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Figure 35
1941 Sanborn Fire Insurance Map of Alexandria

1941 April 16, Edward S. Holland, Jr., Certified Land Surveyor, 624 King Street, Alexandria, completed a "Property Line Map" for the Housing Authority of the City of Alexandria (the predecessor of ARHA established by law in 1939). This plan showed 16 lots on the south side of Patrick Street between Pendleton and Wythe. Labeled 19-34, each measured 22 ft. wide and 87 ft. deep. Parcel 1 included Lot 19, Parcel 20 included Lot 20, Parcel 3 included Lots 21-33, and Parcel 4 included Lot 34.

1941 July 8, the United States Federal Government purchased four vacant parcels from Edward E. Lawler, R. S. Reynolds, Marguerite F. Graham, and Julian M. Dove (Alexandria Deed Book 176:7).

1941 July 15, Smith, Werner, and Billings Architects, 220 King Street, Alexandria, Virginia; Robert K. Thulman, Mechanical Engineer; and Associated Engineers Inc. Site Engineers completed the first set of plans for the Ramsay Homes (Figure 24 and Figure 25). The firm's architects were Delos H. Smith, FAIA, junior partner J. M. Billings, and engineer Sheldon Werner. The original plan submitted was for three buildings. Building A and C were to contain four units, including a living room and kitchen on the first floor and two bedrooms and a bathroom on the second floor. The architects described Building B as flats and included one three-room unit, three four-room units, and three five-room units. Each were to have shiplap siding, brick accents, and large cupolas. The landscape plan called for plantings, alley parking, patios, hexagonal clothes lines, a play area, and a spray basin.

1941 October 10, Smith, Werner, and Billings Architects submitted a second design, which was used by USHA (Figure 26 and Figure 27). The second option prescribed three four-unit Modernist foursquares and a three-unit L-shaped building with more economical materials such as "Fabcrete", a pre-cast unit of cementitious material that did not require interior framework for support and to which composition board, laths, and other material could be attached to achieve desired finishes. Joseph E. Hines of the Fabcrete Corporation, Richmond, Virginia applied for its patent on March 4, 1939, Serial No. 259,885. Utility lines and electrical wiring were outlined. Exterior elevations show coal chutes were once located on the north and south walls and interior plans note the plenums for "coal fired" heating and plumbing. The plan shows the elimination of large cupolas in favor of small skylights over each bathroom as they were located in the core of the buildings and could not have windows. It included parallel parking in the alley, hexagonal clothes lines labeled "yard clothes dryers", and a simple paved play area within the L of the triplex. Sheet 8 contains a "List of Plants", including 4 Trees of Heaven, 3 Honey Locust trees, 18 Black Locust trees, 15 Van Houtte Spirea flowering shrubs, 15 Arrow Wood flowering shrubs, 57 Regals Privet hedge plants, 85 Wash. Thorn hedge plants, 8 Japanese Creeper vines, 30 Evergreen Bittersweet vines, and 8 English Ivy vines. Historic aerials show mature trees between each building and that the landscape design was generally followed (RG 196, Records of the Public Housing Administration, Architectural and Engineering Plans, the National Archives at College Park Maryland).

1941 November 22, the construction contract was awarded (NHA 1942a).

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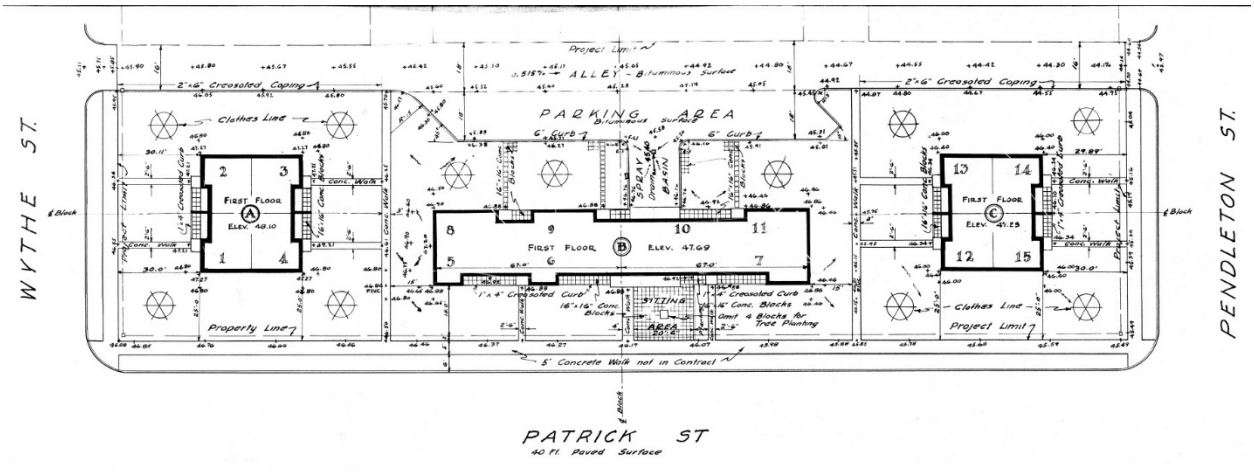

Figure 36: First Draft Site Plan July 7, 1941 Lanham Act Alexandria Defense Housing Project VA. 44133 (Smith 1941a)

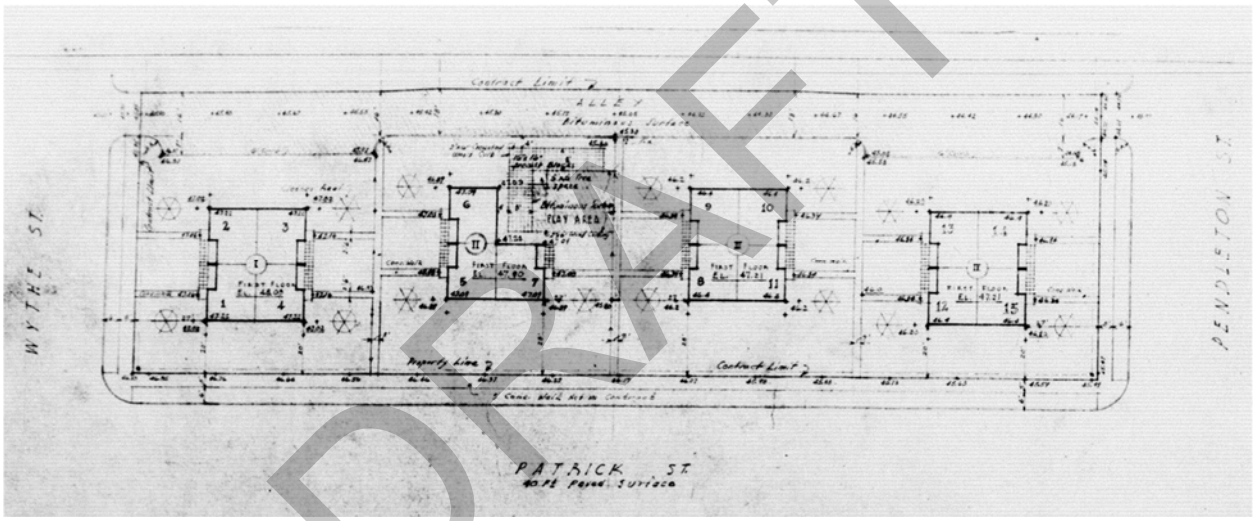

Figure 37: Final Site Plan Selected by USHA October 10, 1941 Lanham Act Alexandria Defense Housing Project VA. 44133 (National Archives at College Park, Maryland)

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1942 February 24, the U.S. Housing Authority was moved under the National Housing Authority of FWA and became the Federal Public Housing Authority (PHA). The PHA published a directory, Report SD-102, containing information on all war housing, including "Ramsay Homes", and slum-clearance projects financed in whole or in part by Federal funds during 1942 (NHA 1942a).

1942 July 31, the Project was under construction and 95 percent complete with an estimated cost of $78,590 (NHA 1942a).

1942 September 18, the Project was under construction and 97 percent complete with an estimated cost of $79,940 (NHA 1942a).

1942 October 2, the Project was under construction and 99 percent complete with an estimated cost of $79,940 (NHA 1942a).

1942 October 30, the status of the Project had not changed (NHA 1942a).

1942 November 30, six units were occupied, eight units were available, and one unit was incomplete (NHA 1942a).

1946-Present: Alexandria Redevelopment and Housing Authority

1946 October 6, the *Washington Post* reported, "Three large war housing projects in Alexandria-elected at a cost of $2,712,000-are now up for sale." PHA gave the city the first chance to buy Chinquapin Village, Cameron Valley, and Ramsey Homes, all of which housed 2,000 people. While the PHA designated the buildings permanent, city officials contended that they were temporary, and the Mayor claimed the housing did not meet city building codes and were thus substandard.

1947, the Negro Yearbook contained a table of Permanent Public Housing Projects Making Provision for Negro Tenants as July 31, 1945, which included Ramsey Homes (Guzman et. al.). Alexandria City Directory listed the residents of the Ramsey Homes for the first time, including Carneal Coffee, USA (perhaps the Army); Cleveland B. Tivy, Clerk War Dept.; Will Daniels, barber; George W. Witherspoon, auto mechanic; and Charles E. Smith, janitor. All were noted as African American.

1951 July 26, PHA entered into a contract with the Alexandria Housing Authority for conveyance of low-rent housing "after the termination of the use of the project as defense housing during the Korean emergency" (United States 1956:48).

1953 April 30, the Alexandria Housing Authority became the Alexandria Redevelopment and Housing and purchased the Ramsey Homes from the PHA (Alexandria Deed Book 356:407).

1957-1964, historic black and white aerial imagery from these years show the specified play area next to the triplex, plantings, and buildings with flat roofs and skylights over the bathrooms (Figure 38).

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1959, ARHA noted that its 4,942 tenants, occupying 1,247 dwelling units across eight development projects including the Ramsey Homes, "...almost all came from dismal, substandard, or overcrowded quarters," were "generally happy in their surroundings" and had greatly benefitted from public housing (ARHA 1959:2). The Sanborn Fire Insurance Map from this year shows the buildings and notes the use of pre-cast concrete and flat roofs (Figure 39).

1979, aerial imagery shows that ARHA removed the skylights and constructed hipped roofs.

1995 August 15, Sorg and Associates prepared plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community (Figure 40 and Figure 41). The plan called for a Colonial Revival makeover, showing vinyl replacement windows with clip-on six-over-six muntins, the addition of inoperable aluminum shutters, and replacement metal paneled doors. The BAR approved the plans for exterior renovations with the stipulation that the doors and shutters be hunter green and that the faux muntins not be used, leaving the windows one-over-one. Stucco and brick were patched and repaired. The kitchens and bathrooms were renovated. Chain-linked fencing was replaced with metal picket fences and the paved play area removed and sodded with grass. The plan notes that English Ivy was to be removed from the property. Any other historic plant material left at that time was removed.

The current location and type of trees and fencing is different from the original (Figure 42). Shrubbery and plants around the buildings are nursery stock and likely added by residents.

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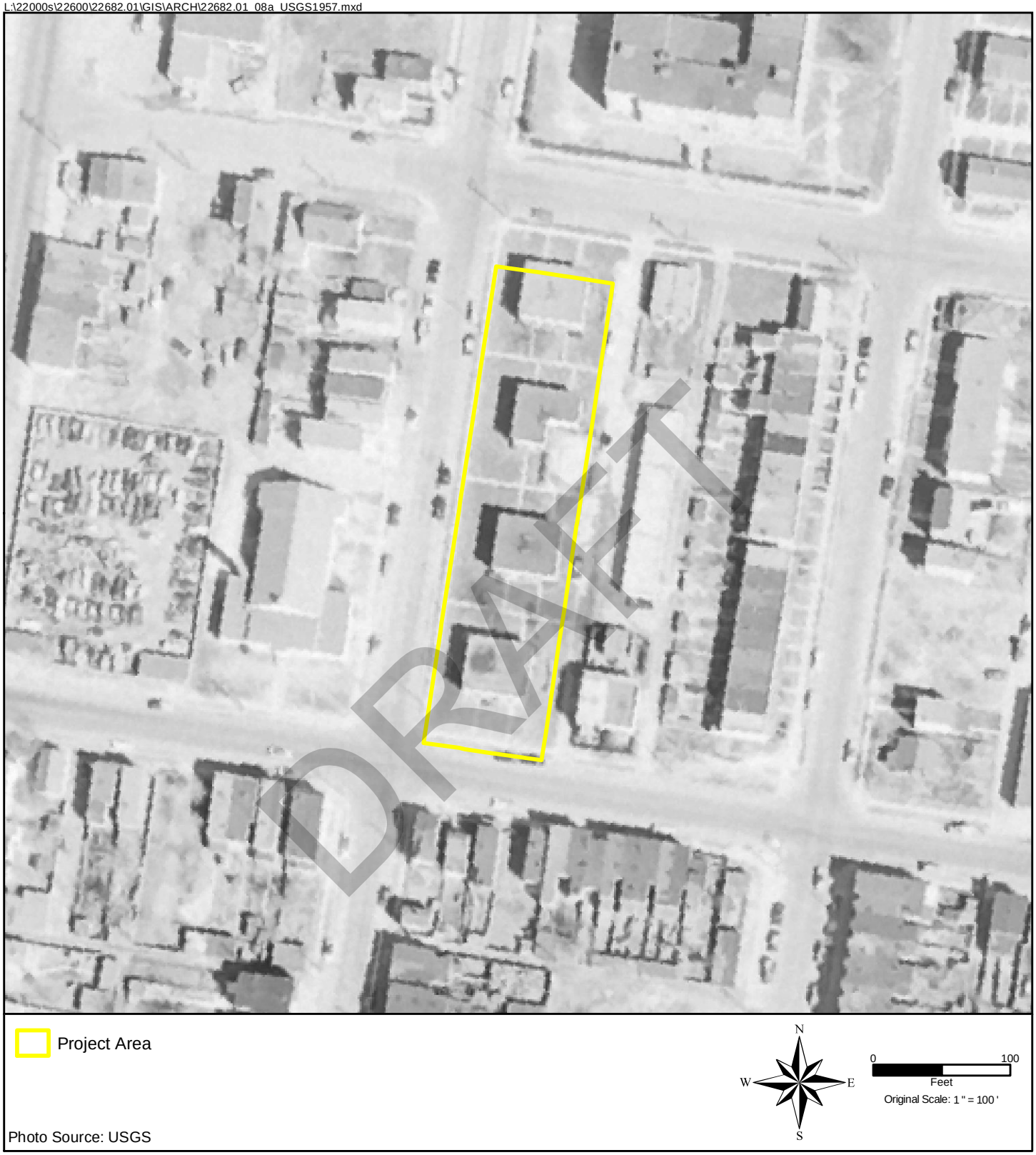

Figure 38
March 1957 Black and White Aerial Imagery of Alexandria

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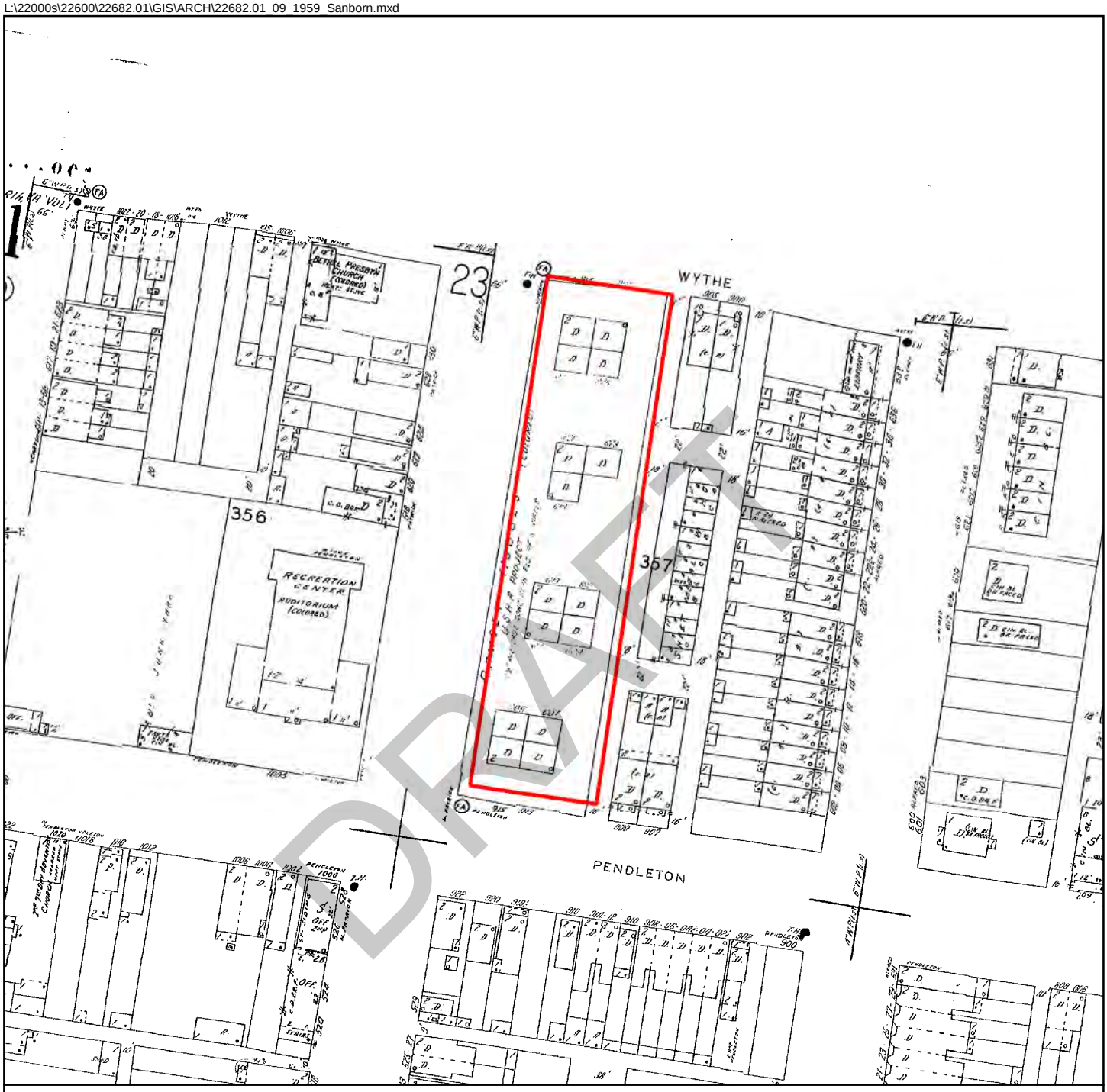

Approximate Location of Study Area

Map Source: "Sanborn Fire Insurance Map from Alexandria, Independent Cities, Virginia." Sanborn Map Company, July 1959. Sheet 21. Library of Congress Geography and Map Division Washington, D.C.

N
W E
S

0 100
Feet
Original Scale: 1 " = 100 '

Figure 39
1959 Sanborn Fire Insurance Map of Alexandria

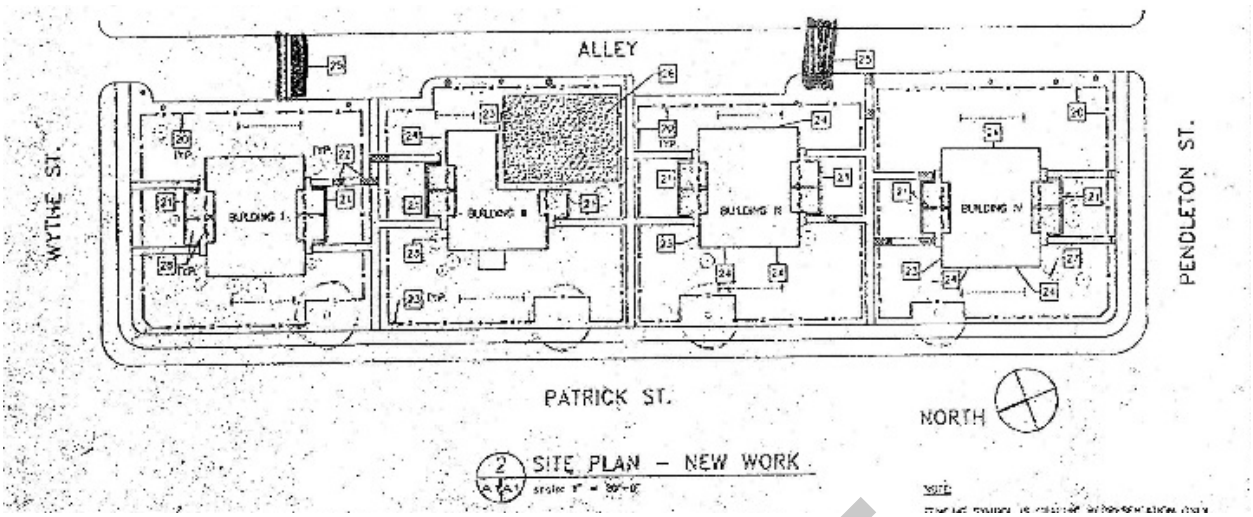

Figure 40: August 15, 1995 Plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community (ARHA)

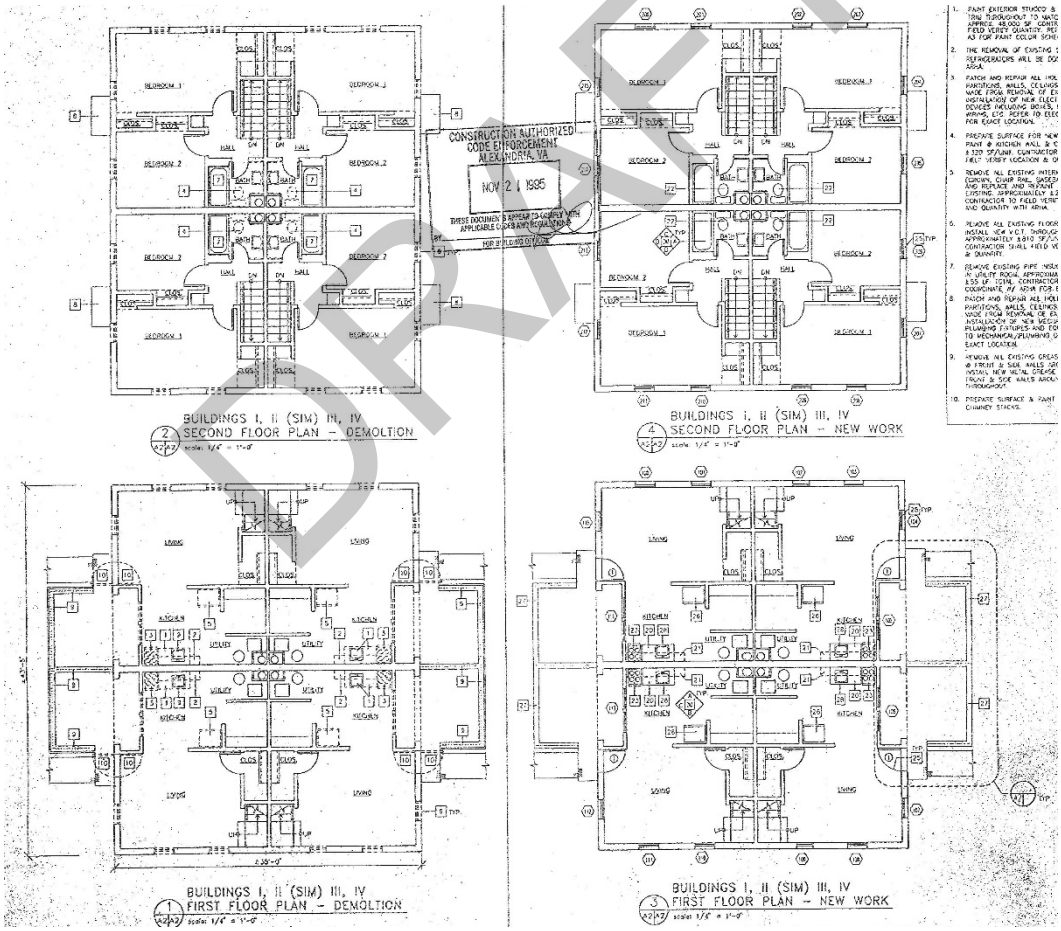

Figure 41: August 15, 1995 Plans for Interior, Exterior, and Site Improvements at VA 4-5, The Ramsey Community (ARHA)

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Figure 42
March 2013 Natural Color Aerial Imagery of Alexandria

PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

Previous Archeological Investigations

One previously recorded archeological site has been recorded at DHR within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. According to the DHR site record, the resource has not been evaluated for eligibility to the NRHP. Domestic artifacts dating to the 19th century and a cobble path were reported; few additional details regarding the previous investigations at the site were found.

Previous Architectural Investigations

Four buildings with 15 units (see Figure 2) were previously recorded as seven resources at DHR within the study area in 2006 in anticipation of nominating the "Uptown/Parker-Gray Historic District" (DHR No. 100-0133) to the VLR and NRHP. Building I contains 912-914 Wythe Street (DHR No. 100-0133-1328) and 625-627 Patrick Street (DHR No. 100-0133-0754). Building II contains 619, 621, and 623 Patrick Street (DHR No. 100-0133-0751). Building III contains 609-611 Patrick Street (DHR No. 100-0133-0747) and 613-615 Patrick Street (DHR No. 100-0133-0749). Building IV contains 605-607 Patrick Street (DHR No. 100-0133-0745) and 913-915 Pendleton Street (DHR No. 100-0133-0948). Each resource contributes to the VLR district listed in 2008 and the NRHP district listed in 2010. The buildings are also located within the locally zoned "Parker-Gray District". The Period of Significance for the NRHP district is ca. 1810 to 1959. The Period of Significance for the locally zoned district ends in the "early twentieth century" (roughly 1900 to early 1930s).

The Ramsey Homes are located in the northwestern quadrant of the 1797 street grid and occupy over one-third of a city block on the east side of North Patrick Street between Pendleton and Wythe Streets. The grass lawns are enclosed by a modern metal picket fence, which steps in around mature oak trees lining the Patrick Street sidewalk. Buildings are set back 10 to 35 feet from the right-of-ways and spaced around 40 feet apart. The block is surrounded by small row houses and town houses, local businesses, converted warehouses, and community buildings most of which have very little setback from the curb. The area is dense with two- and three-story buildings from a variety of periods. The landscape and architecture of Ramsey Homes are out of character and scale with other historic resources in the study area (Figure 33).

Buildings I (Figure 34), III (Figure 35), and IV (Figure 36) are identical two-story quadruplexes (45' x 43'6.5") with low-pitched hipped roofs. Building II is an L-plan two-story triplex (43'6" x 36'5") with a cross-hipped roof (Figure 37). The nearly square shape of three of the buildings and the replacement of flat roofs with hipped ones after 1964 altered their style from vernacular Modernist to vernacular Prairie style. Alterations made in 1995 introduced Colonial Revival elements with metal paneled doors, vinyl windows, and inoperable aluminum shutters (Figure 38 and Figure 39).

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Figure 43: Ramsey Homes, View to West from the Alfred Street Alley to North Patrick Street, Showing Difference in Scale between the Housing and Historic Homes

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Figure 44: Ramsey Homes, Building I

Figure 45: Ramsey Homes, Building III

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Figure 46: Ramsey Homes, Building IV

Figure 47: Ramsey Homes, Building II

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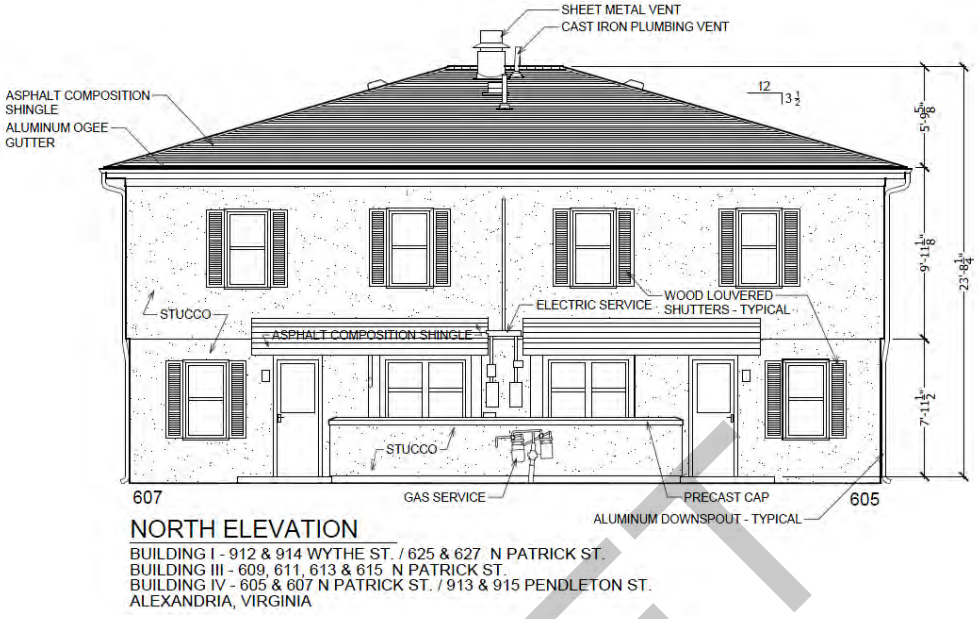

Figure 48: 2015 Historic American Building Survey Measured Drawings Prepared by Encore Sustainable Design for ARHA

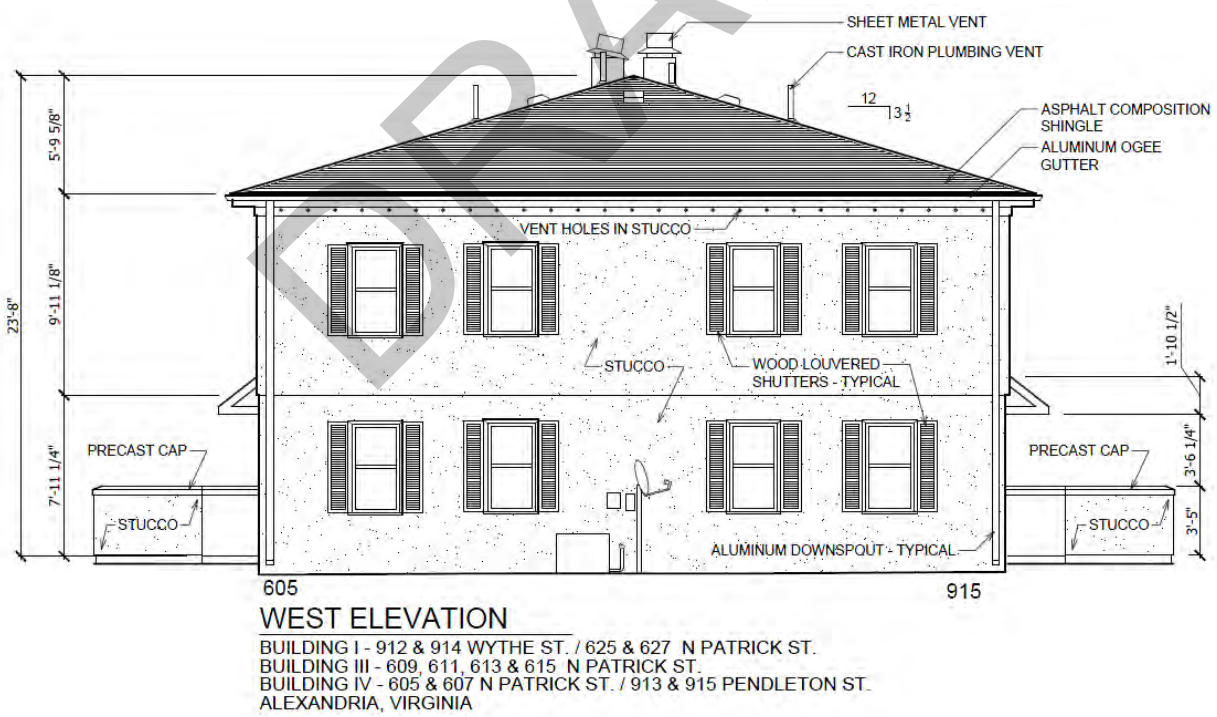

Figure 49: 2015 Historic American Building Survey Measured Drawings Prepared by Encore Sustainable Design for ARHA

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Each building consists of a poured concrete foundation and Fabcrete building units used to construct the floors, walls, and roofs. Textured paint or acrylic stucco, noted as “stucco” on Figures 38 and 39, covers the exterior. The roofing is either a continuous membrane or a bituminous asphalt product. The low-pitched hipped roofs are capped by metal flues at each center.

Entrances are inset and paired side-by-side such that each quadruplex has two facing north and two facing south. The triplex has one facing south and two facing north. Paneled metal doors are roughly centered on each unit. Paired one-over-one windows with brick aprons are situated next to the doors towards the interior dividing wall on the north and south elevations. Larger one-over-one windows are situated on the opposite side of the door towards the corner of each building. The elevations facing the east and west contain two one-over-one windows on each floor of each unit, for a total of eight symmetrically positioned windows. They are all vinyl replacement double-hung sashes flanked by decorative aluminum louvered shutters.

The interiors of the buildings are minimalistic with vinyl composition tile or carpet added by the tenants, painted walls and very simple trim. There is a small living room (17’7” x 11’7”) with a closet under the stairs and a kitchen (9’x 9’) with open utility closet on the first floor of each unit. Two small bedrooms (14’5 x 9’5 and 8’ x 10’”) and one full bath are located on the second floor. Fixtures throughout date to the 1990s. There is a gas heating unit and window-unit air conditioners.

In 1984, the “Parker-Gray District”, where the Ramsey Homes are located, was established and codified “to protect community health and safety and to promote the education, prosperity and general welfare of the public through the identification, preservation, and enhancement of buildings, structures, settings, features and ways of life which characterize this nineteenth and early twentieth century residential neighborhood” (Zoning Ordinance Article X. Sec. 10-200). Two years later, a Board of Architectural Review (BAR) was appointed to review applications for alterations to properties in the district.

In 2008 and 2010, the “Uptown/Parker-Gray Historic District”, which covered a larger area in Alexandria, was listed respectively to the VLR and the NRHP. The earliest example of public housing in the district, Ramsey Homes are listed as contributing in the areas of social history and architecture as "an example of the housing constructed with public funds, between 1940 and 1945, for defense workers during World War II" (Necciai and Drumond 2007). The Ramsey Homes may be determined individually eligible for listing based on Criteria A of the NRHP due to its association with African-American defense workers, the history of affordable housing, and the history of wartime housing, discussed in the historic context above, despite alterations

It does not appear to be individually eligible under Criterion B because there is no evidence of association with significant people. Efforts to identify significant historic personages that lived at the Ramsey Homes public housing site have not been successful. Although some local sources reported that baseball legend Jackie Robinson once lived in Ramsey Homes, a representative of the Jackie Robinson Foundation confirmed that Robinson was never a resident of the site (Mirielle

Stephen personal communication 2015). Basketball pioneer Earl Lloyd; sometimes referred to as the “Jackie Robinson of Basketball” was a native of Alexandria, Virginia but did not reside at Ramsey Homes (Alexandria Gazette Packet 2015).

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Mentioned in a 1942 issue of *Architectural Record*, the homes were designed in the Modernist style by Delos H. Smith, a prominent fellow of the AIA, who specialized in the Colonial Revival, and consist of early experimental precast concrete, "Fab-crete". Due to the forward-thinking design and materials, they may be found individually eligible under Criterion C, despite alterations including the addition of a hipped roof on top of the Modernist flat roofs after 1964 and the 1995 addition of Colonial Revival elements. These features are reversible and do not have an adverse effect on the core structure, setting, style, or landscape.

The property may be found eligible under Criterion D dependent upon future archeological investigations.

Other areas considered in determining eligibility are the evaluation of a property's integrity of location, design, setting, materials, workmanship, feeling, and association as related to its area of significance in architecture and period of significance. The buildings have lost integrity of design, setting, feeling, and association due to the alteration of style and landscape, which is integral to listing under Criterion C, but less so to listing under Criterion A, particularly in association with resources related to minority groups.

In early 2015, ARHA submitted an application to the BAR for a Permit to Demolish. In a memo dated April 22, 2015, city staff recommended demolition; however, the BAR voted to deny the request. ARHA appealed the decision, and on September 12, 2015, City Council overturned the BAR's decision, thereby granting the Permit to Demolish.

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ARCHEOLOGICAL ASSESSMENT

Based on the archival research and previous archeological research presented above, the following resources were present or are currently located within the Ramsey Homes parcel; an assessment of their potential archaeological signature is also addressed below.

18th Century Resources

The study area's vicinity was agricultural or waste land prior to its annexation by Alexandria in 1785, and was likely disturbed only by plowing. However, after annexation and a shift to market gardening in the vicinity, dwellings and outbuildings appeared on many squares in the vicinity. Although no buildings are known to have stood in the study area during the 18th century, a dwelling located on the eastern portion of the block may have been constructed during this time. This dwelling was located on a separate parcel from the study area, but it is possible that outbuildings or other structures stood within the study area during the 18th century. These would likely have been fairly ephemeral structures of post-in-ground or pier construction, remnants of which may persist in the subsoil of the study area.

Early to mid-19th Century Resources

Well into the 19th century, the only dwelling recorded in tax records on the square including the study area was located on the eastern side of the block fronting on Alfred Street. Between 1836

and 1849, the entirety of the block was owned by George Blish and utilized for a market garden, Blish resided in the Alfred Street house. Outbuildings and other structures similar to those discussed above are more likely to have been built within the study area during Blish's ownership as the entire block was consolidated under one owner, but there are no records that specifically indicate the presence or absence of buildings in the study area during this time.

Four dwellings were present on the block within a few years of Henry Daingerfield's purchase of the square in 1849; it is likely that two of these buildings stood within the study area, one each on the north and south halves of the block fronting on Patrick Street. At least some of Daingerfield's dwellings appear to have served as boarding houses given the number of individuals listed as resident on the property in tax records. Archeological remnants of these buildings would likely consist of the brick foundations or piers which supported typical dwellings of this period. Other features associated with the habitation of these dwellings, such as remnants of outbuildings including privies, may also be extant.

Civil War and Late 19th Century Resources

The headquarters, barracks, and post hospital of Battery H of the Pennsylvania Independent Light Artillery were constructed on the block in 1863; according to Civil War-era maps, portions of as many as six buildings stood within the study area:the unit headquarters, two barracks, two sinks/privies, and a building housing a sutler. It is unclear if the headquarters and sutler represent new construction by the military or incorporate the buildings constructed by Daingerfield in the 1850s. Buildings constructed by the military were typically post-in-ground frame structures; it seems likely that the barracks buildings within the study area would have been constructed in this manner. Archeological investigation of the property might reveal whether the headquarters and sutler buildings were new military construction or re-purposed existing structures based upon the remains of the building foundations. Other features associated with the Civil War occupation, including privies, refuse pits, and possibly terrain features and modifications such as landscaping around the headquarters and barracks may also be discernible through archeological excavation.

Following the Civil War, the heirs of Henry Daingerfield continued to lease the property to tenants, and the presence of a dwindling number of buildings on the square are recorded in tax records. It is likely that the buildings on the square were those present during the Civil War occupation, and the temporary nature of the military buildings contributed to the steadily decreasing number and value of buildings indicated in late 19th century tax records for the property. It is unclear when the final building came down, but it likely occurred in the 1890s or the first decade of the 20th century.

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20th Century Resources

The block was at best sparsely occupied by the turn of the 20th century, and completely devoid of buildings by 1921. The study area remained vacant until the extant Ramsey Homes defense housing project was constructed in 1942. Apart from the buildings themselves, significant archeological features associated with the occupants of the buildings are unlikely, as modern urban refuse disposal practices were in use by the time of the dwellings' construction.

Proposed Construction

This Documentary Study was initiated because the Board of Commissioners of ARHA determined that the property should be redeveloped to provide more units of affordable housing and meet goals within their 2012-2022 Strategic Plan, the Braddock East Master Plan (BEMP), and the City-adopted Housing Master Plan. The proposed units will be three stories high and occupy nearly the entire property with no setbacks. Details regarding potential depths of proposed disturbances are not presently available

Recommendations

The study area has a moderate to high probability of containing late 18th century – 20th century artifact deposits and archeological features that could potentially provide significant information about domestic development in the Parker-Gray Historic District within the City of Alexandria, Virginia. Additionally, one previously recorded archeological site has been mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. According to the DHR site record, the resource has not been evaluated for eligibility to the NRHP. As such, the study area is known to include cultural deposits associated with the historic Civil War-era military occupation of the city. A proposed Scope of Work for the archeological work is included as Appendix III, but must be approved by the City of Alexandria Archaeologist.

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APPENDIX I
Scope of Work for Documentary Study

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Scope of Work for a Documentary Study
Ramsey Homes
Located at Pendleton, N. Patrick, and Wythe Streets
Alexandria, Virginia

June 2015

Limited historical research indicates that the Henry Daingerfield (1800-1866) owned the study area in the mid-19th century, with his house situated partially in the right-of-way for Wythe Street and partially within the northern portion of the study area. During the Civil War, the Daingerfield house was used as the headquarters for Battery H of the First Independent Pennsylvania Artillery, while the remainder of the block bounded by Patrick, Wythe, Alfred, and Pendleton Streets housed barracks, stables, and a hospital for the unit as well as a sutler's shop or dwelling. Elements of the complex that may lie within the study area include a barracks building, the sutler's building, a portion of the Daingerfield house/unit offices, a "sink" (privy), and possibly a hospital building.

By 1877, the majority of the buildings in the study area were likely no longer extant, with the exception of the Daingerfield house and a small building in the approximate location of the sutler's building during the Civil War. The study area remained part of the Henry Daingerfield estate in that year. By the late 19th century, the study area lay within the boundary of the African American community known as "Uptown," although it is unknown if the study area was inhabited during the last decades of the 19th century and the first 40 years of the 20th century. Sanborn fire insurance maps do not depict the study area until 1921, in which year the entire block bounded by Patrick, Wythe, Alfred, and Pendleton Streets is shown as undeveloped. The study area remained undeveloped until the construction of the Ramsey Homes dwellings in 1942.

The ultimate goals of the research are to understand the history of the project area, to develop a historical context for the interpretation of the site, and to identify, as precisely as possible, the potential locations of archaeological resources that may be preserved. The study shall also consider the effects of previous disturbances and grading on potential sites as well as the impact of the proposed construction activities on the areas of potential. The Study will conclude with specific recommendations, backed by stated evidence and arguments, as to which areas need Archaeological Evaluations and which areas do not. All aspects of this investigation shall comply with the *City of Alexandria Archaeological Standards* dated January 1996, *Guidelines for Conducting Cultural Resource Survey in Virginia*, and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.* Project details are as follows:

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Documentary Study Report and Recommendations

The consultant shall develop a full cultural and landscape history and shall identify significant themes through the research and articulate them in the report and summary; in addition, the consultant shall work with the developer, architect, and landscape architect to provide information in a way that can be used to integrate these themes and elements of the historic character of this place into the design and open space for the project.

The Documentary Study will consist of maps, plus primary and secondary source information. The archival research shall include, but is not limited to, a search of deeds, plats, title documents, probate and other court records; tax and census records; business directories; published and unpublished manuscripts of first-hand accounts (such as letters, diaries, and county histories); historical maps; newspaper articles; previous archaeological research; pedological, geological and topographic maps; modern maps, previous construction plans and photographs that can indicate locations of previous ground disturbance; and information on file with Alexandria Archaeology and the local history sections of public libraries in northern Virginia.

The archival research shall result in an account of the chain of title, a description of the owners and occupants, and a discussion of the land-use history of the property through time. The work will address issues relating to the changes in use of the land through time. It will identify significant themes and include the development of research questions that could provide a framework for the archaeological work and the development of historic contexts for the interpretation of the site. The work will present the potential for the archaeological work to increase our understanding of Alexandria's past and will highlight the historical and archaeological significance of the property.

In addition to the narrative, the Documentary Study report will include a map or series of overlay maps that will indicate the impact of the proposed construction activities on all known cultural and natural features on the property. The scale of the overlay map(s) will be large (such as 1 inch to 100 feet). The map(s) will depict the locations of features discovered as a result of the background documentary study (including, but not limited to, historic structures, historic topography, and water systems), the locations of any known previous disturbances to the site (including, but not limited to, changes in topography, grading and filling, previous construction activities), and the locations and depths of the proposed construction disturbances (including, but not limited to, structures, roads, grading/filling, landscaping, utilities). From this information, a final overlay map shall be created that indicates the areas with the potential to yield significant archaeological resources that could provide insight into Alexandria's past. The report will present specific recommendations in a Scope of Work that delineates the archaeological testing strategy needed to complete an Archaeological Evaluation. The map shall indicate locations for backhoe scraping or trenching, hand excavation, metal detection, and/or monitoring. **The recommendations will be based upon the specific criteria for evaluating potential archaeological significance as established and specified in the Alexandria Archaeological Protection Code**.

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Public Interpretation

The *City of Alexandria Archaeological Standards* require that a public summary be prepared as part of the Documentary Study. The public summary will be approximately 4 to 8 pages long with a few color illustrations. This should be prepared in a style and format that is reproducible for public distribution and use on the City's web site. Examples of these can be seen on the Alexandria Archaeology Museum website. A draft of the summary should be submitted to Alexandria Archaeology for review along with the draft of the Documentary Study report. Upon approval, a master copy (hard copy as well as on CD) will be submitted to Alexandria Archaeology. The summary and graphics should also be e-mailed to Alexandria Archaeology for publication on the web site.

Tasks

The following is a summary of the tasks to be completed:

1. Visit Alexandria Archaeology to gather information, including to-scale historical maps, site reports, and secondary compilations and indexes, and complete research on primary sources.

2. Visit other repositories to complete research from primary and secondary sources.

3. Analyze the compiled data to evaluate the potential for the recovery of significant archaeological resources on the property.

4. Produce a preliminary draft of the Documentary Study report with recommendations, including a Scope of Work for the Archaeological Evaluation if warranted, and submit it to Alexandria Archaeology.

5. Make required revisions and deliver 1 unbound and 3 bound copies of the final Documentary Study report (with title, consultant firm name and date on the spines) to Alexandria Archaeology, along with a CD of the final report and a separate CD of the public summary with graphics.

6. Meet with the City Archaeologist and the developer/architect/landscape architect to provide information that might be useful in integrating the historic character into the design of the development.

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Formats for Digital Deliverables:

1. Photographs:	.jpg
2. Line Drawings:	.gif or .jpg as appropriate
3. Final Report/Public Summary:	Word, PageMaker and/or PDF
4. Oral History:	Word
5. Catalogue:	Word, Access or Excel
6. Other Written material:	Word, Access, Excel, PageMaker or PDF as appropriate

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APPENDIX II
Public Summary of Documentary Study

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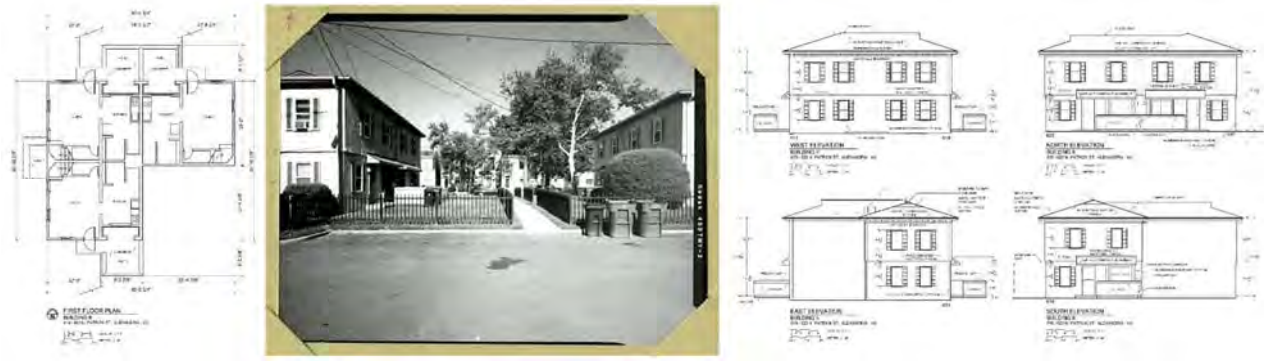

Ramsey Homes Site – City of Alexandria, Virginia

Public Summary of a Documentary Study

Prepared by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc.

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Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia prepared a Documentary Study for Ramsey Homes, located on North Patrick Street between Pendleton and Wythe Streets for Ramsey Homes, LP of Alexandria, Virginia. The Board of Commissioners of the Alexandria and Redevelopment Housing Authority (ARHA) propose to redevelop the site consistent with the Braddock East Master Plan (BEMP) at a density high enough to sustain a critical mass of low-income residents in order to maintain the strong social and support networks that are essential in low-income communities. The Documentary Study was required under the City of Alexandria Archaeological Protection Code prior to development of the property.

The documentary research showed that the only constant of the property's history is change, an evolution with an interesting pattern not readily apparent. Since settlement, the site's land use has constantly evolved from vacant land to farmland (pre-1849) to military housing and hospital use by the Union Army during the Civil War (1861-1865) to affordable tenant housing for European immigrants (1865-1914) to vacant land (1914-1941) to military housing for African American defense workers during World War II and the post-war years (1942-1945) and finally to affordable housing for the public (1946-present).

The Ramsey Homes site is situated outside of the original 1749 boundaries of Alexandria and remained undeveloped until the 19th century. George and Teresa Blish, immigrants from Germany, owned the block from at least 1834 until 1849. City tax records provide some details of Blish's tenure on the land; he owned horses, cows, and a cart or carts. It is probable that Blish operated a market garden or truck farm on the property; census records describe Blish and most of his neighbors as farmers and gardeners. Henry Daingerfield, one of the wealthiest men in Alexandria, purchased the property from Blish and erected several houses which were rented primarily to Irish immigrants who worked in various industries and businesses in and near Alexandria.

U.S. Quartermaster Corps Map 1865

At the onset of the Civil War, the Union army occupied Alexandria due to its proximity to Washington, D.C. and its importance as a sea-land transportation hub, which could be utilized to transport men, equipment, and supplies for the prosecution of the war. During the occupation of the city, much of the regular commerce that had characterized Alexandria before the war faltered as Southern loyalists fled the town and their properties were commandeered for the Union war effort. The United States Office of the Quartermaster General (USQM) took over the waterfront and many homes and buildings in the city were occupied by soldiers either temporarily staged in the town awaiting deployment, or more permanently garrisoned as part of the quartermaster corps or manning the system of forts that defended the city. The Union army commandeered the lot for the headquarters, barracks, and hospital of Battery H of the Independent Pennsylvania Artillery, which served garrison duty in Alexandria from 1863 until 1865.

The 1865 U.S, Quartermaster Corps map of the block bounded by Wythe, Alfred, Pendleton, and Patrick shows a two story headquarters building on Patrick Street with single story wings on the north, south, and west and a large veranda on the east elevation, two 20 x 60 foot barracks buildings, a kitchen, a blacksmith, a large stable fronting on Alfred Street, a small hospital building on Pendleton, hospital tents to the north of the hospital building, and a building marked "Sutlers, Private" in the southwestern quadrant of the block. A vegetable garden and landscaping surround the headquarters building and the space between the barracks, and several "sinks," or privies, are located at the edges of the block.

This hospital was most likely a post hospital that specifically served the men of Battery H. The sutler's building was probably a residence and shop for a civilian merchant licensed by the U.S. military to supply goods and services to soldiers, filling the role later occupied by canteens and exchanges. Although providing much-needed goods to soldiers, sutlers had a checkered reputation, were looked upon unfavorably by the U.S. Quartermaster General and other highly-placed individuals responsible for keeping the military supplied, and were the subject of frequent changes in regulations regarding the manner of their selection and licensing, what articles they could sell, and how they were allowed to transport and distribute their goods.

Each regiment or discreet detached unit of the army, such as Battery H of the Pennsylvania Light Artillery, was allowed one licensed sutler to serve the needs of the soldiery. A unit's sutler did not enjoy a position in the military chain of command, but was an official civilian contractor attached to the unit which provided them an effective monopoly on the trade of the unit's soldiers, as well as direct access to the paymaster to collect money due on account when pay was distributed.

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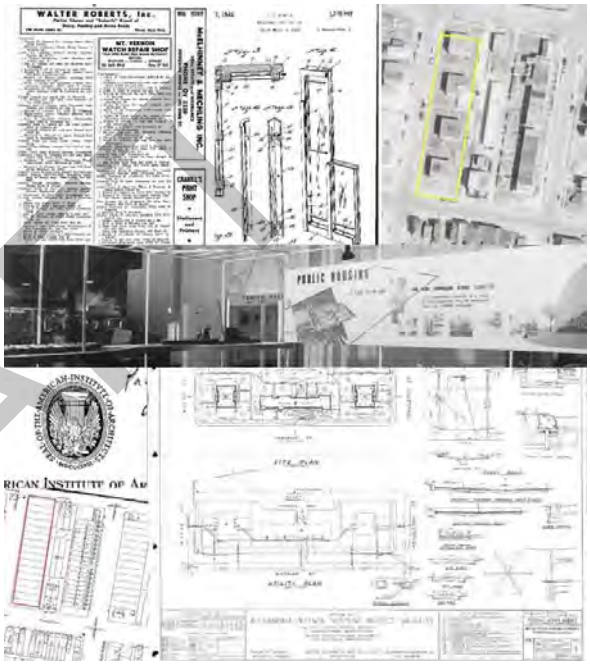
Food, condiments, and tobacco represented the majority of a typical sutler's sales. The military supplied a daily ration of hard tack and preserved pork or beef, all of which was frequently of sub-standard quality. The fresh and canned fruits and vegetables, pickles, flour, bread, cheese, butter, sardines, mustard, and other foodstuffs sold by sutlers were a welcome and necessary addition to the soldier's diet. Other goods officially approved for sale by sutlers included uniforms and other clothing, toiletries, playing cards, checker boards, pens, ink, stationery, books, newspapers, mending kits, dishes, cookware, knives, blankets, candles, and matches.

A preliminary archeological investigation of the Ramsey Homes site, conducted by city archeologists in the 1990s, resulted in the recovery of artifacts and a buried cobble path likely associated with the Civil War-era occupation of the property.

Following the war, Henry Daingerfield's heirs continued to rent out deteriorating houses on the block until the 1890s, by which time the property was likely vacant of habitable buildings.

During the early 20th century, the property changed hands multiple times and remained vacant until World War II. In 1941, the United States Housing Authority (USHA) began to plan for the construction of housing for African-American defense workers in the Uptown neighborhood. Then known as the Lanham Act Alexandria Defense Housing Project VA-44133, the vernacular Modernist Ramsey Homes (or Ramsay as it was sometimes spelled) was completed in 1942.

The original residents of the complex were African American defense workers, but their identities were kept secret as a matter of national security. The 1945 Alexandria City Directory does not list the odd-numbered addresses on the 600 block of N. Patrick Street as a result of this policy. Similarly, photographs and information concerning the Naval Torpedo Station on the waterfront, which employed an integrated work force and where residents of Ramsey Homes may have worked, were similarly withheld from public access until after World War II.ARHA purchased the homes in 1953 and has maintained them as affordable since then.



Based on the documentary research, the Ramsey Homes site was assumed to have a moderate to high probability of containing late 18th century – 20th century artifact deposits and archeological features that could potentially provide significant information about domestic development in the Parker-Gray Historic District and cultural deposits associated with the historic Civil War-era military occupation of the city. An archeological evaluation of the site was recommended.

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APPENDIX III
Scope of Work for Archaeological Evaluation

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Scope of Work for Archaeological Evaluation
Ramsey Homes Site
City of Alexandria, Virginia

April 2016
Revised June 2016

INTRODUCTION

The Ramsey Homes are located on North Patrick Street between Pendleton and Wythe Streets in the City of Alexandria, Virginia within the bounds of the historically African-American community known as Uptown and the locally zoned "Parker-Gray District" (Figure 1 and 2). The Board of Commissioners of the Alexandria and Redevelopment Housing Authority (ARHA) propose to redevelop the study area consistent with the Braddock East Master Plan (BEMP) at a density high enough to sustain a critical mass of mixed-income residents and work force housing in order to maintain the strong social and support networks that are essential in sustainable communities. The provision of additional affordable housing is a key goal of the Alexandria City Council 2010 Strategic Plan, ARHA 2012-2022 Strategic Plan, Braddock Metro Neighborhood plan, and the BEMP. In memos dated April 22, 2015; September 12, 2015; February 4, 2016; and February 20, 2016; City staff recommended demolition of the Ramsey Homes.

The United States Department of Housing and Urban Development (HUD) has determined that redevelopment of the Ramsey Homes site will constitute a federal undertaking; therefore, the project requires compliance with Section 106 of the National Historic Preservation Act. HUD has also determined that the City of Alexandria Office of Housing is the responsible entity relevant to Section 106 review. Section 106 of 36 CFR 800.2(c) (4) allows federal agencies and their designees to authorize an applicant or group of applicants to initiate consultation with the SHPO and other consulting parties. In order to accomplish the Project, the City of Alexandria Office of Housing has delegated Section 106 consultation activities to the Virginia Housing Development LLC of Alexandria, Virginia; Virginia Housing Development LLC (whose sole member is ARHA) is in turn allowing the coordination of Section 106 activities to be administered by the consultant, Wetland Studies and Solutions, Inc. (WSSI) of Gainesville, Virginia.

The project area includes four public housing buildings with 15 units. The buildings were constructed as temporary housing for defense workers in 1942 and were previously recorded with the Virginia department of Historic Resources (DHR) as seven resources in 2006 in anticipation of nominating the "Uptown/Parker-Gray Historic District" (DHR No. 100-0133) to the VLR and NRHP.

Building I.	912 and 914 Wythe Street (DHR No. 100-0133-1328)
	625 and 627 Patrick Street (DHR No. 100-0133-0754)
Building II.	619, 621, and 623 Patrick Street (DHR No. 100-0133-0751)
Building III.	609 and 611 Patrick Street (DHR No. 100-0133-0747)
	613 and 615 Patrick Street (DHR No. 100-0133-0749)
Building IV.	605 and 607 Patrick Street (DHR No. 100-0133-0745)
	913 and 915 Pendleton Street (DHR No. 100-0133-0948)

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Each resource contributes to the VLR district listed in 2008 and the NRHP district listed in 2010.

A *Documentary Study* has been completed for the property; the research revealed that the study area has a moderate to high probability of containing late 18th century – 20th century artifact deposits and archeological features that could potentially provide significant information about domestic development in the Parker-Gray Historic District within the City of Alexandria, Virginia. Additionally, one previously recorded archeological site has been mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. According to the DHR site record, the resource has not been evaluated for eligibility to the NRHP. As such, the study area is known to include cultural deposits associated with the historic Civil War-era military occupation of the city. Mapping provided by Alexandria Archaeology, showing testing conducted by Alexandria Archaeology in 1991 is included as Attachment A.

This Scope of Work is for an *Archaeological Evaluation* of the Ramsey Homes site and, in order to determine the presence/absence of significant archeological resources, calls for initial shovel test pit investigation, the excavation of test units, and exploratory machine trenching in locations where manual testing is not feasible, if necessary.

The initial archeological investigations described herein were designed to be conducted prior to the demolition of the Ramsey Homes; additional investigations (i.e. archeological monitoring) are proposed for the project's demolition phase. Miss Utility will be informed prior to any excavations.

If a significant site(s) is discovered as a result of the field work, the site(s) will be registered with the Virginia Department of Historic Resources (DHR). All aspects of this investigation will adhere to OSHA regulations and will comply with the *City of Alexandria Archaeological Standards* dated January 1996, 2011 DHR guidelines for archeological survey, and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.* Additionally, as this project will be subject to review under Section 106 of the National Historic Preservation Act, the investigation report will also be submitted to the DHR for review and comment, and subsequently, to all Section 106 consulting parties.

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ARCHEOLOGICAL FIELD INVESTIGATIONS

Archeological field personnel will conduct a walkover and complete visual inspection of the ground surface of the project area. All structures, visible disturbances, artifact scatters or other manmade features observed will be accurately mapped.

Shovel Test Pits

Archeological field personnel will excavate shovel test pits (STPs) on a grid at 50-foot intervals in all portions of the property and additional shovel test pits (STPs) on a grid at 25-foot intervals in a cruciform pattern around find locations, as needed in order to define archeological site boundaries or delineate specific artifact concentrations. Areas previously investigated by

Alexandria Archaeology will be retested during the Archaeological Evaluation. It is anticipated that the excavation of approximately 35-40 STPs will be needed.

The location of each STP will be mapped and documented with field notes. STPs will measure at least 15 inches in diameter and will be excavated by natural soil levels and will stop at the limit of manual excavation (i.e. at a depth of about 3-feet below ground surface or when impervious surfaces or impasses are encountered) or where gleyed soils, gravel, water, or well developed B horizons too old for human occupation are reached. Soil horizons will be classified according to standard pedological designations. Soil profiles will be made of at least one profile within each test unit, with soil descriptions noted in standard soil terminology (A, Ap, B, C, etc.). Soil colors will be described using the Munsell Soil Color Chart designations.

Any clearly modern fill horizons and/or modern surface soil may, at the discretion of the project archeologist, be discarded without screening; historic plowed soils, historic surfaces or historic fill soils, loess soils, and paleosols will be screened through 1/4-inch mesh hardware cloth screens.

Recovered artifacts will be bagged and labeled by unit number and by soil horizon. Artifacts will be bagged and labeled by unit number and by soil horizon.

Test Units and Features

Based on the results of testing conducted by Alexandria Archaeology in 1991, it is anticipated that additional work will be needed to evaluate the significance of archeological deposits or features found during the 1991 investigations and/or the shovel test pit program detailed above. It is anticipated that a minimum of six (6) hand excavated test units (3 x 3 feet) will be necessary to test potentially significant archeological features and buried ground surfaces found in test trenches. The test units will be excavated stratigraphically through the intact buried surface and all soil from the test unit will be screened through 1/4-inch mesh hardware cloth screens. Soil profiles will be made of representative units, with soil colors described using the Munsell Soil Color Chart designations. Artifacts will be bagged and labeled by unit number and by soil horizon. The work will be documented with field notes, sketch plans, and photographs. Any features encountered will be mapped and made available for inspection by Alexandria Archaeology. Decisions regarding the significance of features, feature sampling, and the need for additional testing will be made in consultation with Alexandria Archaeology.

Machine-Excavated Trenches

At locations where impervious surfaces or obstructions limit STP excavation to depths above the level where archeological deposits may occur, in consultation with Alexandria Archaeology, investigations may proceed with the mechanical excavation of backhoe trenches under archeological monitoring. The trenches, if needed, will be excavated using a backhoe equipped with a flat-lipped (smooth) bucket. Trenches will be immediately backfilled if significant features or buried surfaces are not identified. Each trench will measure approximately four (4) feet in width; a maximum of 250-linear feet of trench excavations are assumed with a maximum displacement of soil totaling 185 cubic yards. The trench excavations will be accurately mapped and each trench will be documented with representative photographs and soil profile drawings.

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Additional STPs at 50-25 foot-foot intervals and/or test units (3 x 3 feet) will be excavated within the trenches, if needed, where the potential for archeological deposits are identified. STP excavation shall be conducted otherwise as noted above.

Resource Management Plan

A Resource Management Plan and Scope of Work for archeological treatment of significant deposits or features will be prepared and presented to Alexandria Archaeology for review and approval. If the work required under an approved Resource Management Plan is not conducted during the Archaeological Evaluation, the Plan will be included in the Archaeological Evaluation report, as noted below.

As this project will be subject to review under Section 106 of the National Historic Preservation Act, the investigation report, any approved Resource Management Plan will also be submitted to the DHR for review and comment, and subsequently, to all Section 106 consulting parties. Mitigation of significant archeological resources will only be conducted under a) a Resource Management Plan approved by Alexandria Archaeology; b) a Resource Management Plan approved by the DHR; c) a fully executed Memorandum of Agreement.

ARCHEOLOGICAL MONITORING FOR BUILDING DEMOLITION

If required, based on the results of the Archaeological Evaluation, and/or Alexandria Archaeology requirements, archeological monitoring will be conducted during demolition of buildings and removal of foundations/concrete slabs within the project area. Such work will be documented through maintenance of daily monitoring logs and in a summary memorandum at the completion of monitoring. Any archeological deposits or cultural features found will be assessed for significance in consultation with Alexandria Archaeology. Potentially significant and significant finds will be addressed as detailed above. Results of the monitoring will be included in the Archaeological Evaluation report or in an addendum to said report.

LABORATORY WORK AND CURATION

Archeological artifacts recovered from the project area will be cleaned, stabilized (if necessary), cataloged, labeled and packaged in accordance with the guidelines set forth in the *City of Alexandria Archaeological Standards*. Organic materials that may require conservation may be recovered. Since it is not known if conservation will be necessary, it will be budgeted as an additional service.

Archeological collections recovered as a result of the Alexandria Archaeology Resource Protection Code must be curated at a facility which meets Federal standards for archeological curation and collections management as described by 36CFR Part 79. The Alexandria Archaeology Storage Facility meets these standards, and the property owner is encouraged to donate the artifact collection to the City for curation. The archeological consultant is responsible for arranging for the

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donation of the artifacts with the owner and will deliver the artifacts and signed forms to the appropriate storage facility.

At the conclusion of the project, all images, field notes and forms and other field records will be submitted in digital format on a CD. In addition, the artifacts, if they are to be donated to the City, will be delivered to Alexandria Archaeology.

ARCHAEOLOGICAL EVALUATION REPORT

The *Archaeological Evaluation Report* will include the following:a public summary; the results of any additional archival and documentary research, a map of the project area; a map with excavation locations and significant features; a summary of the procedures; results of the field investigation and artifact analysis, including a distribution map or other graphics which indicate potentially significant archeological areas; an integration of the field and analysis data with the historical record.

If the investigation results in the discovery of features that require additional archeological work, the *Archaeological Evaluation Report* will include a Resource Management Plan. The *Resource Management Plan* will present a strategy, scope of work (including a map indicating locations of proposed work in relation to completed tests), and budget for further investigations. However, with the approval of Alexandria Archaeology, the results of further investigations may be combined into one report.

After completion of fieldwork, one copy of the full *Archaeological Evaluation Report* will be submitted to Alexandria Archaeology as a draft for review. Once the report is approved by the City Archaeologist, revisions will be made, and two (2) bound copies and one (1) electronic copy will be submitted to the DHR for review. Once the report is approved by the DHR, revisions will be made if necessary, and four (4) copies, one unbound with original graphics, will be submitted to Alexandria Archaeology. The report will also be submitted on a CD. All site maps and drawings will be inked or computer-generated so as to produce sharp and clear images that will result in clear photocopies or microfilms.

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PUBLIC INTERPRETATION

The *City of Alexandria Archaeological Standards* require that a public summary be prepared as part of an *Archaeological Evaluation* Report. The public summary will be approximately 4 to 8 pages long with a few color illustrations. This should be prepared in a style and format that is reproducible for public distribution and use on the City's web site. Examples of these can be seen on the Alexandria Archaeology Museum website. A draft of the summary should be submitted to Alexandria Archaeology for review along with the draft of the *Archaeological Evaluation* Report. Upon approval, a master copy (hard copy as well as on CD or computer disk) will be submitted to Alexandria Archaeology. The summary and graphics should also be e-mailed to Alexandria Archaeology for publication on our web site.

In addition, if determined to be warranted by the City Archaeologist, the developer will be required to erect a historical marker on the property. Preparation of the written text and graphics for the

marker may be carried out in close consultation with the City Archaeologist. The text will consist of two paragraphs and be up to 200 words in length. The first paragraph will describe the historical significance of the site and the second paragraph will describe the findings of the archeological investigation. The graphics will consist of four appropriate illustrations; line drawings (*e.g.*, site maps, feature drawings), historic photographs and maps, and/or other illustrations (*e.g.*, site or artifact photos) in black and white or color with captions rendered as high-quality digital copies (jpeg or tiff files). Copyright releases will be obtained and credit provided for each graphic used. The text and graphics will be submitted to Alexandria Archaeology on a CD.

The results described in the *Archaeological Evaluation Report*, as well as information from the Public Summary and Historic Market Text can be used by the developer to guide the "design of open space and the preparation of interpretive signs" within the property. As this project will be subject to review under Section 106 of the National Historic Preservation Act, additional or alternate public interpretation measures may be necessary under an executed MOA.

TASKS

The following is a summary of the tasks to be completed for City review:

1. Notify Alexandria Archaeology of the fieldwork start date. Conduct the field investigation. Alexandria Archaeology staff will conduct site inspections throughout the course of the fieldwork to facilitate decision making.

2. Process all significant artifacts and complete the analysis.

3. Produce and submit one draft *Archaeological Evaluation Report* to Alexandria Archaeology, including the public summary document and the text and graphics for the historic marker. If further archeological investigations are necessary, the evaluation report can be a letter report to accompany the *Resource Management Plan* with the final report and marker text produced after all fieldwork is completed.

4. Deliver to Alexandria Archaeology four copies and CD of the final report, final versions and CDs of the public summary, historic marker test, plus all field notes, copies of historic documents, digital images, transcriptions, forms and associated records. In addition, arrange for the donation and delivery of the artifacts to an appropriate storage facility. Alexandria Archaeology is the preferred repository and requires a City of Alexandria Deed of Gift form.

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Formats for Digital Deliverables:

1. Photographs:	.jpg.
2. Line Drawings:	.gif or .jpg as appropriate.
3. Final Report/Public Summary	Word, PageMaker and/or PDF
4. Oral History	Word
5. Catalogue:	Word, Access or Excel
6. Other Written material:	Word, Access, Excel, PageMaker or PDF as appropriate

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ENCLOSURE 3

DHR Project No. 2015-0558

Phase I/II Archeological Investigation (*Archaeological Evaluation*)

Ramsey Homes

City of Alexandria, Virginia

WSSI #22682.03
DHR Project No. 2015-0558

Archeological Evaluation
(Phase I/II Archeological Investigations)

September 2016

Prepared for:
Ramsey Homes, LP
401 Wythe St.
Alexandria, VA 22314

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Prepared by:

Jeremy Smith, MSc, RPA and David Carroll, M.A., RPA

Thunderbird Archeology
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ABSTRACT

An *Archaeological Evaluation* (Phase I/II archeological investigation) was conducted of the Ramsey Homes project area, which is located on the eastern side of North Patrick Street between Pendleton and Wythe Streets in the City of Alexandria, Virginia. One archeological site (44AX0160), a Civil War-era military barracks site, was previously recorded extending into the project area by Alexandria Archeology in 1991. Additionally, the project area is located within the bounds of the Parker-Gray Historic District (DHR No. 100-0133) and includes four buildings with 15 units previously recorded with the DHR in 2006 as seven architectural resources (DHR Nos. 100-0133-1328, 100-0133-0754, 100-0133-0751, 100-0133-0747, 100-0133-0749, 100-0133-0745, and 100-0133-0948); these architectural resources are discussed in detail under a separate cover. Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study for Ramsey Homes, LP of Alexandria, Virginia. The fieldwork was carried out in July of 2016.

The archeological evidence recovered as result of the investigation indicates an occupation(s) date range for site 44AX0160 beginning in the late first quarter/early second quarter of the 19th century and continuing into the early 20th century, and the documentary research conducted for the project area supports this interpretation. However, as no intact contexts were identified during the current investigation, the interpretive value of the recovered artifact assemblage is limited, specifically regarding the ability to separate the various periods of occupations (i.e. the early to mid-19th-century occupations, the Civil War military occupation, and the post-Civil War occupations) within the project area and to assign artifacts to a specific occupation.

While the interpretive value of the recovered artifact assemblage was limited and no intact contexts or historic cultural features were identified during the Phase I/II investigation, the discovery of a historic living surface that pre-dates the mid-20th century throughout much of the project area indicates that there is a potential that cultural features associated with the historic occupations of the property are extant within the project area. Therefore, in our opinion, the portion of site 44AX0160 that extends into the project area is eligible for listing on the National Register of Historic Places under Criterion D due to the likelihood that it will provide significant information about domestic life and military history within the Parker-Gray Historic District during the second and third quarters of the 19th century. As current development plans will result in impacts to the site, we recommend that archeological data recovery be conducted at site 44AX0160. Additionally, we recommend that demolition of the buildings should occur only under archeological monitoring and that any significant cultural deposits identified beneath the buildings should be mitigated in accordance with an approved treatment plan.

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INTRODUCTION

This report presents the results of an Archeological Evaluation[1] of the Ramsey Homes project area, which is located on the eastern side of North Patrick Street between Pendleton and Wythe Streets in the City of Alexandria, Virginia (Exhibit 1). One archeological site (44AX0160), a Civil War-era military barracks site, was previously recorded extending into the project area by Alexandria Archeology in 1991. Additionally, the project area is located within the bounds of the Parker-Gray Historic District (DHR No. 100-0133) and includes four buildings with 15 units previously recorded with the DHR in 2006 as seven architectural resources (DHR Nos. 100-0133-1328, 100-0133-0754, 100-0133-0751, 100-0133-0747, 100-0133-0749, 100-0133-0745, and 100-0133-0948); these architectural resources are discussed in detail under separate covers (Carroll et al. 2016; Maas 2016). Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study described in this report for Ramsey Homes, LP of Alexandria, Virginia. The fieldwork was carried out in July of 2016.

The investigation was conducted in advance of proposed redevelopment of the project area; the Board of Commissioners of the Alexandria and Redevelopment Housing Authority (ARHA) propose to redevelop the study area consistent with the Braddock East Master Plan (BEMP) at a density high enough to sustain a critical mass of mixed-income residents and work force housing in order to maintain the strong social and support networks that are essential in sustainable communities. The provision of additional affordable housing is a key goal of the Alexandria City Council 2010 Strategic Plan, ARHA 2012-2022 Strategic Plan, Braddock Metro Neighborhood plan, and the BEMP. Specifically, the BEMP proposes meeting the goal of additional units in the ARHA sites proposed for redevelopment. In a memo dated April 22, 2015, city staff recommended demolition of the Ramsey Homes.

The United States Department of Housing and Urban Development (HUD) has determined that redevelopment of the Ramsey Homes site will constitute a federal undertaking; therefore, the project requires compliance with Section 106 of the National Historic Preservation Act. HUD has also determined that the City of Alexandria Office of Housing is the responsible entity relevant to Section 106 review. Section 106 of 36 CFR 800.2(c) (4) allows federal agencies and their designees to authorize an applicant or group of applicants to initiate consultation with the SHPO and other consulting parties. In order to accomplish the Project, the City of Alexandria Office of Housing has delegated Section 106 consultation activities to the Virginia Housing Development LLC of Alexandria, Virginia; Virginia Housing Development LLC (whose sole member is

[1] Archeological Evaluation surveys in the City of Alexandria, as required under the City of Alexandria Archeological Resource Protection Code specified in the City Zoning Ordinance Section 11-411 and adopted on June 24, 1992, are equivalent to both Phase I identification level surveys and Phase II evaluation level surveys, as described in the Virginia Department of Historic Resources' (DHR) 2011 *Guidelines for Conducting Historic Resources Surveys in Virginia* (DHR 2011).

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Exhibit 1
Vicinity Map

ARHA) is in turn allowing the coordination of Section 106 activities to be administered by the consultant, Wetland Studies and Solutions, Inc. of Gainesville, Virginia.

Boyd Sipe, M.A., RPA served as Principal Investigator on this project. The fieldwork was conducted by Senior Associate Archeologist Jeremy Smith, MSc, RPA, with the assistance of Daniel Baicy, M.A., RPA, Edward Johnson, Daniel Osborne, and Michael Craig Smith. Elizabeth Waters Johnson, M.A. served as Laboratory Supervisor and conducted the artifact analysis. All artifacts, research data and field data resulting from this project are currently on repository at the Thunderbird offices in Gainesville, Virginia.

Fieldwork and report contents are in compliance with the City of Alexandria Archaeological Protection Code and followed a Scope of Work (SOW) approved by Alexandria Archaeology (Appendix I). Additionally, fieldwork and report contents conformed to the guidelines set forth by the Virginia Department of Historic Resources (DHR) for a Phase I identification level survey as outlined in their 2011 *Guidelines for Conducting Historic Resources Survey in Virginia* (DHR 2011) as well as the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (DOI 1983). In general, at the time of the survey all aspects of the investigation were in compliance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665) (as amended).

The purpose of the survey was to locate and evaluate any cultural resources within the impact area and to provide a preliminary assessment of their potential significance in terms of eligibility for inclusion on the National Register of Historic Places. If a particular resource was felt to possess the potential to contribute to the knowledge of local, regional, or national prehistory or history, then additional work would be recommended.

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ENVIRONMENTAL SETTING

The project area lies within the Coastal Plain, which is underlain by sediments that have been carried from the eroding Appalachian Mountains to the west, and includes layers of Jurassic and Cretaceous clays, sands and gravels. These are overlain by fossiliferous marine deposits, and above these, sands, silts and clays continue to be deposited. The Coastal Plain is the youngest of Virginia's physiographic provinces and elevations range from 0 to 200/250 feet above mean sea level (a.m.s.l.). It is characterized by very low relief broken by several low terraces. The province runs west to the Fall Line, a low escarpment at circa 200 feet a.m.s.l., which formed where the softer sedimentary rocks of the Coastal Plain abut the more resistant rocks of the Piedmont. Where rivers cross this juncture, rapids or falls have developed.

The Ramsey Homes project area is situated on developed land on a low terrace overlooking the Potomac River, which lies less than one half mile to the east (Exhibit 2). Elevations within the project area average about 44 feet a.m.s.l. The project area is landscaped with grassy lawns, shrubbery, and a few deciduous trees (Exhibit 3).

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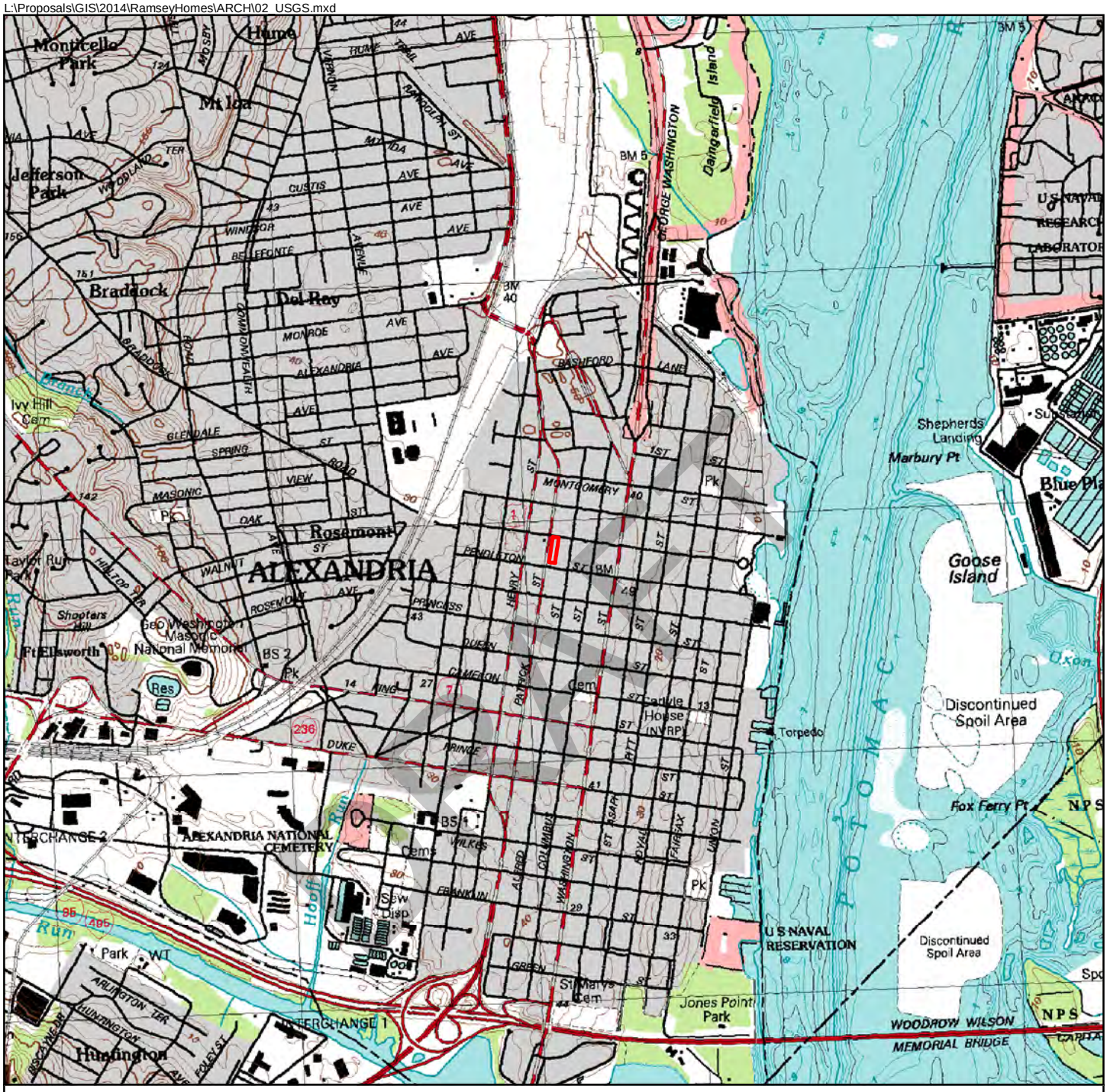

Exhibit 2
USGS Quad Map
Alexandria, VA-DC-MD 1994

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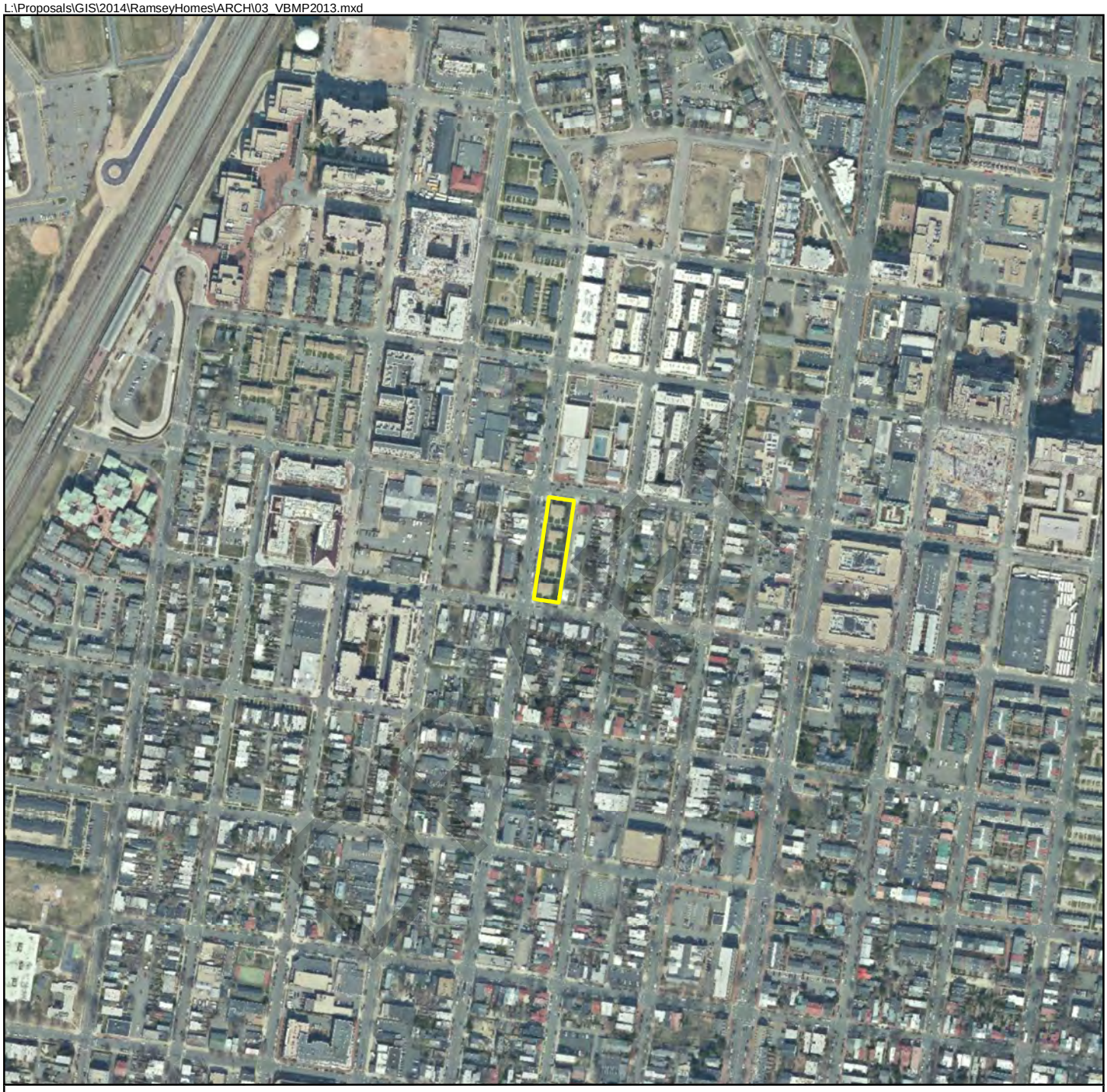

Project Area

N
W E
S

0 500
Feet
Original Scale: 1 " = 500 '

Photo Source: Wetland Studies and Solutions, Inc.

Exhibit 3
March 2013 Natural Color Imagery

Concrete sidewalks used to access the four Ramsey Homes buildings run throughout the project area. In general, the project area surroundings can be described as inner city urban with mixed commercial and residential use.

PALEOENVIRONMENTAL BACKGROUND

The basic environmental history of the area has been provided by Carbone (1976) (see also Gardner 1985, 1987; Johnson 1986). The following will present highlights from this history, focusing on those aspects pertinent to the project area.

At the time of the arrival of humans into the region, about 11,000 years ago, the area was beginning to recover rapidly from the effects of the last Wisconsin glacial maximum of circa 18,000 years ago. Vegetation was in transition from northern dominated species and included a mixture of conifers and hardwoods. The primary trend was toward a reduction in the openness which was characteristic of the parkland of 14-12,000 years ago. Animals were undergoing a rapid increase in numbers as deer, elk and, possibly, moose expanded into the niches and habitats made available as the result of wholesale extinctions of the various kinds of fauna that had occupied the area during the previous millennia. The current cycle of ponding and stream drowning began 18-16,000 years ago at the beginning of the final retreat of the last Wisconsin glaciation (Gardner 1985); sea level rise has been steady since then.

These trends continued to accelerate over the subsequent millennia of the Holocene. One important highlight was the appearance of marked seasonality circa 7000 BC. This was accompanied by the spread of deciduous forests dominated by oaks and hickories. The modern forest characteristic of the area, the mixed oak-hickory-pine climax forest, prevailed after 3000-2500 BC. Continued forest closure led to the reduction and greater territorial dispersal of the larger mammalian forms such as deer. Sea level continued to rise, resulting in the inundation of interior streams. This was quite rapid until circa 3000-2500 BC, at which time the rise slowed, continuing at a rate estimated to be ten inches per century (Darmody and Foss 1978). This rate of rise continues to the present. Based on archeology (c.f. Gardner and Rappleye 1979), it would appear that the mid-Atlantic migratory bird flyway was established circa 6500 BC.

Oysters had migrated to at least the Northern Neck by 1200 BC (Potter 1982) and to their maximum upriver limits along the Potomac near Popes Creek, Maryland, by circa 750 BC (Gardner and McNett 1971), with anadromous fish arriving in the Inner Coastal Plain in considerable numbers circa 1800 BC (Gardner 1982).

During the historic period, circa AD 1700, cultural landscape alteration becomes a new environmental factor (Walker and Gardner 1989). Around this time, Euro-American settlement extended into the Piedmont/Coastal Plain interface. With these settlers came land clearing and deforestation for cultivation, as well as the harvesting of wood for use in a number of different products. At this time the stream tributaries to the Potomac, were broad expanses of open waters from their mouths well up their valleys to, at, or near their "falls" where they leave the Piedmont and enter the Coastal Plain. These streams were

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conducive to the establishment of ports and harbors, elements necessary to commerce and contact with the outside world and the seats of colonial power. Most of these early ports were eventually abandoned or reduced in importance, for the erosional cycle set up by the land clearing resulted in tons of silt being washed into the streams, ultimately impeding navigation.

The historic vegetation would have consisted of a mixed oak-hickory-pine forest. Associated with this forest were deer and smaller mammals and turkey. The nearby open water environments would have provided habitats for waterfowl year round as well as seasonally for migratory species.

CULTURAL HISTORICAL BACKGROUND

Prehistoric Overview

The following section provides a brief overview and context of the general prehistory of the region. A number of summaries of the archeology of the general area have been written (c.f. Gardner 1987; Johnson 1986; Walker 1981); Gardner, Walker, and Johnson present essentially the same picture, with the major differences lying in the terminology utilized for the prehistoric time periods. The dates provided below for the three general prehistoric periods, and associated sub-periods, follow those outlined by the Virginia Department of Historic Resources (DHR 2011:123-124).

Paleoindian Period (10,000/9500-8000 BC)

The Paleoindian period corresponds to the end of the Late Pleistocene and beginning of the Early Holocene of the Late Glacial period, which was characterized by cooler and drier conditions with significantly less seasonal variation than is evident in the region today. The cooler conditions resulted in decreased evaporation and, in areas where drainage was restricted by topography, could have resulted in the development of wetlands in the Triassic Lowlands (Walker 1981; Johnson 1986:P1-8). Generally speaking, the nature of the vegetation was marked by open forests composed of a mix of coniferous and deciduous elements. The individual character of local floral communities would have depended on drainage, soils, and elevation, among other factors. The structure of the open environment would have been favorable for deer, bear, moose, and, to a lesser degree, elk, which would have expanded rapidly into the environmental niches left available by the extinction and extirpation of the large herd animals and megafauna characteristic of the Late Pleistocene.

The fluted projectile point is considered the hallmark of the Paleoindian lithic toolkit. Based on his work at the Flint Run Complex, Gardner identified three distinct sub-phases within the larger fluted point phase (Gardner 1974). The oldest of the Paleoindian sub-phases is identified by the now classic Clovis point, a large, bifacially flaked tool with a channel or flute removed from both sides of its base. Regionally, the widely accepted beginning date for Clovis type points is circa 9500 BC; however, some data has suggested a pre-11,000 BC beginning date for Clovis points (cf. McAvoy and McAvoy

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1997; Johnson 1997). The Clovis sub-phase is followed in time by the Middle Paleo sub-phase, defined by smaller fluted points. The Dalton-Hardaway sub-phase is the final one of the period, and is characterized by the minimally fluted Dalton and Hardaway projectile points. This three-period subdivision is well supported by stratigraphy. Associated with these projectile points are various other tools that usually cannot be taken by themselves as diagnostic Paleoindian indicators. Examples of such stone tools include end or side scrapers, bifaces, blades, and spokeshaves, which are all associated with the hunting and processing of game animals.

Possible evidence for pre-Clovis colonization of the Americas has been found at the Cactus Hill site (44SX0202) in Virginia, where an ephemeral component dating from 15,000 to 13,000 BC included prismatic blades manufactured from quartzite cores and metavolcanic or chert pentagonal bifaces (Haynes 2002: 43-44; Johnson 1997; McAvoy 1997; McAvoy and McAvoy 1997). Generally, lanceolate projectile points, prismatic blades, pentagonal bifaces, polyhedral blade cores, microflakes and microlithic tools comprise possible pre-Clovis assemblages and a preference for cryptocrystalline lithic material such as chert and jasper is noted (Goodyear 2005). Cactus Hill and other reportedly pre-Clovis sites, including SV-2 (44SM0037) in Saltville, Virginia (McDonald 2000; McDonald and Kay 1999) and the Meadowcroft Rock Shelter in western Pennsylvania (Adovasio et al. 1990; Adovasio et al. 1998), have been the subject of much controversy and no undisputed pre-Clovis sites or sites representing substantial pre-Clovis occupations have been identified in the region.

Paleoindian archeological assemblages rarely contain stone tools specifically designed for processing plant material such as manos, metates, or grinders. This general absence or rarity of such tool categories does not mean that use of plant resources was unimportant; rather, it may suggest that a far greater emphasis was placed on hunting versus gathering, at least when viewed from the perspective of an assemblage of stone tools. For instance, carbonized plant materials have been found in Paleoindian contexts and plant remains have been recovered from some Paleoindian sites. The remains of acalypha, blackberry, hackberry, hawthorn plum, and grape were recovered from a hearth in the Paleoindian portion of the Shawnee-Minisink Site in eastern Pennsylvania (Dent 1991). Although hard evidence is lacking for the immediate study area, the subsistence settlement base of Paleoindian groups in the immediate region likely focused on general foraging, drawing a comparison with the Shawnee-Minisink data, and certainly focused on hunting (Gardner 1989 and various).

The settlement pattern of Paleoindian peoples has been described as being quarry-centered, with larger base camps being situated in close proximity to localized sources of high quality cryptocrystalline lithic raw materials, such as chert, jasper, and chalcedony. Smaller exploitative or hunting and/or gathering sites are found at varying distance from these quarry-centered base camps (Gardner 1980). This model, developed from Gardner's work at the Thunderbird site complex in the Shenandoah River Valley, has wide applicability throughout both the Middle Atlantic region and greater Eastern United States. The extreme curation (or conservation) and reworking of the blade element exhibited by many stray point finds recovered throughout the Middle Atlantic region, especially specimens from Coastal

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Plain localities, is a strong argument supporting the quarry-base camp settlement model. Gardner has argued that once a tool kit has been curated to its usable limit, a return to the quarry-tied base camp would be made in order to replenish raw materials (Gardner 1974).

Sporadic Paleoindian finds are reported in the Potomac Valley, but, overall, these distinctive projectile points are not too common in the local area (cf. Gardner 1985; Brown 1979). Paleoindian fluted points have been found as isolated finds in the county; however, at the time of this writing no intact sites have yet been documented.

Early Archaic Period (8000-6500 BC)

The Early Archaic period coincides with the early Holocene climatic period. The warming trend, which began during the terminal Late Pleistocene and Paleoindian period, continued during the Early Archaic period. Precipitation increased and seasonality became more marked, at least by 7500 BC. This period encompasses the decline of the open grasslands of the previous era and the rise of closed boreal forests throughout the Middle Atlantic region; this change to arboreal vegetation was initially dominated by conifers, but soon gave way to a deciduous domination. Arguably, the reduction of these open grasslands led to the decline and extinction of the last of the Pleistocene megafauna, as evidence suggests that the last of these creatures (e.g., mastodons) would have been gone from the area around the beginning of the Early Archaic period. Sea level throughout the region rose with the retreat of glacial ice, a process that led to an increase in the number of poorly drained and swampy biomes; these water-rich areas became the gathering places of large modern mammals.

Similar to the Paleoindian period, the subsistence settlement strategy of Early Archaic peoples was one focused on seasonal migration and hunting and gathering. Early Archaic humans were drawn to the wet biomes resulting from sea level rise because the abundant concentration of game animal, such as white-tailed deer, elk, and bear, made for excellent hunting. As the arboreal vegetation became more abundant and deciduous forests spread, the exploitation of newly available and abundant plant resources, such as fruits, nuts, and acorns increased among Early Archaic populations (Egloff and Woodward 1992:13-14).

Although the manufacturing techniques of projectile points and the favored use of cryptocrystalline raw materials of the Paleoindian period remained unchanged throughout the Early Archaic period, stylistic changes in the lithic toolkit of Early Archaic peoples are evident. The switch from the fluting of projectile points to notching is generally considered to mark the end of the Paleoindian and the beginning of the Archaic period; examples of Early Archaic point types include Amos Corner Notched, Kirk and Palmer Corner Notched, Warren Side Notched and Kirk Stemmed varieties. Gardner has demonstrated that while corner notched and side notched points show a stylistic change from the earlier fluted varieties, they all occurred within a single cultural tradition (Gardner 1974). The transition from fluting to notching is not a radical change, but the gradual replacement of one attribute at a time. The fluting, which was nearly absent during the Dalton-Hardaway sub-phase, is replaced by corner notching, which is then gradually replaced by side notching in the Archaic sequence. The initial reason for the

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change in hafting and related modifications of the basal elements of Early Archaic points is likely related to the introduction of the atlatl or spear-thrower, which increased the accuracy and force with which spears could be thrown; the fluted forms may have been utilized mainly as thrusting tools, while the earlier notched forms may have been mounted onto a smaller lance with a detachable shaft and powered by the atlatl. As in the earlier Paleoindian period, stone tools designed for the processing of plant materials are rare in Early Archaic assemblages.

Towards the close of the Early Archaic period, trends away from a settlement model comparable to the earlier Paleoindian quarry-focused pattern are evident. A major shift is one to a reliance on a greater range of lithic raw materials for manufacture of stone tools rather than a narrow focus on high quality cryptocrystalline materials. Lithic use was a matter of propinquity; stone available was stone used. However, extensive curation of projectile points is still evident up until the bifurcate phases of the subsequent Middle Archaic period. It may be that while a reliance on high quality lithic materials continued, other kinds of raw material were used as needed.

This pattern is not readily documented during the earlier Paleoindian period. Johnson argues that the shift to a wider range of materials occurs in the gradual shift from the Palmer/Kirk Corner Notched phases of the Early Archaic to the later Kirk Side Notched/Stemmed or closing phases of the period (Johnson 1983; 1986:2-6). Changes in lithic raw material selection are likely related to movement into a wider range of habitats coincident with the expansion of deciduous forest elements. Early Archaic period sites begin to show up in areas previously not occupied to any great extent if at all. Additionally, the greater number of sites can be taken as a rough indicator of a gradual population increase through time.

Middle Archaic (6500-3000 BC)

The chronological period known as the Middle Archaic coincides with the appearance of full Holocene environments. Climatic trends in the Holocene at this time are marked by the further growth of deciduous forests, the continuing rise of sea levels, and warm and moist conditions. This change led to the spread of modern temperate floral assemblages (such as mesic hemlock and oak forests), modern faunal assemblages, and seasonal continental climates. The advent of such climates and related vegetation patterns allowed for the development of seasonally available subsistence resources, which led to base camps no longer being situated near specific lithic sources, but closer to these seasonal resources. This shift also led to an increase in the number of exploited environmental zones. The moist conditions favored the spread of swamps and bogs throughout poorly drained areas like floodplains, bays, or basins. Rising sea level and overall moist conditions helped form these swamps and basins; sea level had risen too rapidly to allow the growth of large, stable concentrations of shellfish. Estuarine resources were scarce and the inhabitants relied on varied animal resources for sustenance. Essentially modern faunal species were spread throughout the various biomes, but their distributions would have been somewhat different than that known for today. The prevalent species included deer, turkey, and smaller mammals.

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The initial technological shift in lithic projectile points between the Early and Middle Archaic periods is generally considered to be marked by the introduction of bifurcate base projectile points, such as St. Albans, LeCroy, and Kanawha types (Broyles 1971; Chapman 1975; Gardner 1982). Other researchers place the bifurcate phase within the Early Archaic period. The bifurcate points do not occur throughout the entire Middle Archaic period; however, they appear to be constrained to the earlier portion of the period and disappeared sometime before 5000 BC (Chapman 1975, Dent 1995; Bergman et al. 1994). Several other marked changes occurred along with the onset of the bifurcate points. Ground stone tools, such as axes, gouges, grinding stones, and plant processing tools, were introduced along with bifurcate points (Chapman 1975, Walker 1981). These new tools are evidence for the implementation of a new technology designed to exploit vegetable/plant resources. Also, a shift to the use of locally available lithic raw material, which began during the closing phases of the Early Archaic, is manifest by the advent of the bifurcate phases.

The major stemmed varieties of projectile point that follow the earlier bifurcate forms and typify the middle portion of the Middle Archaic period include the Stanly, Morrow Mountain I and Morrow Mountain II varieties. Coe (1964) documented a Stanly-Morrow Mountain sequence at the Doerschuk Site in the North Carolina Piedmont, and similar results were recorded at the Neville Site in New Hampshire (Dincauze 1976) and the Slade Site in Virginia (Dent 1995). The projectile points marking the latter portion of the Middle Archaic period are the lanceolate shaped Guilford type and various side notched varieties (Coe 1964; Dent 1995). Vernon points, common at the Accokeek Creek Site in Prince George's County, Maryland, are considered to be local variants of Halifax points (McNett and Gardner 1975:9). This data seems to indicate that a similar Middle Archaic projectile point chronology exists in the Virginia-Maryland area.

It is during the Middle Archaic period that prehistoric human presence becomes relatively widespread in a wide range of environmental settings (Gardner 1985, 1987; Johnson 1986; Weiss-Bromberg 1987). As far as the inhabitants of the Middle Archaic period are concerned, there is an increase in population, which can be seen in the sheer number of sites (as represented by the temporally diagnostic point types) throughout the Middle Atlantic region. Temporally diagnostic artifacts from upland surveys along and near the Potomac show a significant jump during the terminal Middle Archaic and beginning Late Archaic; Johnson noted in his overview of Fairfax County archeology a major increase in the number of sites (as measured by temporally diagnostic point types) during the bifurcate phase and the later phases of the Middle Archaic period (Johnson 1986:2-14). With the increasing diversity in natural resources came a subsistence pattern that was predicated on the seasonal harvest of various nut species and other plant resources that characterized deciduous forest environments. Base camps were located in high biomass habitats or areas where a great variety of food resources could be found (Walker 1981). These base camp locations varied according to the season and were located on floodplains, interior fluvial swamp settings, and in some cases, within interior upland swamp settings. The size and duration of the base camps appear to have depended on the size, abundance, and diversity of the immediately local and nearby resource zones.

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Late Archaic (3000-1200 BC)

The rise in sea level continued during the Late Archaic period, eventually pushing the salinity cline further upstream and creating tidal environments; a corresponding movement of various riverine and estuarine species took place with the development of tidal conditions in the embayed section of the Potomac and its main tributary streams. Freshwater spawning fish had to travel farther upstream to spawn, fostering extensive seasonal fish runs. The development of brackish water estuaries as a result of an increase in sea level in the Hudson, Delaware, and Chesapeake Bay regions led to the spread of various shell species, such as oysters and crabs (Gardner 1976; Gardner 1982). In general, climatic events approached those of modern times during the Late Archaic period.

Throughout the Eastern United States, distinctive patterns of the Native-American landscape become evident by about 3000/2500 BC, marking a significant shift with earlier Middle Archaic components. The Late Archaic period is characterized by an increase in population over that documented for the Early and Middle Archaic periods, based on an increase in both the number of identified sites dating to this period and in their size and widespread distribution. An increasingly sedentary lifestyle evolved, with a reduction in seasonal settlement shifts (Walker 1981; Johnson 1986:5-1). Food processing and food storage technologies were becoming more efficient, and trade networks began to be established.

In parts of the Middle Atlantic region, the development of an adaptation based on the exploitation of riverine and estuarine resources is apparent. Settlement during the Late Archaic period shifted from the interior stream settings favored during earlier periods to the newly embayed stream mouths and similar settings (Gardner 1976). Although Late Archaic populations continued a foraging pattern linked to dense forests and their seasonally available plant resources, interior sites became minimally exploited, though not abandoned, sustaining smaller hunting camps and specialized exploitative stations; sites in these areas exhibit varying emphasis on procurement of locally available cobble or tabular lithic sources, such as chert, quartz, and quartzite, as well as a variety of plant species. In settlement-subsistence models presented by Gardner, this shift is linked with the development of large seasonal runs of anadromous fish. These sites tend to be concentrated along the shorelines near accessible fishing areas. The adjacent interior and upland zones become rather extensively utilized as adjuncts to these fishing base camps.

The Late Archaic technological assemblage continued an emphasis on ground stone tools first noted in the Middle Archaic period. Steatite net weights and carved steatite bowls with lug handles, which would not break when heated during cooking, first appeared during this period and are common throughout the Eastern United States from Maine to Florida. The use of steatite bowls is often seen as an indicator of increased sedentism among Late Archaic populations, as the vessels would have been heavy and difficult to transport (Egloff and Woodward 1992:26). In Virginia, outcrops of steatite have been identified in the eastern foothills of the Blue Ridge Mountains, though in limited

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numbers, from Fairfax County to Carroll County in southern Virginia. Archeologically, fragments of steatite bowls have been recovered in Late Archaic contexts in varying physiographic settings in the Middle Atlantic, often at great distances from steatite outcrops and quarry sites, which many have interpreted as evidence of widespread trading between Late Archaic peoples across the region. Kavanagh's (1982) study of the Monocacy River watershed in Maryland suggests that dug-out canoes were being produced during the Late Archaic period, based on the greater occurrences of gouges and adzes recovered from Late Archaic contexts (Kavanagh 1982: 97); canoes would have allowed for increased mobility and facilitated trading among Late Archaic groups via the various rivers and streams in the region.

The most easily recognizable temporally diagnostic projectile point in the Middle Atlantic region is the parallel stemmed, broad-bladed Savannah River point, which has a number of related cognate types and descendant forms, such as the notched broadspears, Perkiomen and Susquehanna, Dry Brook and Orient, and more narrow bladed, stemmed forms such as Holmes. Defined by Coe based on work in the Carolina Piedmont (Coe 1964), the Savannah River point represents what could be, arguably, a typological horizon throughout the Eastern United States east of the Appalachians, dating from about 2600 to perhaps as late as 1500 BC. Gardner (1987) separates the Late Archaic into two phases: Late Archaic I (2500-1800 BC) and Late Archaic II (1800-1000 BC). The Late Archaic I corresponds to the spread and proliferation of Savannah River populations, while the Late Archaic II is defined by Holmes and Susquehanna points. The distribution of these two, Gardner (1982; 1987) suggests, shows the development of stylistic or territorial zones. The Susquehanna style was restricted to the Potomac above the Fall Line and through the Shenandoah Valley, while the Holmes and kindred points were restricted to the Tidewater and south of the Potomac through the Piedmont. Another aspect of the differences between the two groups is in their raw material preferences: Susquehanna and descendant forms such as Dry Brook and, less so, Orient Fishtail, tended to be made from rhyolite, while Holmes spear points were generally made of quartzite.

Early Woodland (1200-300 BC)

The Early Woodland period corresponds generally to the Sub-Atlantic episode, when relatively stable, milder, and moister conditions prevailed; although short-term climatic perturbations were present. By this point in time, generally, the climate had evolved to its present conditions (Walker 1981).

The major artifact hallmark and innovation of the Early Woodland period is the appearance of pottery (Dent 1995; Gardner and McNett 1971). Archeologists believe that ceramic technology was introduced to Virginia from people living on the coasts of Georgia and South Carolina, where pottery had been made by prehistoric populations since approximately 2500 BC (Egloff and Woodward 1992:26). It is important to note that pottery underscores the sedentary nature of the local resident populations, as clay ceramics of the period would have been fragile and cumbersome to transport. Further evidence of this sedentism has been identified in the region in the form of subsurface

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storage pits (likely for foodstuffs), platform hearths, midden deposits, and evidence of substantial pole-constructed structures. This is not to imply that Early Woodland populations did not utilize the inner-riverine or inner-estuarine areas, but rather that this seems to have been done on a seasonal basis by people moving out from established bases; this settlement pattern is essentially a continuation of Late Archaic lifeways with an increasing orientation toward seed harvesting in floodplain locations (Walker 1981). Small group base camps would have been located along Fall Line streams during the spring and early summer in order to take advantage of the anadromous fish runs. Satellite sites such as hunting camps or exploitive foray camps would have operated out of these base camps.

In the middle to lower Potomac River Valley, as well as most of the surrounding Middle Atlantic region, the earliest known ceramics begin with a ware known as Marcey Creek. In chronological terms, Marcey Creek likely falls within the first 200 years of the final millennium BC, or roughly 1000 to 800 BC. This ware is a flat bottomed vessel tempered with crushed steatite or, in the Eastern Shore region, other kinds of crushed rock temper (Manson 1948). Based on vessel shape, this distinctive ware is interpreted as a direct evolution or development from the flat bottomed stone bowls of the Late Archaic period. Vessels of this ware frequently exhibit the same lugs on the side walls as seen on Late Archaic steatite bowls. As a ceramic ware group, Marcey Creek is short lived in terms of its position in the chronological record. The earliest dates for Marcey Creek are 1200 BC in the Northern Neck (Waselkov 1982) and 950 BC at the Monocacy site in the Potomac Piedmont (Gardner and McNett 1971).

Shortly after about 800 BC, conoidal and somewhat barrel shaped vessels with cord marked surfaces enter the record in the Middle Atlantic region and greater Northeast; whether these evolved from the flat bottomed Marcey Creek vessels or simply replaced them is unknown. Locally, such a ware has been designated Accokeek Cord Marked, first described from the Accokeek Creek Site in Prince George's County, Maryland (Stephenson et al. 1963). Radiocarbon dates for Accokeek place it between approximately 750 BC and 300/400 BC, when it is superseded by net impressed varieties, including Popes Creek and related wares (Gardner and McNett 1971; Mouer et al. 1981; Mounier and Cresson 1988). Accokeek ware was tempered with both sand and crushed quartz, although any suitable stone may have been used for the grit source, including steatite. In many cases, temper selected for use by Accokeek potters appears to have been based on propinquity to specific resources. In the Coastal Plain settings of the Maryland and Virginia, Accokeek typically has a "sandier" paste and could be said to have sand as a tempering agent. However, when large enough sherds are analyzed, crushed quartz tempering is invariably found in this ware. Whether or not the paste of the vessel is sandy or more clayey in texture (or "feel") depends on the clay source, either Piedmont or Coastal Plain. Clay sources from Coastal Plain settings usually contain greater amounts of sand.

Some chronological frameworks for the Middle Atlantic region, particularly in Maryland, suggest a transitional ware, such as Selden Island (cf. Slattery 1946), between Marcey Creek and Accokeek and its cognate wares. While this concept of a transitional ware has

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logical merit, it cannot be demonstrated conclusively with the evidence currently available. In many cases, the excavated sites show depositional contexts from this period with little vertical separation between Late Archaic and Early Woodland deposits. A more refined chronology that clarifies such issues of ceramic change still needs to be developed.

Generally, temporally diagnostic projectile points from the Early Woodland period include smaller side notched and stemmed variants such as Vernon and Calvert, and diagnostic spear points such as Rossville/Piscataway points. The lobate based Piscataway point has been associated archeologically with Accokeek pottery at a number of sites in the Middle Atlantic region; locally these points have been termed "Teardrop" points by Mounier and other investigators (cf. Mounier and Cresson 1988). This point type has been found in association with Accokeek pottery at sites in New Jersey (cf. Mounier and Cresson 1988; Barse 1991), in Maryland (Barse 1978), and in Virginia (Mouer et al. 1981; McClearen 1991). These points continue into the early phases of the Middle Woodland period and have been found in contexts containing Popes Creek, Albemarle, and early variants of Mockley ceramics along the Potomac River (Barse 2002).

Middle Woodland (300 BC-AD 1000)

The Middle Woodland period is characterized by an increase in population size and increased sedentism. With the emergence of Middle Woodland societies, an apparent settlement shift occurred compared to those seen in the intensive hunter-gatherer-fisher groups of the Late Archaic and Early Woodland periods. In brief, it appears that a selection to broader floodplain localities and the development of larger storage facilities at base camp localities dominated settlement patterns at this time (cf. Cross 1956). Some degree of seasonal occupation and migration centered on natural food resources still occurred; potentially the year was split between more permanent settlements located in the inner Coastal Plain region and the Piedmont uplands. In general, from AD 200 to approximately AD 900, settlement in the Potomac Piedmont was sparse. Smaller exploitative sites are also known and found as small shell middens in estuarine settings and interior or inter-riverine hunting stations along the drainage divides between the Delaware River and its tributaries. Essentially all available food resources were now utilized, including fresh and saltwater aquatic species (i.e., oysters, fish, crab, etc.), deer, turkey, and migratory waterfowl. People also began to intensively harvest and store a variety of locally available plants, seeds, and nuts, such as amaranth seeds, chenopod seeds, wild rice, hickory nuts, acorns, and walnuts.

The Middle Woodland period is best interpreted as a gradual development from the Early Woodland and, despite clear continuity, is marked by innovations in the ceramic realm. One notable addition to ceramic technology, and one clearly widespread throughout the Middle Atlantic region, is the inception of vessels exhibiting net impressed surface treatments. A wider range of vessel forms and sizes also can be documented compared to earlier vessel assemblages. The net impressed surfaces and greater variation in vessel size and shape represent a significant change used for defining the Middle Woodland period in the Middle Atlantic region from areas south of the James River through the

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Chesapeake region and into the lower Susquehanna and Delaware River drainages. Accokeek and related wares of the Early Woodland period gradually developed into what has become known as the Albemarle ware group, commonly found in the Piedmont of Virginia and, perhaps, Pennsylvania and Maryland; it does not appear to be present in the Delaware Valley area.

Based on work in the lower Potomac River Valley and the upper Delaware River Valley, net impressed ceramics enter the chronological record around 500 BC (Gardner and McNett 1971). More recently, AMS dating on carbon taken from a sherd of Popes Creek recovered in Charles County, Maryland returned a slightly younger date of 2235 ±100 B.P., or 285 ±100 BC (Curry and Kavanagh 1994). In the upper Delaware River area, Broadhead net impressed ceramics, which have been considered as a northern Popes Creek cognate, have been dated to 480 ±80 BC in New Jersey (Kinsey 1972:456). Other similar wares include the net impressed varieties of Wolf Neck and Colbourn ceramics from the Eastern Shore of Maryland and Delaware. Comparisons could also be extended to the Prince George Net Impressed ceramics from southern Virginia and the Culpepper ware in the Triassic Lowlands of the Piedmont; Culpepper ware is a sandstone tempered ceramic occasionally found in the Piedmont and is recognized by some archeologists working in Fairfax County, but has not been clearly defined in the literature. These wares or ware groups are circum-Chesapeake Bay in their geographic distribution, pointing to close interrelationships between the societies making these wares. All of these groups were undoubtedly participating in a growing Middle Woodland interaction sphere widespread throughout the James, Potomac, lower Susquehanna, Delaware, and even lower Hudson River Valleys.

Popes Creek ceramics developed into the shell tempered Mockley ceramics, a ware that has both net impressed and cord marked surfaces. Many, if not most, radiocarbon dates associated with Mockley ceramics bracket the ware between about AD 250/300 to approximately AD 800, after which it develops into the Late Woodland Townsend Ware. Why the shift from sand to shell tempering occurred is unknown, although it was widespread in the Middle Atlantic region. In the lower Potomac Valley, Mockley may have been tied to the intensive exploitation of oyster beds, a phenomenon first manifested in the earlier Popes Creek phase of the Middle Woodland period. Mockley ware exhibits relationships with the earlier Popes Creek ceramics and its cognate wares in basic attributes such as rim form, vessel shapes, and the range of vessel sizes (Barse 1990).

Thurman has termed the developmental trajectory of Mockley to Townsend the "Mockley continuum", a time span that saw gradual population growth and increasing village size leading up to the Late Woodland period (Thurman 1985). For the earlier end of this continuum, Potter (1993) has reported dates in the last 200 years of the final millennium BC for Mockley ceramics in the lower Potomac Valley in Virginia. The emergence of Mockley ware from Popes Creek was likely a gradual process, not a single historical event. It is also likely that, during this transition, both wares coexisted (as recognized archeologically), perhaps unevenly across the region. Both wares would have been contemporaneous at some point in this transition, as evidenced by their association in the large refuse pits excavated at the Fletchers Boathouse Site in Washington, D.C.

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(Barse 2002). At some point in the developmental trajectory, however, Mockley ware superseded the heavy, coarse, sand tempered Popes Creek ceramics and dominated the Middle Atlantic region.

Popes Creek and Mockley ware ceramics are not as common in Piedmont settings as they are in Coastal Plain settings where they are prevalent. Albemarle ceramics, bearing mostly cord marked exterior surfaces that show continuity with the earlier Accokeek ware, are commonly found in Middle Woodland contexts in the Potomac Piedmont. This ware was found associated with Mockley ceramics at the Fletchers Boathouse site in pit contexts (cf. Barse 2002) along with small quantities of Mockley and Popes Creek ceramics. Radiocarbon dates from several of the large pits at this site fall between 100 BC and AD 100, suggesting that Popes Creek was in the process of being replaced by the shell tempered Mockley ceramics. Albemarle is considered to be contemporary with both, though more commonly found in the Piedmont; as a ware it continued up to and perhaps into the Late Woodland period. Gardner and Walker (1993:4) suggested that fabric impressed wares become more common towards the end of the Middle Woodland period. This surface treatment is restricted to Albemarle wares though, and does not really occur on Mockley ceramics. Fabric impressing on shell tempered ceramics by default is identified as Townsend ware.

Lithic artifacts associated with Middle Woodland occupations frequently include side notched and parallel stemmed points manufactured from rhyolite, argillite, and Pennsylvania jasper. Such points are known as Fox Creek in the Delaware Valley and Selby Bay in the Chesapeake region. The Middle Woodland people also manufactured and used a stone axe called a celt, used for woodworking. The celt differed from the earlier axes because it was not grooved; rather, it was hafted into a socketed wooded handle.

Late Woodland (AD 1000 to AD 1606/European Contact)

The Late Woodland period begins around AD 1000, the result of a culmination in trends concerning subsistence practices, settlement patterns, and ceramic technology. A trend toward sedentism, evident in earlier periods, and a subsistence system emphasizing horticulture eventually led to a settlement pattern of floodplain village communities and dispersed hamlets reliant on an economy of both hunting and the planting of native cultigens.

In the early part of the Late Woodland, the temporally diagnostic ceramics in the Northern Virginia Piedmont region include Potomac Creek, Shepard, and, in the upper Coastal Plain, Townsend ware ceramics; as noted above, Townsend ware is a shell tempered ware that developed from Mockley. Shepard ceramics are likely an outgrowth of the Albemarle wares, given similar attributes of paste and surface treatment. The surfaces of the above noted wares are almost exclusively cord marked, with the exception of the fabric impressed Townsend series specimens. In most cases, the cord marked surfaces were smoothed prior to firing the vessel, in some cases nearly obliterating the

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surface treatment. This is a trend that seems to become more popular through the Late Woodland period.

In the Potomac Piedmont, the crushed rock wares are replaced by a shell tempered ware that spread out of the Shenandoah Valley to at least the mouth of the Monocacy River at about AD 1350-1400. Shell tempered Keyser ceramics, a downstream variant of the Late Woodland Monongahela ware common in the Upper Ohio River Valley, extend nearly to the Fall Line, although they are not found in Coastal Plain settings. Triangular projectile points indicating the use of the bow and arrow are often considered diagnostic of this period as well. However, triangular projectile points have also been recovered from well-defined and earlier contexts at regional sites such as the Abbot Farm site in central New Jersey, the Higgins site on the Inner Coastal Plain on Maryland's Western Shore, and the Pig Point site in Anne Arundel County, Maryland (MAC Lab 2012; Luckenbach et al. 2010). Additionally, triangular points have been found in context with Savanah River points in Fairfax County, although the context appears to have been mixed (Christopher Sperling, personal communication 2015).

The Late Woodland period is also marked by a marked increase in ceramic decoration. Most of the motifs are triangular in shape and applied by incising with a blunt-tipped stylus. The marked increase of ceramic decoration and the various design motifs on Late Woodland pottery compared to earlier periods likely reflect the need to define ethnic boundaries and possibly smaller kin sets. Neighboring groups that may have been in low level competition for arable riverine floodplains may have used varied embellishments of basic design elements to set themselves apart from one another. Additionally, in a noncompetitive setting, ceramic designs simply may have served to distinguish between individual social groups, as the region now sustained the highest population level of the prehistoric sequence. As such, ceramic design elements functioned as a symbolic means of communication among groups, serving as badges of ethnic identity or, perhaps, smaller intra-group symbols of identity.

As noted above, Late Woodland societies were largely sedentary with an economy relying on the growth of a variety of native cultigens. Late Woodland settlement choice reflects this horticultural focus in the selection of broad floodplain areas for settlement. This pattern was characteristic of the Piedmont as well as the Coastal Plain to the east and the Shenandoah Valley to the west (Gardner 1982; Kavanagh 1983). The uplands and other areas were also utilized, for it was here that wild resources would have been gathered. Smaller, non-ceramic yielding sites are found away from the major rivers (Hantman and Klein 1992; Stevens 1989).

Most of the functional categories of Late Woodland period sites away from major drainages are small base camps, transient, limited purpose camps, and quarries. Site frequency and size vary according to a number of factors, e.g., proximity to major rivers or streams, distribution of readily available surface water, and the presence of lithic raw material (Gardner 1987). Villages, hamlets, or any of the other more permanent categories of sites are rare to absent in the Piedmont inter-riverine uplands.

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Perhaps after AD 1400, with the effects of the Little Ice Age, an increased emphasis on hunting and gathering and either a decreased emphasis on horticulture or the need for additional arable land required a larger territory per group, and population pressures resulted in a greater occupation of the Outer Piedmont and Fall Line regions (Gardner 1991; Fiedel 1999; Miller and Walker n.d.). The 15th and 16th centuries were a time of population movement and disruption from the Ridge and Valley to the Piedmont and Coastal Plain. There appear to have been shifting socio-economic alliances over competition for resources and places in local exchange networks. Factors leading to competition for resources may have led to the development of more centralized forms of social organization characterized by incipiently ranked societies. Small chiefdoms appeared along major rivers at the Fall Line and in the Inner Coastal Plain at about this time. A Fall Line location was especially advantageous for controlling access to critical seasonal resources as well as being points of topographic constriction that facilitated controlling trade arteries (Potter 1993; Jirikowic 1999; Miller and Walker n.d.).

Historic Overview

Thunderbird Archeology conducted a Documentary Study on the Ramsey Homes property prior to the archeological evaluation fieldwork. The resulting report; *Documentary Study and Archeological Resource Assessment for Ramsey Homes, City of Alexandria, Virginia* (Carroll et al. 2016) was prepared and includes a more complete historic contextual study of the project area, as well as a broader contextual study of the history of public housing in the United States and Alexandria. Excerpts from that document are presented in the following text to provide the most relevant contextual information to the current investigation.

In 1785-86, the town of Alexandria expanded to include the study area. The new streets within the expanded area were named for Revolutionary War heroes including Greene, Lafayette, Jefferson, Patrick Henry, Washington and Wythe (Crowl 2002:124). The street grid in the expanded area was an extension of the original 1749 town grid, consisting of blocks containing two acres of ground which were frequently purchased by speculators. The sparsely-developed street grid of the late 18th century study area vicinity became the site of homes for wealthy businessmen of Alexandria as well as market gardens which supplied fruits and vegetables for the use of the town.

As Alexandra's economy transitioned from one based on tobacco to other products, the population in Alexandria increased as people moved into the town from outlying western areas to work as merchants, hotel proprietors, and cooks in local restaurants. Over the last decade of the 18th century, the population almost doubled compared to earlier decades, increasing from 2,746 in 1790 to 4,971 by 1800 (MacKay 1995:55). During the 1790s, due in part to turmoil in Europe associated with the French Revolution and the beginning of the Napoleonic Wars, Alexandria prospered as a major port for the exportation of American wheat. In 1791, the total value of the town's exports was $381,000, and four years later it had grown to $948,000 (MacKay 1995:55). From 1800 to 1820, Alexandria was fourth behind Baltimore, Philadelphia, and New York in wheat exports. With the shift from the tobacco economy to the wheat economy, occurring around the time

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Alexandria was ceded to the District of Columbia, enslaved laborers who were no longer needed on the outlying plantations were sold or hired out to businesses in Alexandria; many were manumitted and migrated to the City (Bloomburg 1998:62).

As the population increased in the District of Columbia and in Alexandria, small enclaves formed where free African Americans established their own communities. One such community was known as "Uptown" and became the largest of Alexandria's ten historical African-American communities. Although some free African Americans made their homes in Uptown prior to the Civil War, the settlement greatly expanded after the war with the influx of newly freed African Americans (Bloomburg 1998:73).

In 1834, the western half of the square bounded by Wythe, Alfred, Pendleton, and Patrick Streets that includes the project area consisted of two vacant parcels credited to Frances Swann and Samuel Snowden. In 1836, David Appich sold the eastern portion of the block to George Blish, where he was already residing and being taxed (Alexandria Deed Book X2:108); George Blish (occasionally referred to in deeds as George Bloach) is listed in Alexandria tax records as the occupant of the eastern half of the square by 1834. The deed from Appich explains that Blish, as a foreign-born non-citizen prior to 1836, was not able to own property in Alexandria and had an agreement with Appich to hold the property until Blish could legally purchase it. Also in 1836, Frances Swann sold the western half of the block including the study area to Blish, as well as the block immediately to the north (Alexandria Deed Book W2: 238; 239). George Blish resided on and maintained ownership of the block until 1849.

The tax records appear to be somewhat at odds with the recorded deeds for the property, as the tax records prior to 1836 list Swann and Snowden as proprietors of separate lots in the western half of the block, and Edgar Snowden, presumably an heir of the Samuel Snowden listed in 1834-35, continues to be taxed for a lot on the block until 1840, when George Blish is at last taxed for the entire square including his dwelling. Snowden's presence on the tax record for the block may reflect a lease from Swann, but there is no mention of the persistence of such an agreement in the deed from Swann to Blish, and Snowden appears as a proprietor and not a tenant of his lot. Regardless, according to deed records, George Blish owned the entire block bounded by Wythe, Alfred, Pendleton, and Patrick Streets by 1834 and according to tax records controlled the block by 1840, residing in a dwelling fronting on Alfred Street.

Personal property tax records for George Blish indicate that he was taxed for one titheable (himself) from 1834-1844; in 1845, he was responsible for two titheables, and for three in 1846-47, before returning to a single titheable in 1848. Blish was also taxed for two slaves every year between 1834 and 1849 except 1837, when he is taxed for one slave, and 1845, when he is taxed for three. Blish also owned varying numbers of horses and cows during his ownership of the property, as well as carts/drays.

The tax records of the preceding years indicated that Blish owned horses, cows, and a cart or carts, as well as his ownership of at least two blocks of land at the outskirts of Alexandria, which strongly suggests that Blish utilized his property (including the study

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area) as a market or truck garden that supplied the fruit and vegetable needs of the City of Alexandria. Although Blish sold the block that includes the study area in 1849, the 1850 census suggests that he continued in this occupation nearby on a different property. It is notable that every occupation listed on the same census page as Blish was "Farmer" or more commonly "Farmer & Gardener," indicating that the neighborhood in which Blish lived in that year was dominated by similar market garden enterprises. It is likely that Blish sold his property that includes the study area and moved further from the city center to resume his profession, as mid-century transportation enhancements including the Alexandria Canal and railroads increased prosperity and the demand for housing.

George Blish sold the property to Henry Daingerfield in 1849 (Alexandria Deed Book K3: 276). Henry Daingerfield was one of the wealthiest men in Alexandria at the mid-point of the 19th century; he was a merchant who owned significant portions of the waterfront as well as numerous other properties in and around the city, and served as president or board member of many companies or organizations including that of the Alexandria Canal and the Orange and Alexandria Railroad (Miller 1989; The Story of Ravensworth 2015).

Daingerfield did not personally occupy the lots that included the study area, as he resided at the corner of Prince and Columbus Streets in what is now known as the Swann-Daingerfield House. The purchase of the block was likely a real estate investment intended to take advantage of the increased demand for housing in Alexandria.

Tax records indicate that in 1849, Daingerfield leased the block including the study area to Aaron Knight, and in 1850-51, to John Foster. Thereafter, the property increased drastically in value from $1,600 in value in 1851 to $2,800 in 1852, in which year numerous tenants are recorded on the property. This increase in population on the property concurrent with the rise in value indicates that additional housing was constructed on the block; by 1854, when tax records indicate the presence of four houses on the block and give a value of $5,000 for the property. There is no indication in the tax records of the location of the dwellings within the block.

Daingerfield's purchase of the property appears to have ended the era of dedicated market gardening on the block by 1852. However, the presence of only four dwellings on the block suggests that one or more of the residents may have continued the practice in a reduced capacity, as a significant amount of ground would still have been available for horticulture. The tenant Michael McSherry was taxed for a horse, cows, and a dray/cart beginning in 1853 which suggests McSherry may have continued the cultivation of a portion of the block for the local market.

At the onset of the Civil War, the Union army occupied Alexandria due to its proximity to Washington, D.C. and its importance as a sea-land transportation hub, which could be utilized to transport men, equipment, and supplies for the prosecution of the war. During the occupation of the city, much of the regular commerce that had characterized Alexandria before the war faltered as Southern loyalists fled the town and their properties were commandeered for the Union war effort. The United States Office of the

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Quartermaster General (USQM) took over the waterfront and many homes and buildings in the city were occupied by soldiers either temporarily staged in the town awaiting deployment, or more permanently garrisoned as part of the quartermaster corps or manning the system of forts that defended the city.

Daingerfield was taxed for the square throughout the war years; however, the valuation of the property decreased significantly between 1861 and 1865. During the Civil War, Alexandria tax records ceased recording details regarding the number of dwellings on the block bounded by Wythe, Alfred, Pendleton, and Patrick Streets, possibly due to the presence of Union military buildings, detailed below.

The city block that included the study area was commandeered by the Union army to host the headquarters, barracks, and hospital facility of Battery H of the Pennsylvania Independent Light Artillery. The unit was formed in 1862 in Pittsburgh with John I. Nevin as captain, and was sent to Hagerstown, Maryland for two months before removing to Camp Barry, an artillery depot and training camp in Washington, DC. The battery spent its entire span manning the defenses of the District, moving from Camp Barry to garrison Alexandria from March 1863 until the end of the war in 1865 (American Civil War Archive 2016).

In a communique dated October 14, 1864, J. H. Taylor, Chief of Staff and Assistant Adjutant-General, Department of Washington, 22nd Army Corps, informed Major-General Augur that he had "authorized General Slough [the military governor of Alexandria, Virginia] to arm with rifles the surplus men of Battery H, Independent Pennsylvania Artillery, and use them as train guards" (OR 1893:366). Train guard duty consisted of protecting military supply wagon trains from the depredations of guerilla attacks or cavalry raids of the sort frequently employed by Colonel John Mosby in Northern Virginia. Battery H suffered no men injured or killed in combat during the war. Of the seven men the unit lost to disease, Private August Mentre died in Alexandria on August 2, 1863. The other six unfortunate men succumbed in Pittsburgh, Hagerstown, and Camp Barry (Gayley 2015).

Maps of all property and buildings in Alexandria utilized by the army were made by the USQM. The USQM map of the block bounded by Wythe, Alfred, Pendleton, and Patrick (Exhibit 4) indicates that the frame buildings depicted were constructed in 1863 for the use of Battery H by the quartermaster corps, and include a two story headquarters building on Patrick Street with single story wings on the north, south, and west and a large veranda on the east elevation, two barracks buildings measuring 20 x 60 feet, a kitchen, a blacksmith, a large stable fronting on Alfred Street, a small hospital building on Pendleton, and a building marked "Sutlers, Private" in the southwestern quadrant of the block. A vegetable garden and landscaping surround the headquarters building and the space between the barracks, and several "sinks," or privies, are located at the edges of the block.

The hospital building centrally located along Pendleton Street is of relatively small size. This hospital was most likely a post hospital that specifically served the men of Battery H

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who were too injured or ill for duty but not in dire enough straits to be sent to one of the several general hospitals in Alexandria or Washington; this hospital would have been under the direct control of the commanding military officer of the battery and not part of the military hospital organization, which was headed by the Surgeon General (Lawrence et al. 2015). Given the apparently healthy condition of Battery H during its sojourn in Alexandria, the hospital may have been little-used unless it was pressed into general service during periods of widespread sickness in the Alexandria garrisons or after the wounded from battles in other theatres of the war were transported to the city. The map indicates "hospital tents" to the north of the hospital building, which may illustrate an expandable capacity for the facility.

Hospital tents typically had elevated wooden floors with trenches around the base to drain water from beneath and around the tent (Wally Owen personal communication 2015; Geier and Potter 2000: 151). This arrangement allowed for good air circulation, which was considered essential by many surgeons of the time who believed that infection and disease was spread by bad air and noxious odors (Geier and Potter 2000: 151). The hospital building shown on the USQM map was likely used as offices or storage and patients were treated and convalesced in the ventilated tents. During the winter, the tents may have been heated by small heating stoves, or possibly by a Crimean oven. A Crimean oven consisted of a firebox in a pit outside of the tent, which was connected to a trench running through the tent or series of tents and was vented through an external chimney at the far end; the radiant heat from the hot air flowing through the trench, roofed with metal or stone slabs, warmed the tents while admitting little smoke. A Crimean oven was documented archaeologically at 206 North Quaker Lane in Alexandria, Virginia (Jirikowic et al. 2004).

A building used by a sutler was also noted on the USQM map. A sutler was a civilian merchant licensed by the U.S. military to supply goods and services to soldiers, filling the role later occupied by canteens and exchanges. Although providing much-needed goods to soldiers, sutlers had a checkered reputation, were looked upon unfavorably by the U.S. Quartermaster General and other highly-placed individuals responsible for keeping the military supplied, and were the subject of frequent changes in regulations regarding the manner of their selection and licensing, what articles they could sell, and how they were allowed to transport and distribute their goods.

Each regiment or discreet detached unit of the army, such as Battery H of the Pennsylvania Light Artillery, was allowed one licensed sutler to serve the needs of the soldiery. Although by regulations in effect early in the war sutler's licenses were ostensibly to be given out by regimental administrative councils, it appears that many were appointed by higher division officers, by state governors or other officials for political favors, or in some cases licenses were purchased outright (Spear 1970: 121-122).

A unit's sutler did not enjoy a position in the military chain of command, but was an official civilian contractor attached to the unit which provided them an effective monopoly on the trade of the unit's soldiers, as well as direct access to the paymaster to

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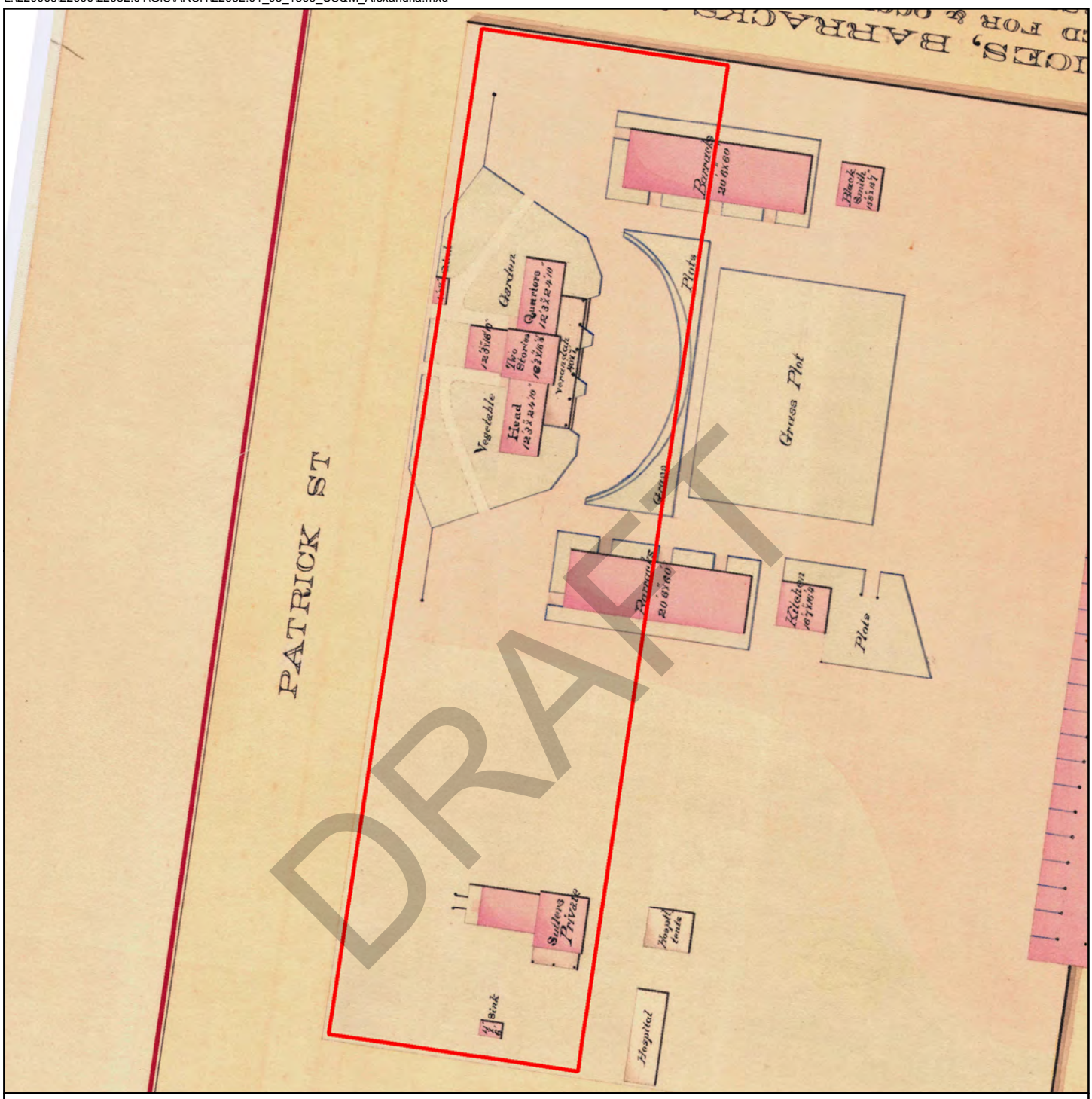

Approximate Location of Study Area

Map Source: U.S. Quartermaster Corps. 1865. "Wharfs Storehouses Etc."
Series: Post and Reservation Maps, compiled 1820 – 1905;
Record Group 92: Records of the Office of the Quartermaster General, 1774 – 1985;
National Archives and Records Administration (NARA).

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Exhibit 4
U.S. Quartermaster Corps Map 1865

collect money due on account when pay was distributed (Spear 1970: 130; Lord 1969: 34-35).

Sutlers sold an astonishing array of goods to soldiers. Although the army issued uniform clothing, basic mess kits, and a ration of food, these items inevitably wore out, got misplaced or stolen, or proved inadequate. Goods officially approved for sale by sutlers included uniforms and other clothing; toiletries; games and other amusements such as playing cards, checker boards, etc.; pens, ink, and stationery; books and newspapers; mending kits; dishes and cookware; knives; blankets; candles; and matches (Lord 1969: 39).

Food, condiments, and tobacco, represented the majority of a typical sutler's sales (Billings 1887: 224). The military supplied a daily ration of hard tack and preserved pork or beef, all of which was frequently of sub-standard quality. The fresh and canned fruits and vegetables, pickles, flour, bread, cheese, butter, sardines, mustard, and other foodstuffs sold by sutlers were a welcome and necessary addition to the soldier's diet. Even the infamous sutler's pies, "moist and indigestible below, tough and indestructible above, with untold horrors within" (Billings 1887: 227), were often attractive to the soldier whose other choices were to eat the inedible army rations or go hungry (Lord 1969: 41).

Most sutlers did not restrict themselves to selling items on the list of government-approved merchandise, and nearly anything that soldiers (and frequently the local civilian population) would buy might be found in a sutler's stock, from pistols to bibles to hoop skirts (Spear 1970: 127). Sutlers also frequently engaged in the sale of contraband, particularly alcohol, often with the approval or even the assistance of unit officers (Spear 1970: 128-129, 132).

The sutler's shop not only supplied the soldiers' material needs, but also frequently became the social center of camp life where soldiers gathered to eat, gossip, or otherwise pass the time (Spear 1970: 123). However, despite the central role sutlers played in making a soldier's life bearable, they were frequently maligned by soldiers of all ranks. Sutlers enjoyed a monopoly within their assigned unit, and went to considerable trouble and risk to keep their shops supplied in time of war; even the least greedy of them charged high prices, and for many, their sole concern in their enterprise was to make as much profit as possible. The result was exorbitant prices sometimes reaching five or ten times the market price for items in demand (Spear 1970: 129-130), and the men who were forced to patronize them resented this daylight robbery. Particularly in the camps of armies in the field, sutlers' tents were frequently subject to pilfering and raids by soldiers pushed beyond endurance by the high prices, and any misfortune that befell a sutler or his stock was generally felt to be well-deserved (Spear 1970: 136-138).

The sutler for Battery H may have differed in some measure from the typical sutler recorded in Civil War history due to his location at a stationary post in an urban area which would have denied him his monopoly, making him more subject to market forces than the roving sutlers who followed units in the field. However, his location adjacent to

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the barracks and headquarters of the unit likely placed him in a favorable and convenient position to sell to the troops and his shop likely served as a gathering place for soldiers of the battery. The identity of the sutler remains unknown, as they were not featured on unit muster lists and the Battery H sutler does not appear on a list of known sutlers compiled by Francis A. Lord (1969).

If the USQM map is an accurate record of the buildings on the property, then it appears likely that George Blish's former dwelling on Alfred Street and several of the multiple dwellings built by Daingerfield were demolished prior to the military construction. It is likely that the dwelling in use by the sutler was a remnant of the pre-war buildings, and possible that the two story core of the headquarters building is a second re-purposed pre-war building. The other two of the four pre-war buildings likely stood in the northeast and southeast quarters of the block and appear to be no longer extant as of 1865.

A second map depicting the locations of buildings within the block was produced in 1864 (Exhibit 5). Buildings are shown in the approximate locations of the headquarters, sutler, and stable illustrated in the USQM map, but the footprints depicted do not match those on the military map, in particular the lack of wings on the building in the headquarters location, and the appearance of two conjoined buildings along Alfred Street in the location of the stables. This 1864 plan map may simply be inaccurate or lack the necessary resolution of detail; it is also possible that the map depicts the pre-war configuration of buildings on the block. The sparse density of buildings in this quarter of Alexandria is clearly depicted on this map, suggesting that Daingerfield may have been one of relatively few to attempt increased residential development of the area prior to the outbreak of the war.

After the close of the Civil War, the USQM returned control of the study property to Henry Daingerfield, who died intestate the following year. His properties were divided among his widow and children according to the decree of the chancery court in 1870. The block including the study area was part of the properties received by daughter Ellen C. Daingerfield in the 1870 chancery decree, however the property continued to be associated with Henry Daingerfield's estate in tax records until 1873.

Until after 1870, the development of the Parker Gray neighborhood surrounding the project site was not unified or coherent; the area had yet to develop the cohesive character that is seen in later times (Necciai and Drumond 2007:7-2). Approximately 80-90% of the platted land north of Princess Street contained no permanent buildings until at least a decade after the Civil War, although some individual blocks contained a large residence or a few smaller ones (Necciai and Drumond 2007:7-2). The area was characterized by a "patchwork of different kinds of buildings and structures with open land at the center and smaller residential enclaves at the fringes" (Necciai and Drumond 2007:7-4). In addition, few institutional buildings were present prior to 1880.

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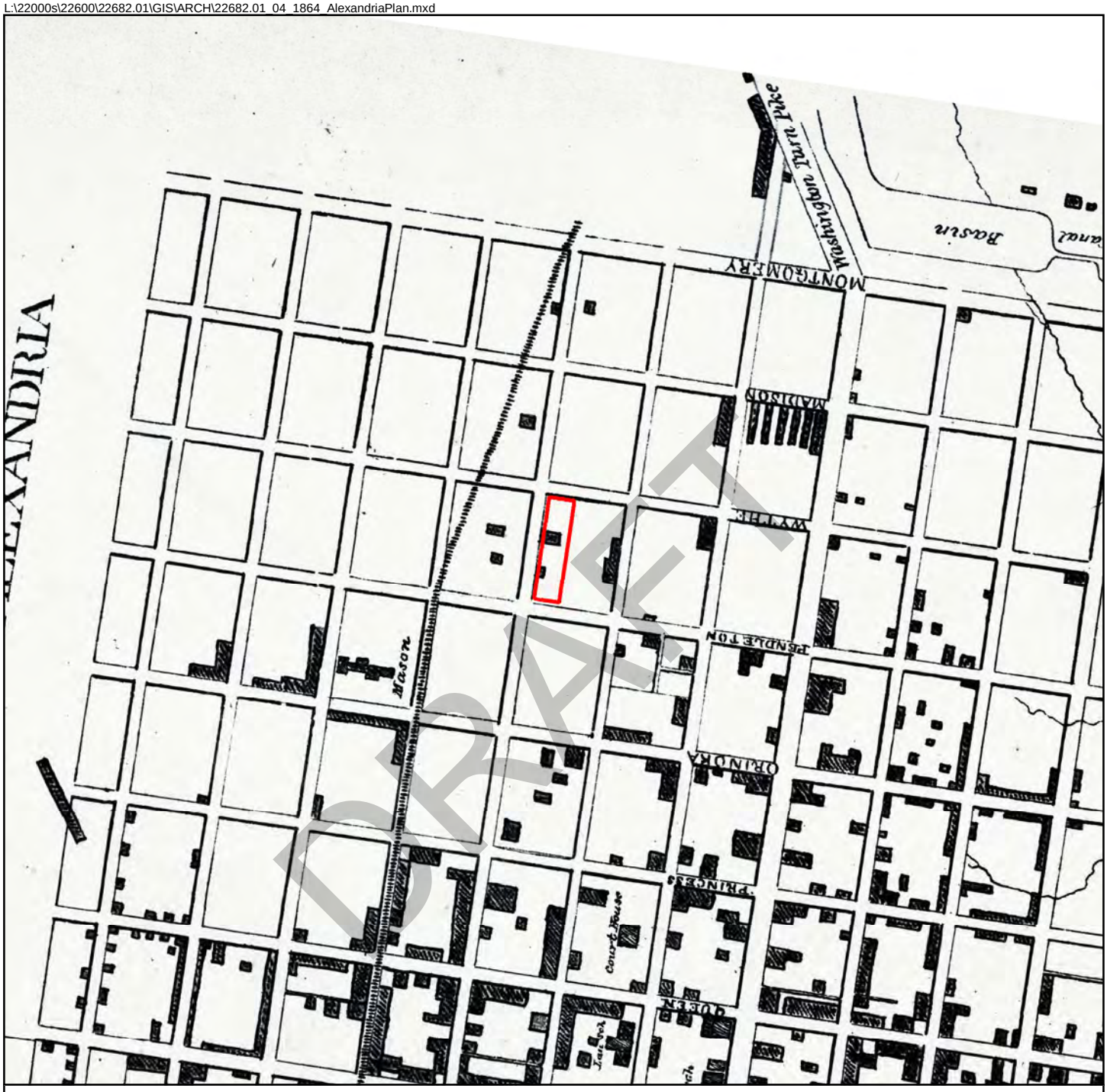

Approximate Location of Project Area

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Map Source: Image from NOAA's Office of Coast Survey Historical Map & Chart Collection: http://historicalcharts.noaa.gov

Exhibit 5
1864 Plan of Alexandria, Virginia

Hopkins' 1877 map (Exhibit 6) identifies the study area as a part of Henry Daingerfield's estate, and depicts four buildings on the block, two of which stand at least partially within the study area. The buildings shown appear to correspond to the Battery H headquarters and the building associated with a sutler on the USQM map. Interestingly, the headquarters building is shown as lying partly within Wythe Street. If accurate, this location speaks to the largely undeveloped nature of the study area vicinity in the mid-19th century. Henry Daingerfield owned the squares on either side of this section of Wythe Street, which likely was a proposed or paper street in the 1850s when Daingerfield built several dwellings on his property. Daingerfield may have ignored the Wythe Street right-of-way when building on his property, possibly with the formal or informal blessing of the city. It is also possible that Daingerfield respected the official lot boundaries and the military construction of 1863 chose to intrude onto the Wythe Street right-of-way, either through constructing the north wing onto an existing two-story dwelling fronting on Wythe Street, or through the construction of the entirety of the offending headquarters building.

In 1880, tax records indicate that one house stood on the square that includes the study area, but the specific location of the dwelling is unknown. Ellen Daingerfield apparently continued to rent out the dwelling on the square throughout the 1880s. In 1892, Daingerfield sold the square including the study area as well as the square immediately to the north to Noble Lindsey, Samuel Fisher, and George Fisher. Noble Lindsey was vested with an undivided 50% interest in the property, while the Fishers each received 25% (Alexandria Deed Book 27: 240). In 1895, the Fishers deeded their interest in the block containing the study area to Lindsey in exchange for Lindsey's share of the block to the north, making Lyndsey the sole owner of the study area (Alexandria Deed Book 33: 514; 515).

During the early 20th century, housing in the vicinity of the project area appears to have been somewhat integrated as new residents were attracted by employment opportunities, for both blacks and whites, associated with the railroad and industrial development. Northwest of the project area, the Belle Pre Bottle Company and the Alexandria Glass Company were located on Madison and Montgomery Streets, and warehouses stood along the railroad and North Fayette Street (Necciai and Drumond 2007:8-335).

A number of individual houses were built in the area at this time. Many European immigrants located in the neighborhood, continuing a tradition that had been in place since the mid-19th century when approximately 60% of the residents along North Columbus and Alfred Streets, near their junction with Oronoco and Wythe Streets, were Irish immigrants (Necciai and Drumond 2007:8-335). By the 1930s, the same area was home to a diverse population of African Americans and both recent and descendant German and Italian immigrants.

Noble Lyndsey maintained ownership of the study area until 1914, when a decree was issued in chancery during the settling of his estate to sell the block for cash. The property was sold to the Real Estate and Investment Corporation of Virginia for $5,500 (Alexandria Deed Book 63: 553). The Real Estate and Investment Corporation in turn

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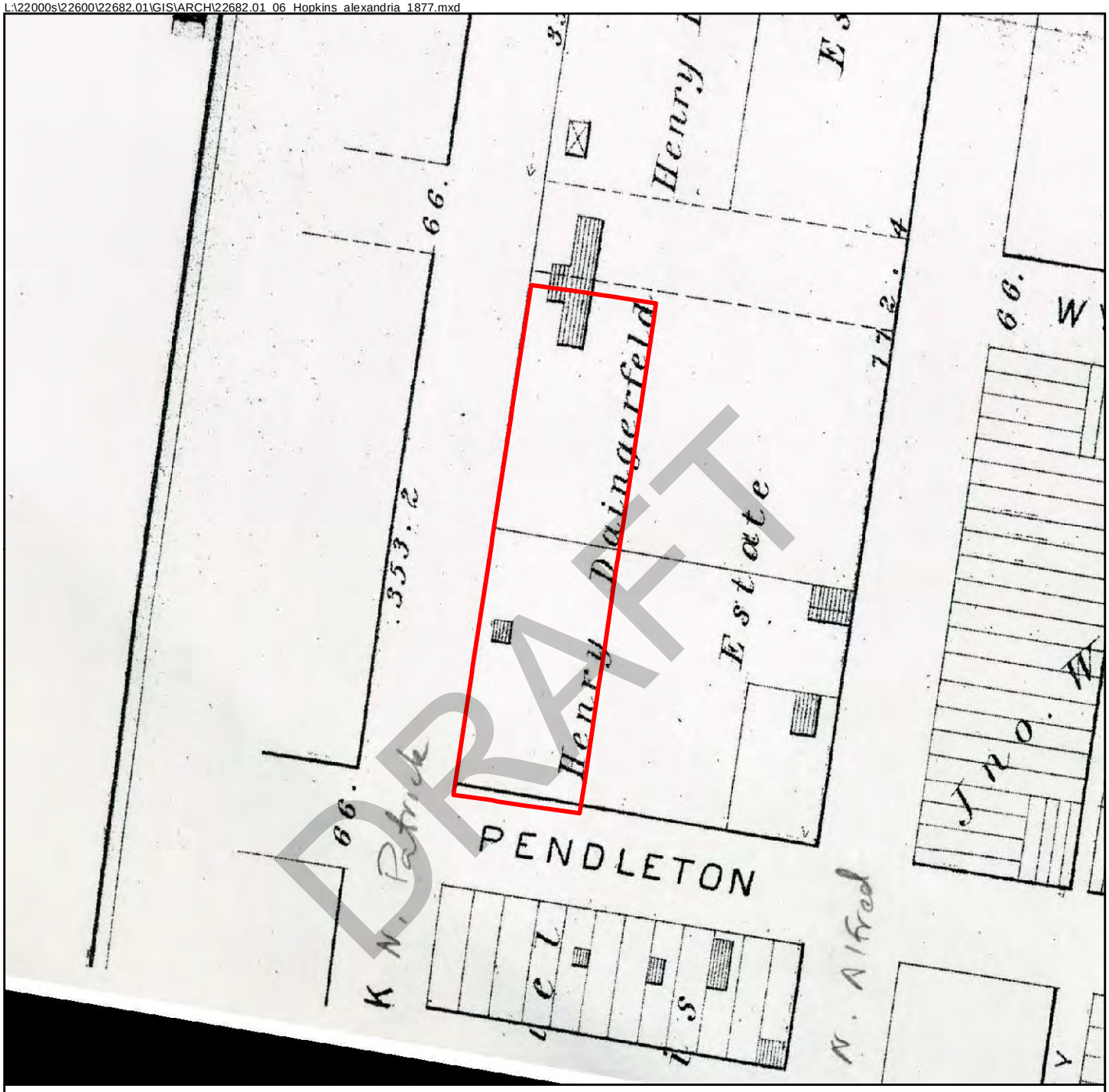

Approximate Location of Project Area

Map Source: "Alexandria County, Virginia". From G.M.Hopkins' Atlas of Fifteen Miles Around Washington, D.C., 1877". Library of Congress, Geography and Mapping Department.

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Original Scale: 1 " = 100 '

Exhibit 6
1877 Hopkins Map
Alexandria, Virginia

sold the property to Charles W. King in 1919 for $8,000 (Alexandria Deed Book 69: 135). By 1921, the block was vacant (Exhibit 7). In 1923, Charles King sold the property to his grocery wholesale company, Chas. King & Son (Alexandria Deed Book 76: 110). Also in that year, the block was surveyed for subdivision and soon thereafter lots were sold for development (Alexandria Deed Book 76:242). Although the eastern and central portions of the block were developed, the western third of the block comprising the study area was sold to four buyers who left it vacant (Exhibit 8).

By 1941, the United States Housing Authority (USHA) began to plan for the construction of permanent housing for African-American defense workers in the Uptown neighborhood. By November 30, 1942 six units were occupied, eight units were available, and one unit was incomplete (NHA 1942). In 1947, the Negro Yearbook contained a table of Permanent Public Housing Projects Making Provision for Negro Tenants as July 31, 1945, which included Ramsey Homes (Guzman et al.). On July 26, 1951 the Federal Public Housing Authority (PHA) entered into a contract with the Alexandria Housing Authority, currently the Alexandria Redevelopment and Housing Authority, for conveyance of low-rent housing "after the termination of the use of the project as defense housing during the Korean emergency" (United States 1956:48). On April 30, 1953 the Alexandria Redevelopment and Housing purchased the Ramsey Homes from the PHA (Alexandria Deed Book 356:407).

Uptown (Parker-Gray Historic District)

As mentioned above, the project area is located within the bounds of the historically African-American community known as *Uptown*. The Uptown neighborhood began as a small cluster of African American homes in the antebellum period. Uptown was the first black neighborhood settled north of King Street and, along with the Berg (the second black neighborhood to form north of King Street), expanded significantly during and after the Civil War as newly emancipated African-Americans migrated to Alexandria (Office of Historic Alexandria n.d.; Bloomburg 1998: 73).

Originally much smaller than the city's older black communities, the Bottoms and Hayti, Uptown grew into the largest African-American neighborhood in the city, eventually occupying 24 city blocks. The center of the neighborhood was at the intersection of North Henry and Oronoco Streets; North West Street forms its western border, Montgomery Street its northern border, North Columbus Street its eastern border, and Cameron Street its southern border. The Uptown neighborhood is now the Parker-Gray Historic District (DHR No. 100-0133).

Three or four small enclaves of African American owned homes had developed in the area by the mid-19th century. One of these, located near the intersection of Cameron and Patrick Streets, was home to a group of free African American families by 1810. Although the various enclaves in this area developed separate neighborhood identities at times, they eventually grew together into one larger neighborhood (National Register of Historic Places Parker-Gray PIF). Over time, the Uptown area became increasingly intertwined with and attracted some persons and institutions from Alexandria's older

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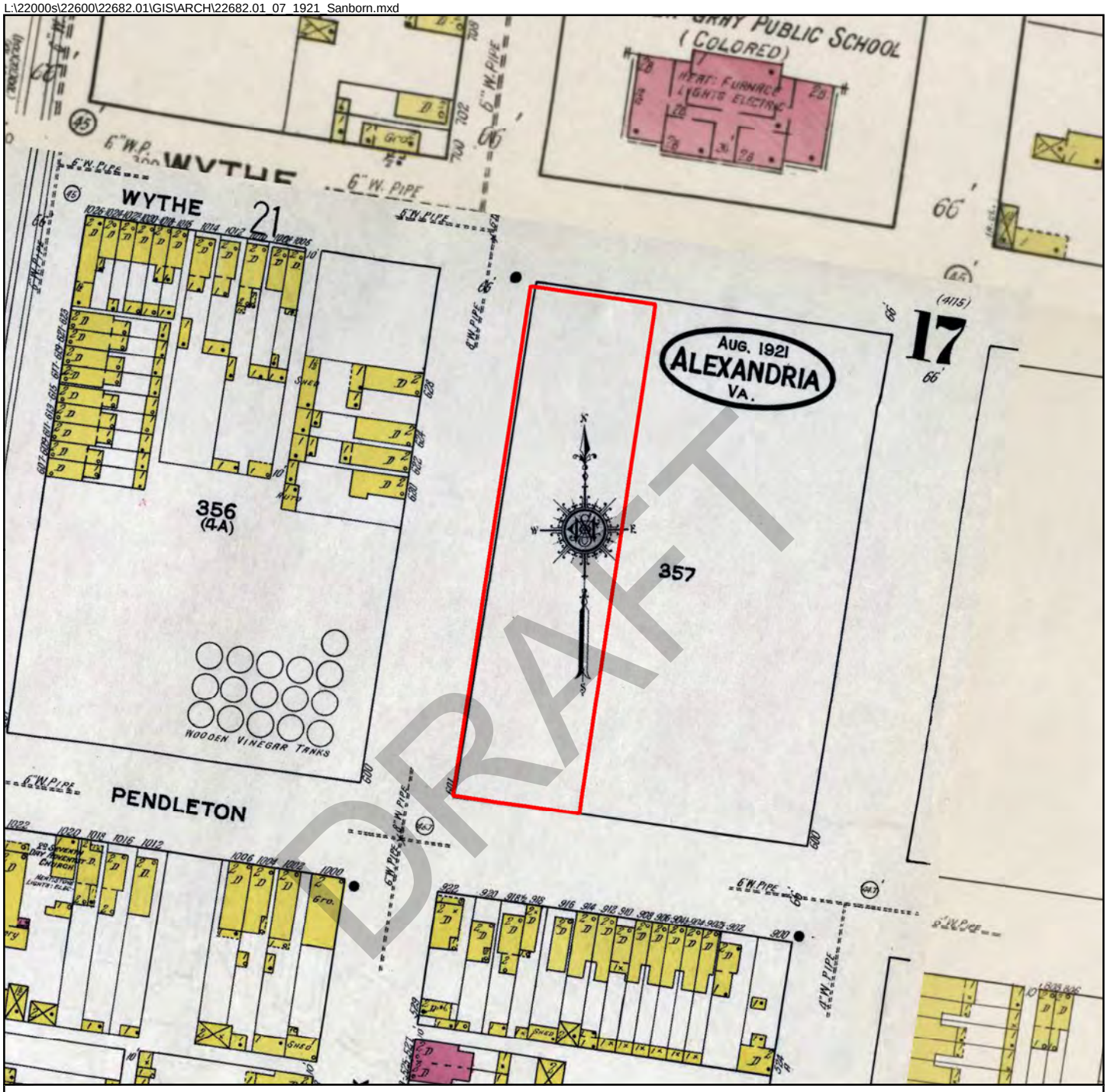

Approximate Location of Study Area

Map Source: "Sanborn Fire Insurance Map from Alexandria, Independent Cities, Virginia." Sanborn Map Company, August 1921. Sheet 17. Library of Congress Geography and Map Division Washington, D.C.

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Exhibit 7
1921 Sanborn Fire Insurance Map of Alexandria

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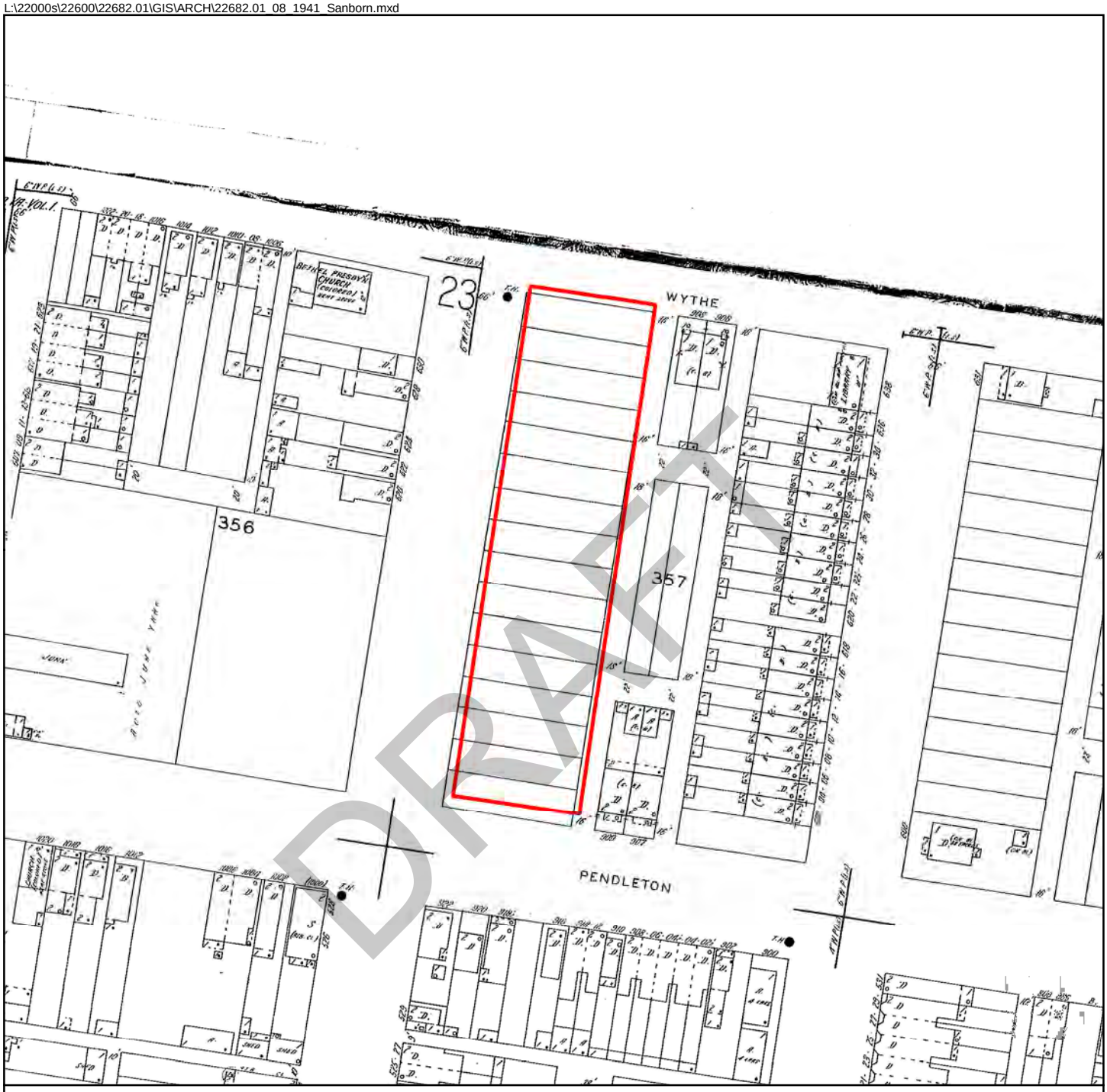

Approximate Location of Study Area

Map Source: "Sanborn Fire Insurance Map from Alexandria, Independent Cities, Virginia." Sanborn Map Company, 1941. Sheet 21. Library of Congress Geography and Map Division Washington, D.C.

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Exhibit 8
1941 Sanborn Fire Insurance Map of Alexandria

African American communities. By the early 20th century, the Uptown/Parker-Gray Historic District became home to African American institutions that served African Americans from across the city, including private clubs and segregated schools and libraries (National Register of Historic Places Parker-Gray PIF).

As the Uptown neighborhood grew, the demand for education for local African American children resulted in the creation of the Snowden and Hallowell schools, the city's first black public schools. John Parker was the first principal of the Snowden School for boys, and Sarah Gray was the first principal of Hallowell School for girls, and they are the namesakes of the Parker-Gray Historic District. Both schools were in operation by 1915, though the Snowden School for Boys burned down in 1915(National Register of Historic Places Parker-Gray PIF). In 1920 the schools were consolidated into the Parker-Gray School, located on Wythe Street (Office of Historic Alexandria n.d.). Always poorly funded and overcrowded, Parker-Gray was subsidized by its community, which donated chairs and other equipment. Eventually the school expanded to include high school students, became accredited and, in the 1940s, began sending graduates on to college (Office of Historic Alexandria n.d.).

By the second quarter of the 20th century, Uptown became the city's largest African American neighborhood. During this period, cultural attitudes toward race and official policies concerning segregation led to greater separation between Alexandria's white and black neighborhoods. Within Uptown, new, largely segregated, institutions were built for African American citizens by the city government, various philanthropists, and the African American community itself. By the late 1930s, the city government and various philanthropists were building educational and recreational facilities in the area for the growing African American community. These included the Alexandria Boys Club, built at 401 North Payne Street in 1936 and the Robert Robinson Library built at 638 North Alfred Street in 1940. Two recreation center buildings built to serve as USO clubs during World War II were built, one at 1005 Pendleton Street and another (still in existence as part of Jefferson-Houston School) at 1605 Cameron Street (Office of Historic Alexandria n.d.).

In 1950, the Parker-Gray High School was relocated to 1207 Madison Street. The old school building on Wythe Street was then renamed Charles Houston Elementary School. Parker-Gray was the only school for African-American high school students in the city until 1965. The Parker-Gray school closed its doors in 1979.

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PREVIOUS ARCHEOLOGICAL RESEARCH

The following inventory of previously recorded cultural resources within and near the project area was established by using the Virginia Department of Historic Resources' (DHRs) online Virginia Cultural Resource Information System (V-CRIS), as well as examining cultural resource files and reports at the Thunderbird Archeology office in Gainesville, Virginia.

The project area is located within the Uptown/Parker-Gray Historic District (DHR No. 100-0133), which includes nearly 1,000 contributing buildings. According to the DHR resource form, the "Historic District covers over 45 blocks in the northwestern quadrant of Old Town Alexandria…[and] consists mainly of small row houses and town homes built in the mid-to-late nineteenth century which continue to maintain a high level of historic integrity and feeling." In 2008 and 2010, the Uptown/Parker-Gray Historic District was listed on the Virginia Landmarks Register (VLR) and the National Register of Historic Place (NRHP), respectively.

Seven architectural resources (DHR Nos. 100-0133-1328, 100-0133-0754, 100-0133-0751, 100-0133-0747, 100-0133-0749, 100-0133-0745, and 100-0133-0948) and one archeological site (44AX0160) have been recorded within the current project area. The seven architectural resources represent the Ramsey Homes buildings, which are a set of four American Foursquare house forms containing multiple units (three contain four units and one has three units) and were built as public housing in 1942. A detailed discussion of these seven architectural resources, along with others within the historic district near the project area, are presented under separate covers (Carroll et al. 2016; Maas 2016).

Site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. A formal report detailing and interpreting the excavations was not available at the time of this writing; however, an examination of the field data from the 1991 excavations indicated that seven test pits measuring approximately 1.5 feet were excavated within the project area: six test pits were excavated on a transect located along the eastern portion of the project area and one was excavated in the northwestern portion of the site (Exhibit 9). According to the DHR site form, the test pits were placed to investigate structures indicated on the 1865 United States Office of the Quartermaster General Map (see Exhibit 4). The 1991 investigation identified a possible cobble path (in ST8), a hard clay surface interpreted as a possible road (in ST9), and an artifact assemblage of domestic artifacts dating to the 19th century. The resource has not been evaluated for eligibility to the NRHP.

In addition to the abovementioned archeological site located within the project area, 12 archeological sites have been previously recorded within the limits of the Parker-Gray (Table 1). The sites within the district included three Revolutionary War campsites identified through desk-based map reconnaissance, six dwellings dating to the 19th and 20th centuries, one factory dating to the 20th century, and one store dating to the 20th century. Ten sites have not been evaluated for listing on the NRHP and two have been determined not eligible for listing.

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Table 1: Previously Recorded Archeological Sites within the Uptown/Parker-Gray Historic District

DHR SITE NUMBER	SITE TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
44AX0083	Single dwelling	19th century: 2nd half/20th century: 1st quarter	Not evaluated
44AX0145	Single dwelling/Store	Unknown	Not evaluated
44AX0160	**Military base/facility**	**19th century: 2nd half**	**Not evaluated**
44AX0197	Single dwelling	18th century: 4th quarter/19th/20th century	Not evaluated
44AX0208-0001	Temporary camp	18th century: 4th quarter	Not evaluated
44AX0208-0002	Temporary camp	18th century: 4th quarter	Not evaluated
44AX0209	Temporary camp	18th century: 4th quarter	Not evaluated
44AX0214	Multiple dwelling	19th century/20th century: 1st half	Not eligible
44AX0215	Factory	20th century: 1st half	Not evaluated
44AX0217	Store	20th century: 2nd/3rd quarter	Not eligible
44AX0219	Multiple dwelling, meat house	19th/20th century	Not evaluated
44AX0221	Lithic scatter; trash scatter	Prehistoric/Unknown; historic/unknown	Not evaluated
44AX0224	Multiple dwelling	19th century/20th century: 1st half	Not eligible

Resource in bold is located within the project area.

RESEARCH DESIGN

Research Objectives

The purpose of the survey was to locate and record any unknown cultural resources within the impact area and to provide a preliminary assessment of their potential significance in terms of eligibility for inclusion on the NRHP. Additionally, the purpose of the survey was to evaluate the previously recorded site 44AX0160 for listing on the NRHP. As codified in *36 CFR 60.4*, the four criteria applied in the evaluation of significant cultural resources to the NRHP are:

A. Association with events that have made a significant contribution to the broad patterns of our history; or
B. Association with the lives of significant persons in or past; or
C. Representative of a type, period, or method of construction, or that represent the work of a master; or
D. Have yielded or may be likely to yield information important in history or prehistory.

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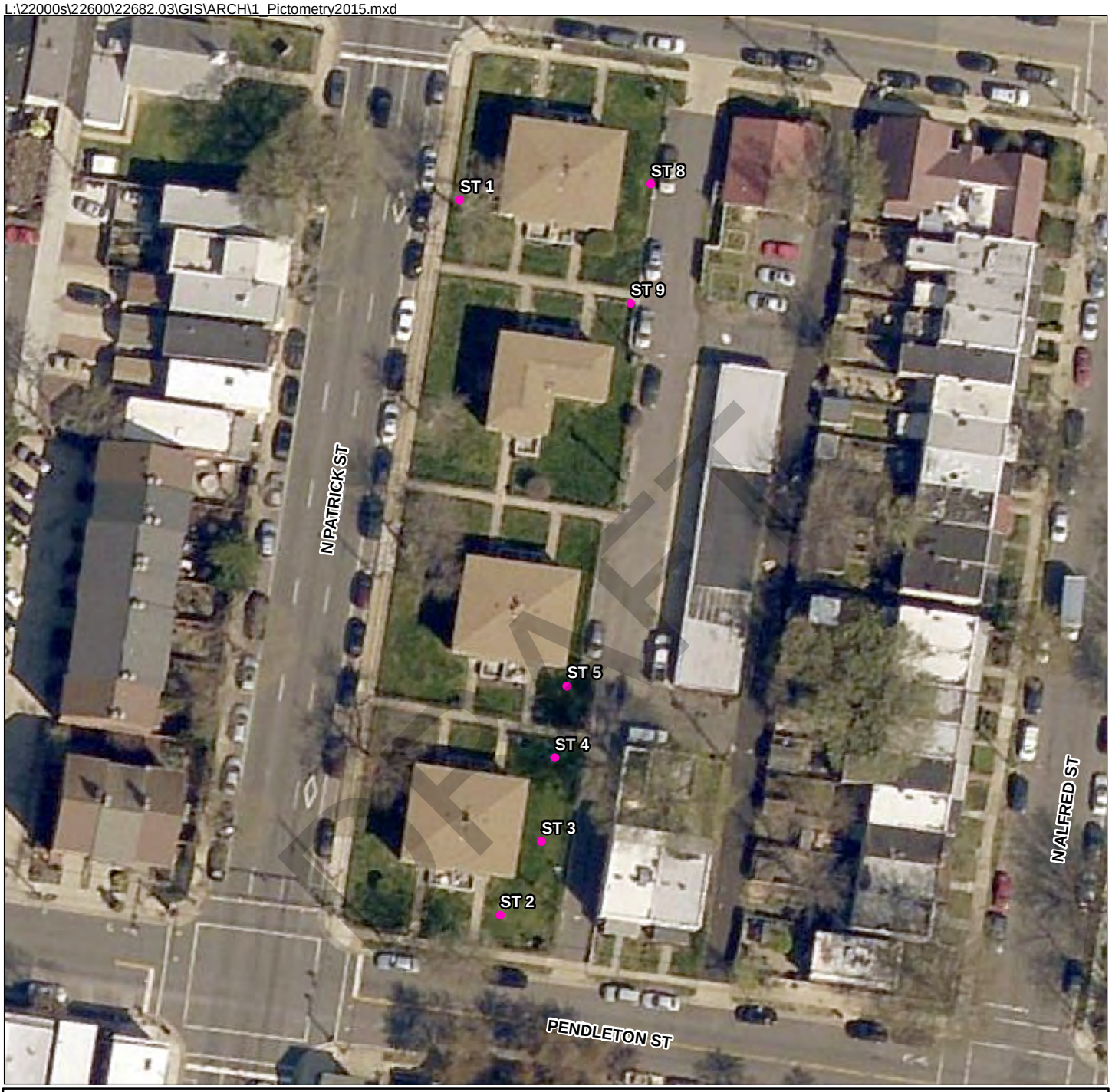

- Previous Test Pits*

*Locational Data Provided by Alexandria Archaeology

Photo Source: Pictometry®

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Original Scale: 1" = 60'

Exhibit 9
Location of 1991 Alexandria Archaeology Test Pits

Archeological sites are typically evaluated using only Criterion D, and must show enough integrity to be able to yield significant information and answer research hypotheses in history and/or prehistory. While the evaluation of archeological sites under Criteria A, B, and C will be considered if necessitated by specific site conditions, characteristics, and/or contexts, NRHP eligibility recommendations for sites in this report will be considered using Criterion D, unless otherwise indicated in the following text.

Archeological Evaluation Methodology

Archeological Fieldwork Methodology

The field methodology included both the use of surface reconnaissance and shovel testing to locate and define boundaries of archeological sites and to evaluate the vertical integrity of the previously recorded site located within the project area. The surface reconnaissance consisted of a walkover and complete visual inspection of the ground surface of the project area for the presence of artifacts, disturbances, features, etc. Shovel test pits were excavated at 20-25 foot intervals within the greenspace surrounding the four extant Ramsey Homes buildings. Shovel test pits measured at least 15 inches in diameter and were excavated in natural or cultural soil horizons, depending upon the specific field conditions. Excavations ceased when gleyed soils, gravel, water, or well developed B horizons too old for human occupation were reached. All excavated soils were screened through 1/4-inch mesh hardware cloth screens and were classified and recorded according to standard pedological designations (A, Ap, B, C, etc.); excepting the terms Fill and Fill horizon, which are used to describe culturally modified, disturbed, or transported sediments and soils. The use of these terms is consistent with use in standard geomorphological studies and recordation of geo-boring profiles in environmental studies. Soil colors were described using Munsell Soil Color Chart designations and soil textures were described using the United States Department of Agriculture soil texture triangle. Artifacts recovered during shovel testing program were bagged and labeled by unit number and soil horizon.

The archeological evaluation fieldwork also included the excavation of test units measuring 3 foot by 3 foot. Similar to the STPs, the test units were excavated in natural or cultural soil horizons and all excavated soils were screened through 1/4-inch mesh hardware cloth screens. The test unit soils were classified and recorded according to standard pedological designations. Soil colors were described using Munsell Soil Color Chart designations and soil textures were described using the United States Department of Agriculture soil texture triangle. Artifacts recovered during test unit excavations were bagged and labeled by unit number and soil horizon. Per the approved Scope of Work (Appendix I), all clearly modern fill horizons and/or modern surface soil were discarded without screening.

The location of each shovel test pit and test unit was mapped; unless otherwise noted, the graphic representation of the test pits and other features depicted in this report are not to scale and their field location is approximate.

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Laboratory Methodology

All artifacts were cleaned, inventoried, and curated. Historic artifacts were separated into four basic categories: glass, metal, ceramics, and miscellaneous. The ceramics were identified as to ware type, method of decoration, and separated into established types, following South (1977), Miller (1992) and Magid (1990). All glass was examined for color, method of manufacture, function, etc., and dated primarily on the basis of method of manufacture when the method could be determined (Hurst 1990). Metal and miscellaneous artifacts were generally described; the determination of a beginning date is sometimes possible, as in the case of nails. Unless otherwise noted, a representative sample of recovered brick and oyster shell was retained for curation; the remainder were discarded after being counted and weighed.

The prehistoric artifacts were classified by cultural historical and functional types and lithic material. In addition, the debitage was studied for the presence of striking platforms and cortex, wholeness, quantity of flaking scars, signs of thermal alteration, size, and presence or absence of use. Chunks are fragments of lithic debitage which, although they appear to be culturally modified, do not exhibit clear flake or core morphology.

Artifacts were entered into a Structured Query Language (SQL) Server database in order to record all aspects of an artifact description. For each artifact, up to 48 different attributes are measured and recorded in the database. Once entered in the SQL Server database, users can create queries and reports through a Microsoft Access front end. Several pre-existing report templates are available, or users can create custom queries and reports for complex and unique analyses. The use of a relational database system to store artifact data permits a huge variety of options when storing and analyzing data. A complete inventory of all the artifacts recovered can be found in Appendix II of this report.

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Research Expectations

A detailed assessment of potential archeological resources within the project area is presented within the report entitled *Documentary Study and Archeological Resource Assessment for Ramsey Homes, City of Alexandria, Virginia* (Carroll et al. 2016). The following presents a summary of that assessment, based on archival research and previous archeological research.

The probability for locating prehistoric sites generally depends on the variables of topography, proximity to water, and internal drainage. Sites are more likely on well-drained landforms of low relief in close proximity to water. Although few previously identified prehistoric sites have been recorded in the immediate vicinity of the project area, the presence of both low relief landforms within and immediately adjacent to the study area and the propinquity of the Potomac River approximately one half mile to the east indicate that these areas may have attracted prehistoric peoples, likely groups involved in seasonal resource exploitation. Therefore, the project area is considered to have at least a moderate probability of containing prehistoric cultural resources.

However, the study area's vicinity was agricultural or waste land prior to its annexation by Alexandria in 1785, suggesting the site was likely disturbed by plowing. This disturbance which would limit the research potential of any recovered prehistoric artifacts.

The probability for the occurrence of historic period sites largely depends upon the historic map search, the history of settlement in the area, the topography and the proximity of a particular property to historic roads. However, the absence of structures on historic maps does not eliminate the possibility of an archeological site being present within the property as it was common for tenant, slave, and African-American properties to be excluded from these maps. The study area has a moderate to high probability of containing late-18th-century through 20th-century artifact deposits and archeological features that could potentially provide significant information about domestic development in the Parker-Gray Historic District within the City of Alexandria, Virginia. Additionally, one previously recorded archeological site has been mapped extending into the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991.

RESULTS OF ARCHEOLOGICAL EVALUATION

The archeological evaluation fieldwork consisted of a program of close-interval shovel testing, followed by the excavation of test units. The recovered artifacts are summarized below in the following discussion. A full artifact inventory is presented in Appendix II.

Shovel Test Pits

The initial step in the evaluation fieldwork was the excavation of close interval shovel test pits (STPs) at 20-25 foot intervals within the greenspace surrounding the four extant Ramsey Homes buildings (Plate 1). The purpose of the shovel testing program was to provide information regarding apparent artifact concentrations, as well as to assess soil stratigraphy within the site.

In total, 40 STPs were excavated within the project area (Exhibit 10). Thirty of the STPs exhibited a stratigraphic profile consisting of one to three fills overlying a buried plowed stratum (Apb) atop subsoil (B horizon), similar to the profile of STP 8 (Exhibit 11). Eight STPs exhibited between one and three fill levels overlying a B horizon, similar to the profile seen in STP 34. Two STPs were terminated in fill levels and could not be excavated to subsoil, due to a fill impasse in one and the discovery of an abandoned utility in another.

STP 8

Fill 1: 0-0.8 feet below surface - [10YR 4/3] brown silty clay loam
Apb: 0.8-1.4 feet below surface - [10YR 5/8] yellowish brown clay loam
B horizon: 1.4-1.8 feet below surface - [10YR 6/8] brownish yellow clay loam

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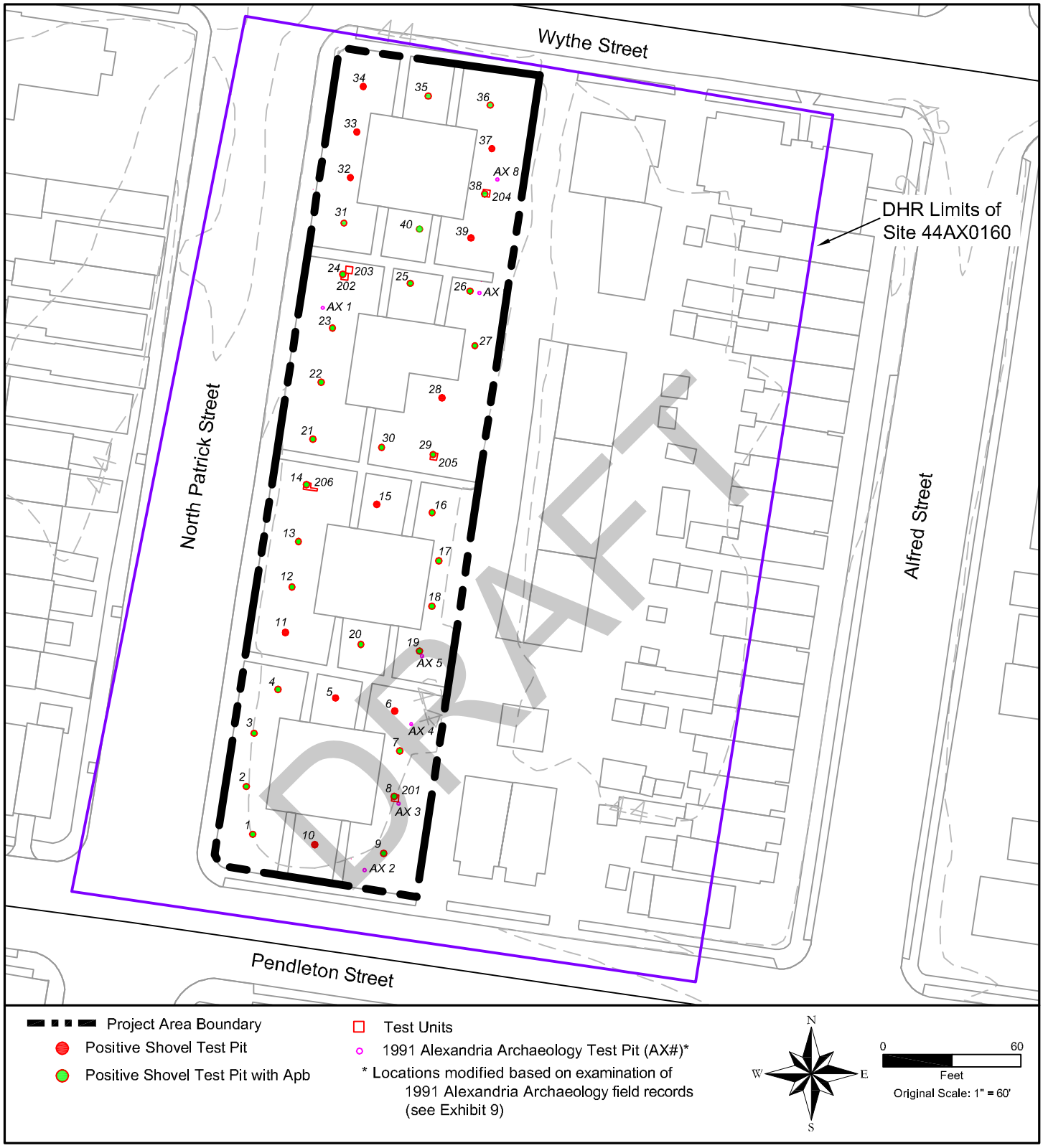
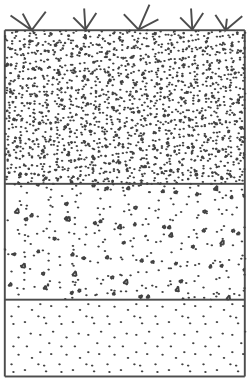


Exhibit 10
Archeological Testing

STP 8

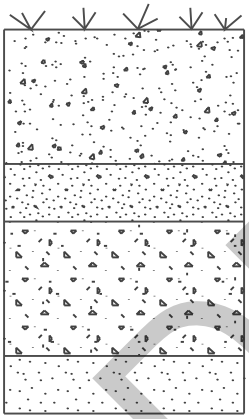


Fill: 10YR 4/3 brown silty clay loam

Apb: 10YR 5/8 yellowish brown clay loam

B horizon: 10YR 6/8 brownish yellow clay loam

STP 34



Fill: 10YR 4/3 brown silty clay loam

Fill 2: 10YR 5/4 yellowish brown clay loam mottled with 10YR 5/8 yellowish brown clay loam

Fill 3: 10YR 5/8 yellowish brown clay mottled with 10YR 6/2 light brownish gray clay

B horizon: 10YR 6/8 brownish yellow clay loam

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Feet
Original Scale: 1" = 1'

Exhibit 11
Representative Soil Profiles

STP 34

Fill 1: 0-0.7 feet below surface - [10YR 4/3] brown silty clay loam
Fill 2: 0.7-1.0 feet below surface - [10YR 5/4] yellowish brown clay loam mottled with [10YR 5/8] yellowish brown clay loam
Fill 3: 1.0-1.7 feet below surface - [10YR 5/8] yellowish brown clay mottled with [10YR 6/2] light brownish gray clay
B horizon: 1.7-2.0 feet below surface - [10YR 6/8] brownish yellow clay loam

A total of 1,176 artifacts were recovered from the shovel testing program (Table 2).

Table 2: Artifacts Recovered from STPs

Artifact Description	Fill 1	Fill 1 & Fill 2	Fill 2	Apb
Ceramics				
pearlware (1780-1830)	16	2	7	31
whiteware (1820-1900+)	26	1	9	19
hard paste porcelain	9		1	3
stoneware	4			4
yellowware (1830-1940)	1			5
refined white earthenware	2			3
ironstone (1840-1900+)	3			1
terra cotta	4			
redware	3			
hard paste porcelain tile	2			
Jackfield ware (1740-1780)	1			
kaolin pipe bowl				1
kaolin pipe stem				1
stoneware sewer pipe	1			
Glass				
bottle, bottle/jar, tableware, (ABM)* (post-1907)	187	12	23	20
unidentified glass	44	4	4	16
bottle, bottle/jar, tableware	22	1	4	13
bottle, bottle/jar, duraglas (post-1940)	32			
windowpane, potash (pre-1864)	8	1		5
bottle, (ABM) (post-1934)	10		1	3
bottle, contact mold (1810-1880)	3		1	5
bottle/jar, tableware, clear manganese (1880-1915)	3		2	1
marble (post-1902)	3			
windowpane, lime soda (post-1864)	1			1

***automatic bottle machine (ABM)**

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Table 2 (continued)

Artifact Description	Fill 1	Fill 1 & Fill 2	Fill 2	Apb
Glass				
bottle, chilled iron mold (1880-1930)	2			
Ball blue canning jar, ABM (1909-1938)	2			
bottle, clear selenium (1911-1930)				2
windowpane, soda/potash (pre-1864)	1			
tableware, soda-lime (post-1860s)	1			
bottle/jar, clear manganese, chilled iron mold (1880-1915)	1			
lamp chimney				1
decorative gemstone	1			
Metal				
nail, cut (post-1790)	30	1	6	27
nail, wire (post-1890)	15			
unidentified ferrous metal	13			8
aluminum pull tab (post-1962)**	2		1	
nail, unidentified			2	
wire	2			
.22 bullet and shell casing	1			
brass alloy pocket knife			1	
brass military button, General Services (1854-1902)	1			
copper alloy coin	1			
copper alloy coin (1938)	1			
copper alloy coin (1971)	1			
ferrous metal bolt	1			
lead alloy airplane	1			
Minie ball fragment				1
nail, wrought				1
nail, cut, machine headed (post-1830)				1
plate	1			
unidentified carbon steel	1			
aluminum beverage can (post-1957)**	1			
aluminum stay tab (post-1980)**	1			
sheet metal ball chain with connector**	1			
spark plug**	1			
steel safety pin**	1			

****discarded**

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Table 2 (continued)

Artifact Description	Fill 1	Fill 1 & Fill 2	Fill 2	Apb
Miscellaneous				
brick	101	14	27	105
composite, probable fiberboard	2		58	
plastic**	34	2	1	
oyster shell	15	2	3	13
coal	6	2		7
bone	8			2
coke	5		1	3
slag	3			6
mortar	6	2	1	
slate				4
tar composite			3	
brick, glazed	1			1
clam shell	2			
cinder		1		
plastic comb fragment	1			
rubber gasket	1			
vinyl record	1			
aluminum foil (post-1947) **	2			
fish tank rock**	1			
plastic bottle cap**	1			
Styrofoam® (post-1944)**	1			
Prehistoric				
quartz biface thinning flake				1
Total Shovel Test Pits	**660**	**45**	**156**	**315**

****discarded**

Based on the artifacts observed and recovered from the upper fill levels of the STPs, the urban fills present across the project area represent disturbed filled contexts; prehistoric and historic artifacts and modern refuse (e.g. plastic pens and caps, a disposable syringe tip, aluminum foil, polystyrene foam, twist-off plastic bottle caps, etc.) were found mixed in the fill strata of the STPs. The upper fill soils found across the project area are interpreted as likely being associated with the infilling and site leveling that occurred in the mid-20th century when the extant Ramsey Homes buildings were constructed and with subsequent excavations for the installation and maintenance of subsurface utility lines; the origin of the upper fill soils is unknown and it is possible that these soils did not

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originate from within the project area. Therefore, the artifacts recovered from the fill soils are considered to be secondarily deposited, following DHR guidelines.

The temporally diagnostic artifacts recovered from the Apb stratum include a variety of domestic refuse dating from the late 18th century and into the early 20th century; this temporal range is contemporaneous with a living surface that would have been open for deposition prior to being covered with fill soils circa 1942, when the Ramsey Homes buildings were constructed. As presented above, the city block that includes the project area sustained various occupations since as early as 1836 and continued to be occupied by various tenants and/or landowners until the early 20th century, when the project area consisted of several vacant lots. The occupation of the project area and city block also included a Civil War-era Union military camp between 1863 and 1865. Generally, the recovered artifacts recovered from the Apb stratum during shovel testing square with the temporal range of occupation indicated by the documentary research. Artifacts that post-date the presence of buildings within the project area, but precede the construction of the Ramsey Homes buildings, were likely dumped on the site when the property was vacant lots.

Only two overtly military artifacts were recovered from the STPs that may have been associated with the Union occupation of the project area, one of which was a fired, three groove Minie ball of unknown caliber recovered from the Apb stratum and the other was a General Services brass military button (1854-1902) recovered from the Fill 1 level. While it is possible that the button is associated with the Civil War occupation of the project area and its recovery from the secondarily deposited upper fill level was sampling error during excavation of the STP, it is also possible that the artifact did not originate from the site and its presence is coincidental.

Test Units

Six test units (TUs) were excavated within the project area (see Exhibit 10). Test units measured 3 foot by 3 foot and were oriented in alignment with the city block. The test units were placed at the locations of buildings shown on the 1865 United States Office of the Quartermaster General Map (see Exhibit 4), apparent artifact concentrations identified by the archeological evaluation shovel testing program, and in the vicinity of two test pits where possible features were identified by Alexandria Archaeology in 1991.

The upper fill soils within the TUs were screened during excavation and all material culture was recovered; however, the artifacts were not processed by Thunderbird's archeology laboratory, as the upper fill soils within the project area were interpreted as being secondarily deposited, based on the results of the shovel testing program. This methodology regarding treatment of the upper fills is consistent with the Scope of Work approved by Alexandria Archaeology (see Appendix I).

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Test Unit 201

Test Unit 201 was placed in the southeastern portion of the project area, at the location of STP 8; the TU included STP 8 within its northwestern corner. The TU was placed at this location to investigate an Apb stratum identified within the STP and to investigate the approximate location of the suttler's shop shown on Exhibit 4. A datum stake was set off the southwest corner of the TU at a height of 0.35 feet above ground surface and served as a vertical control for measuring depths within the TU.

The stratigraphic profile of TU 201 consisted of one fill level overlying an Apb stratum excavated in two levels, atop a Bw horizon and a Bt horizon (Exhibit 12; Plate 2). The fill extended to a depth of about 1.1 feet below datum and was recorded a [10YR 3/2] very dark grayish brown loam mixed with brick, glass, and coal. Level 1 of the Apb stratum extended to a depth of about 1.45 feet below datum and was recorded as a [10YR 3/2] very dark grayish brown loam mottled with 30% [10YR 6/4] light yellowish brown clay loam, while level 2 of the Apb stratum extended to a depth of approximately 1.9 feet below datum and was recorded as a [10YR 4/4] dark yellowish brown loam mottled with 60% [10YR 5/6] yellowish brown silty clay loam; Level 1 of the Apb appears to have had some of the upper fill soils integrated into its matrix, most likely during the infilling of the project area during construction of the Ramsey Homes. The Bw horizon extended to a depth of about 2.2 feet below datum and was recorded as a [10YR 5/6] yellowish brown silty clay. Excavations ceased within the Bt horizon at a depth of approximately 2.5 feet below datum and was recorded as a [10YR 5/8] yellowish brown silty clay mottled with 20% of a [10YR 6/1] gray clay.

TU 201 yielded a total of 500 artifacts (Table 3). Similar to the artifact assemblage recovered during the shovel testing program, the recovered assemblage from the Apb stratum of TU 201 included a mix of ceramic, glass, metal, and miscellaneous architectural and faunal refuse dating to between the late 18th century and the early 20th century. This temporal range is contemporaneous with a surface that would have been open for deposition prior to being covered with fill soils circa 1942, when the Ramsey Homes buildings were constructed. Artifacts that postdate the presence of 19th-century dwellings within the project area, but precede the construction of the 20th-century Ramsey Homes buildings, were likely dumped on the site when the property was vacant lots.

The recovery of ten sherds of pre-1864 windowpane glass fragments and 26 cut and wrought nails, though limited, as well as 158 fragments of brick, suggests the location of a former structure, possibly the building recorded as the sutler's shop on Exhibit 4. The recovery of temporally earlier artifacts, one sherd of creamware and 51 sherds of pearlware, suggests the possible structure at this location was likely occupied, and by extension constructed, prior to the military occupation of the project area.

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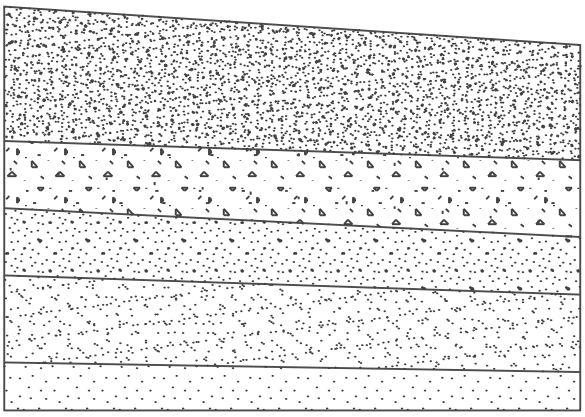

Fill: 10YR 3/2 very dark grayish brown clay loam mixed with brick and glass

Apb (Level 1): 10YR 3/2 very dark grayish brown loam mottled with 30% 10YR 6/4 light yellowish brown clay loam

Apb (Level 2): 10YR 4/4 dark yellowish brown loam mottled with 60%10YR 5/6 yellowish brown silty clay loam

Bw horizon: 10YR 5/6 yellowish brown silty clay

Bt horizon: 10YR 5/8 yellowish brown silty clay mottled with 20% 10YR 6/1 gray clay

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Feet
Original Scale: 1" = 1'

Exhibit 12
Test Unit 201 North Profile

Table 3: Artifacts Recovered from Test Unit 201

Artifact Description	Apb, Level 1	Apb, Level 2
Ceramics		
hard paste porcelain	3	2
kaolin pipe stem	4	
earthenware marble (mid-18th century-1930s)	1	
creamware (1762-1820)	1	
pearlware (1780-1830)	28	23
whiteware (1820-1900+)	17	7
refined white earthenware	14	5
stoneware	1	2
redware	1	
yellowware (1830-1940)	5	
Glass		
bottle, bottle/jar, tableware	7	2
bottle, contact mold (1810-1880)	3	
bottle, bottle/jar, (ABM)* (post-1907)	25	5
unidentified glass	11	8
windowpane, potash (pre-1864)	5	5
Metal		
brass button	1	
ferrous metal key		1
nail, wrought	1	
nail, cut (post-1790)	13	11
nail, unidentified	1	
unidentified ferrous metal	6	4
Miscellaneous		
bone	3	2
brick	108	50
cinder		4
clam shell	2	
coal	9	11
coke	4	38
mortar	5	1
oyster shell	13	
plaster	10	
plastic**		2
slag	11	4
Total Test Unit 201	**313**	**187**

***automatic bottle machine (ABM) **discarded**

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Test Units 202 and 203

Test Unit 202 was placed in the northwestern portion of the project area, at the location of STP 24; the TU included STP 24 within its northwestern corner. The TU was placed at this location to investigate an Apb stratum identified within the STP and to investigate the approximate location of the two story headquarters building shown on Exhibit 4. A datum stake was set off the northeast corner of the TU at a height of 0.4 feet above ground surface and served as a vertical control for measuring depths within the TU.

The stratigraphic profile of TU 202 consisted of one fill level overlying an Apb stratum excavated in two levels, atop a Bw horizon (Exhibit 13; Plate 3). The fill extended to a depth of about 0.7 feet below datum and was recorded a [10YR 3/2] very dark grayish brown loam mixed with brick, glass, and coal; the fill level is likely associated with the construction of the Ramsey Homes buildings. Level 1 of the Apb stratum extended to a depth of about 1.1 feet below datum and was recorded as a [10YR 4/3] brown loam mottled with 20% [10YR 5/6] yellowish brown silty clay, while level 2 of the Apb stratum extended to a depth of approximately 1.7 feet below datum and was recorded as a [10YR 4/2] dark grayish brown loam mottled with 60% of a [10YR 5/6] yellowish brown silty clay loam; Level 1 of the Apb appears to have had some of the upper fill soils integrated into its matrix, most likely during the infilling of the project area during construction of the Ramsey Homes buildings. The Bw horizon was encountered underlying level 2 of the Apb and was recorded as a [10YR 5/6] yellowish brown silty clay. A Bt horizon was exposed in plan beneath approximately 0.5 feet of the Bw horizon in the southern portion of the TU.

A feature (Feature 1) was observed cutting into the subsoil in the northeastern corner of the TU, directly beneath level 2 of the Apb; the feature extended approximately 0.3 feet south from the northeast corner of the TU and cut diagonally to the northwest, terminating approximately 1.1 feet west of the northeast corner (see Exhibit 13; Plate 4). The soils within the feature were recorded as a [10YR 4/3] brown silt loam mixed with a [10YR 6/4] light yellowish brown and a [10YR 5/8] yellowish brown silty clay. As only a small portion of the feature was present within the TU, and its size and function was unknown, no attempts were made to excavate within the portion of Feature 1 within the TU. An additional test unit, TU 203 (discussed below), was placed to the north of TU 202 to further investigate the possible cultural feature.

TU 202 yielded a total of 420 artifacts (Table 4). The assemblage contained artifacts of similar quantities, types, and temporal affiliations as those found in the recovered assemblages from the STPs and TU 201. The distal end of a quartz biface thinning flake dating to an unknown prehistoric period was also recovered. The presence of two pieces of aluminum foil (post-1947) within the Apb assemblage, which postdate the capping of the stratum during the construction of the Ramsey Homes circa 1942, is likely the result of sampling error during excavation.

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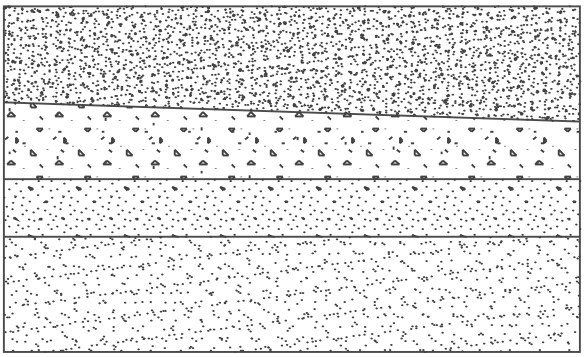
South Profile



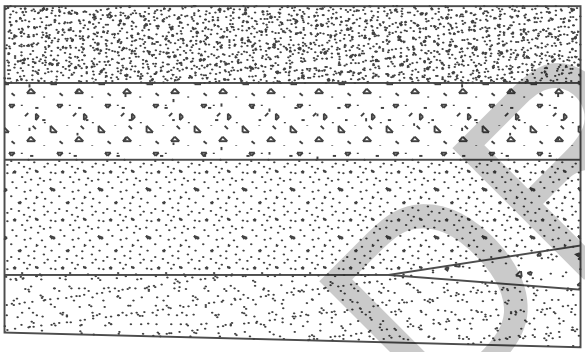
Fill: 10YR 3/2 very dark grayish brown clay loam with mixed brick, glass, and coal

Apb (Level 1): 10YR 4/3 brown loam mottled with 20% 10YR 5/6 yellowish brown silty clay

Apb (Level 2): 10YR 4/2 dark grayish brown loam mottled with 60%10YR 5/6 yellowish brown silty clay loam

Bw horizon: 10YR 5/6 yellowish brown silty clay

North Profile



Fill: 10YR 3/2 very dark grayish brown loam with mixed brick, glass, and coal

Apb (Level 1): 10YR 4/3 brown loam mottled with 20% 10YR 5/6 yellowish brown silty clay

Apb (Level 2): 10YR 4/2 dark grayish brown loam mottled with 60%10YR 5/6 yellowish brown silty clay

Feature 1 Fill: 10YR 4/3 brown silt loam mixed with 10YR 6/4 light yellowish brown and 10YR 5/8 yellowish brown silty clay

Bw horizon: 10YR 5/6 yellowish brown silty clay

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Feet
Original Scale: 1" = 1'

Exhibit 13
Test Unit 202 North and South Profiles

Table 4: Artifacts Recovered from Test Unit 202

Artifact Description	Apb, Level 1	Apb, Level 2
Ceramics		
hard paste porcelain	2	5
kaolin pipe bowl	1	
pearlware (1780-1830)	26	16
whiteware (1820-1900+)	8	12
refined white earthenware	2	1
redware	1	
stoneware		1
yellowware (1830-1940)	4	2
Glass		
bottle, bottle/jar	5	4
bottle, contact mold (1810-1880)		3
bottle/jar, clear manganese (1880-1915)		1
unidentified glass	13	5
windowpane, potash (pre-1864)	8	3
windowpane, soda/potash (pre-1864)	1	
Metal		
aluminum foil (post-1947)**	2	
nail, cut (post-1790)	16	9
nail, wire (post-1890)		4
unidentified ferrous metal	11	7
Miscellaneous		
bone	1	5
brick	84	55
coal	4	4
coke	18	24
oyster shell	7	37
slag	2	
slate	4	1
Prehistoric		
quartz biface thinning flake		1
Total Test Unit 202	**220**	**200**

****discarded**

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Similar to TU 201, the recovery of 12 sherds of pre-1864 windowpane glass fragments and 25 cut nails and four wire nails, as well as 139 fragments of brick, suggests the location of a former structure, possibly the building recorded as the headquarters on Exhibit 4. However, the recovery of temporally earlier artifacts, 42 sherds of pearlware, suggests the possible structure at this location was likely constructed and occupied prior to the military occupation of the project area. The presence of wire nails suggests a building that was extant and maintained after 1890.

TU 203 was placed immediately north of TU 202, centered on the northeastern corner of the test unit. A new datum was set 0.5 feet off the southeast corner of TU 203 at a height of 0.35 feet above ground surface.

After the removal of approximately 0.2 feet of the upper fill stratum, which was recorded as a [10YR 4/4] dark yellowish brown loam, a second feature (Feature 2) measuring approximately 1.05 feet in width and recorded as a [10YR 3/2] very dark grayish brown loam mixed with brick and stone was identified running across the northern portion of the test unit (Plate 5); Feature 2 cut through a second fill level that was present beneath the upper fill stratum in the remainder of the TU, but was not present in TU 202. The feature was approximately 1.0-foot-thick and extended to about 1.4 feet below datum, terminating atop the second fill level identified in the other portions of the TU. Approximately 0.3 feet of the fill stratum was removed from beneath Feature 2 before subsoil was reached at a depth of about 1.45 feet below datum. However, the fill stratum continued in the remaining portions of the TU, cutting through the subsoil encountered in the northern portion of the TU. The second fill level was recorded as a [10YR 4/3] brown silt loam mixed with a [10YR 5/8] yellowish brown silty clay and was excavated to a depth of approximately 2.7 feet below datum before excavations were halted due to the exposing of what appeared to be an *in situ* insulated metal wire found at the base of excavation. Exhibit 14 illustrates the western profile for TU 203 (Plate 6).

Considering the identification of the insulated metal wire at the base of excavation and the presence of temporally modern artifacts observed within the lower portions of the fill level (e.g. plastic sheeting fragments, fragments of a spray paint can top, and fragments of polystyrene foam), the stratum was interpreted as modern and likely represents an abandoned utility trench associated with the Ramsey Homes buildings. Furthermore, as Feature 2 cuts through this modern utility trench, it was likewise interpreted as a modern feature associated with the Ramsey Homes buildings. Feature 1, which was identified in the northeastern portion of TU 202 and prompted the excavation of TU 203, was not present within TU 203, indicating it was ephemeral and localized within TU 202. Based on the excavation data from TU 203, Feature 1 was interpreted as a rodent burrow adjacent to or within the utility trench identified in TU 203.

As the entirety of TU 203 included disturbed contexts and modern mixed fill soils, the artifacts recovered during excavation were not processed by Thunderbird's archeology laboratory; this methodology is consistent with the approved Scope of Work (see Appendix I).

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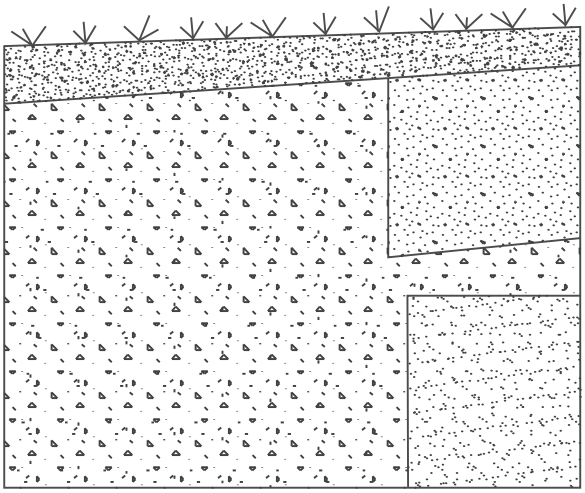

Fill: 10YR 4/4 dark yellowish brown loam

Feature 2 Fill: 10YR 3/2 very dark grayish brown loam mottled with brick and stone

Utility Trench Fill: 10YR 4/3 brown silt loam mottled with10YR 5/8 yellowish brown silty clay with plastic throughout

Bw horizon: 10YR 5/6 yellowish brown silty clay

DRAFT

0 1
Feet
Original Scale: 1" = 1'

Exhibit 14
Test Unit 203 West Profile

Test Unit 204

Test Unit 204 was placed in the southeastern portion of the project area, at the location of STP 38; the TU included STP 38 within its southwestern corner. The TU was placed at this location to investigate an Apb stratum and a possible brick and slate layer identified within the STP and to investigate the approximate location of a possible cobble surface identified by Alexandria Archaeology during their 1991 excavations within the project area (see Exhibit 9) and the approximate location of a barracks shown on Exhibit 4. A datum stake was set off the western wall of the TU at a height of 0.35 feet above ground surface and served as a vertical control for measuring depths within the TU.

The stratigraphic profile of TU 204 consisted of one fill level overlying an Apb stratum excavated in two levels, atop a Bw and Bt horizons (Exhibit 15; Plate 7). The fill extended to a depth of about 1.0 foot below datum and was recorded a [10YR 3/2] very dark grayish brown silt loam; the fill level is likely associated with the construction of the Ramsey Homes buildings. Level 1 of the Apb stratum extended to a depth of about 1.55 feet below datum and was recorded as a [10YR 4/3] brown silty clay loam mottled with [10YR 5/6] yellowish brown silty clay loam, while level 2 of the Apb stratum extended to a depth of approximately 2.1 feet below datum and was recorded as a [10YR 5/3] brown silty clay loam; Level 1 of the Apb appears to have had some of the upper fill soils integrated into its matrix, most likely during the infilling of the project area during construction of the Ramsey Homes. The Bw horizon extended to a depth of about 2.9 feet below datum and was recorded as a [2.5Y 6/4] light yellowish brown silty clay. Excavations ceased within the Bt horizon at a depth of approximately 3.2feet below datum and was recorded as a [2.5Y 6/2] light yellowish gray clay loam with iron concretions. In general, the TU soils were wet and poorly drained.

TU 204 yielded a total of 333 artifacts (Table 5). The assemblage recovered from TU 204 contained artifacts of similar quantities, types, and temporal affiliations as those found in the recovered assemblages from the STPs and the other test units. As seen in Table 5, what was initially thought to be a lens including slate during excavation of STP 38 was later identified as a tar composite material, likely fiberboard, which was commonly used in early 20th-century constructions. It is likely that this material was used during the initial construction of the Ramsey Homes buildings and incorporated into the Apb prior to the infilling of the site.

Similar to TUs 201 and 202, the recovery of 31 cut nails and eight wire nails and 72 fragments of brick suggests the location of a former structure, possibly the building recorded as the northern barracks building on Exhibit 4. The low quantity (n=3) of windowpane glass recovered from the TU suggests a building with at least one glazed window. The recovery of temporally earlier artifacts, 29 sherds of pearlware, suggests the possible structure near this location was constructed and occupied prior to the military occupation of the project area; the presence of wire nails suggests a building that was maintained after 1890.

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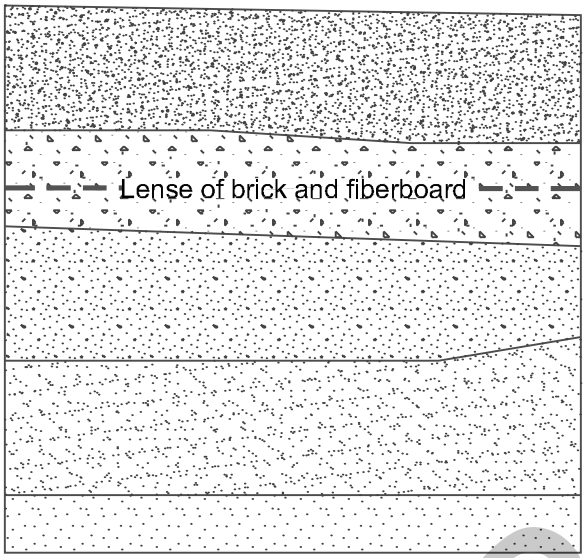

Fill: 10YR 3/2 very dark grayish brown silt loam

Apb (Level 1): 10YR 4/3 brown silt loam mottled with 10YR 5/6 yellowish brown silty clay loam

Apb (Level 2): 10YR 5/3 brown silty clay loam

Bw horizon: 2.5Y 6/4 light yellowish brown silty clay

Bt horizon: 10YR 6/2 light brownish gray clay loam with iron concretions

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0 1
Feet
Original Scale: 1" = 1'

Exhibit 15
Test Unit 204 West Profile

Table 5: Artifacts Recovered from Test Unit 204

Artifact Description	Apb, Level 1	Apb, Level 2
Ceramics		
hard paste porcelain	2	1
soft paste porcelain		1
pearlware (1780-1830)	17	12
whiteware (1820-1900+)	13	7
ironstone (1840-1900+)	7	
refined white earthenware	2	
redware	1	3
stoneware	2	
yellowware (1830-1940)	1	
Glass		
bottle	9	2
bottle, contact mold (1810-1880)	1	
bottle, bottle/jar, tableware, clear manganese (1880-1915)	8	1
bottle, chilled iron mold (1880-1930)	1	
bottle, bottle/jar, (ABM)*(post-1907)	23	
Ball blue canning jar, (ABM) (1909-1938)	1	
unidentified glass	8	
windowpane, potash (pre-1864)	2	1
Metal		
bolt	1	
brass cartridge casing (1867-1911)	1	
nail, cut (post-1790)	23	8
nail, wire (post-1890)	8	
unidentified ferrous metal	9	5
unidentified lead		2
Miscellaneous		
bone	2	1
brick	54	18
coal, coke	1	5
composite**, tar composite**	26	11
concrete**	6	
mortar	8	
oyster shell	14	2
plastic**	1	
slate	1	
Total Test Unit 204	**253**	**80**

***automatic bottle machine (ABM) **discarded**

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Test Unit 205

Test Unit 205 was placed in the east-central portion of the project area, at the location of STP 29; the TU included STP 29 within its northwestern corner. The TU was placed at this location to investigate an Apb stratum identified within the STP and to investigate the approximate location of a second barracks building shown on Exhibit 4. A datum stake was set off the northeast corner of the TU at a height of 0.35 feet above ground surface and served as a vertical control for measuring depths within the TU.

The stratigraphic profile of TU 205 consisted of one fill level overlying an Apb stratum excavated in two levels, atop a Bw horizon (Exhibit 16; Plate 8). The fill extended to a depth of about 0.9 feet below datum and was recorded a [10YR 3/2] very dark grayish brown loam; the fill level is likely associated with the construction of the Ramsey Homes buildings. Level 1 of the Apb stratum extended to a depth of about 1.1 feet below datum and was recorded as a [10YR 4/4] dark yellowish brown silt loam mottled with a [10YR 5/8] yellowish brown silty clay with 20% marble sized stones, while level 2 of the Apb stratum extended to a depth of approximately 1.6 feet below datum and was recorded as a [10YR 4/2] dark grayish brown silty clay loam mottled with 10% [10YR 4/1] dark gray silty clay. The Bw horizon was excavated to a depth of about 2.0 feet below datum and was recorded as a [10YR 6/8] brownish yellow silty clay. A disturbance was observed cutting through both levels of the Apb in the northern profile of the TU, but not in the underlying subsoil or the upper fill; the disturbance was not observed in the plan of the TU during excavation.

TU 205 yielded a total of 367 artifacts (Table 6). The assemblage contained artifacts of similar quantities, types, and temporal affiliations as those found in the recovered assemblages from the STPs and the other test units; one quartz decortication flake, one quartz primary reduction flake fragment, and one quartz biface thinning flake fragment all dating to an unknown prehistoric period were also recovered from the TU.

Similar to TUs 201 and 202, the recovery of 19 cut nails, ten wire nails, eight shards of pre-1864 windowpane glass, and 72 fragments of brick suggests the location of a former structure, possibly the building recorded as the southern barracks building on Exhibit 4. The 65 sherds of pearlware recovered from the Apb, which was the highest quantity of the ceramic found in a single provenience, suggests an occupation predating the Civil War occupation of the project area; the wire nails suggest a building that was maintained after 1890.

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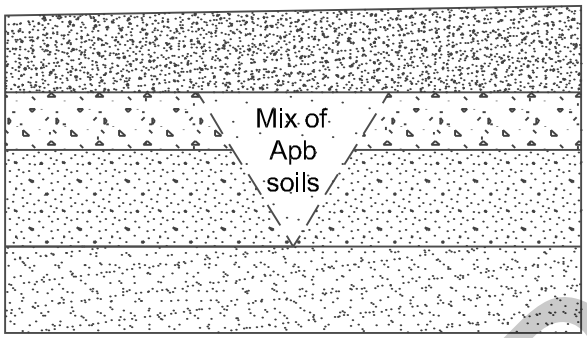

Fill: 10YR 3/2 very dark grayish brown loam

Apb (Level 1): 10YR 4/4 dark yellowish brown silt loam mottled with 10YR 5/8 yellowish brown silty clay and mixed with 20% pebbles

Apb (Level 2): 10YR 4/2 dark grayish brown clay loam mottled with 10% 10YR 4/1 dark gray silty clay and mixed with coal and brick

Bw horizon: 10YR 6/8 brownish yellow silty clay

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0 1
Feet
Original Scale: 1" = 1'

Exhibit 16
Test Unit 205 North Profile

Table 6: Artifacts Recovered from Test Unit 205

Artifact Description	Apb, Level 1	Apb, Level 2
Ceramics		
hard paste porcelain		1
kaolin pipe bowl		1
kaolin pipe stem	1	
pearlware (1780-1830)	21	44
refined white earthenware		2
whiteware (1820-1900+)	4	5
redware		2
yellowware (1830-1940)	1	
Glass		
bottle, bottle/jar	6	7
button/jewelry inset	1	
bottle, contact mold (1810-1880)		3
bottle/jar, clear manganese (1880-1915)		1
bottle, bottle/jar, (ABM)* (post-1907)	81	2
unidentified glass	4	15
windowpane, soda (pre-1864)	1	6
windowpane, soda/potash (pre-1864)		1
Metal		
nail, cut (post-1790)	6	13
nail, wire (post-1890)	10	
unidentified ferrous metal	1	1
unidentified lead rod		1
Miscellaneous		
bone		4
brick	46	32
coal		5
coke	8	6
concrete**	1	
daub	6	
oyster shell	8	5
slag		1
Prehistoric		
quartz decortication flake	1	
quartz primary reduction flake	1	
quartz biface thinning flake	1	
Total Test Unit 205	**209**	**158**

***automatic bottle machine (ABM) **discarded**

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Test Unit 206

Test Unit 206 was placed in the west-central portion of the project area, at the location of STP 14; the TU included STP 14 within its northwestern corner. The TU was placed at this location to investigate an Apb stratum identified within the STP. A datum stake was set off the northeast corner of the TU at a height of 0.3 feet above ground surface and served as a vertical control for measuring depths within the TU.

The stratigraphic profile of TU 205 consisted of one fill level overlying an Apb stratum, atop a Bw horizon (Exhibit 17; Plate 9). The fill extended to a depth of about 0.9 feet below datum and was recorded a [10YR 3/2] very dark grayish brown silt loam; the fill level is likely associated with the construction of the Ramsey Homes buildings. The Apb stratum extended to a depth of about 1.5 feet below datum and was recorded as a [10YR 5/3] brown silt loam mottled with a [10YR 6/4] light yellowish brown compact silt loam. A zone of bioturbation associated with root disturbance was encountered in the bottommost portion of the Apb and the topmost portion of the B horizon; this area was screened for artifacts separately from the remaining portion of the Apb stratum. The Bw horizon extended to a depth of about 2.0 feet below datum and was recorded as a [10YR 6/8] brownish yellow silty clay.

TU 206 yielded a total of 131 artifacts (Table 7). The assemblage contained artifacts of similar types and temporal affiliations as those found in the recovered assemblages from the STPs and the other test units excavated within the project area; however, TU 206 yielded significantly fewer artifacts than the other excavated test units. The artifact assemblage of TU 206 does not suggest the location of a former structure, based on the limited recovery of architectural artifacts; only four cut nails, two shards of windowpane glass, and ten fragments of brick were recovered.

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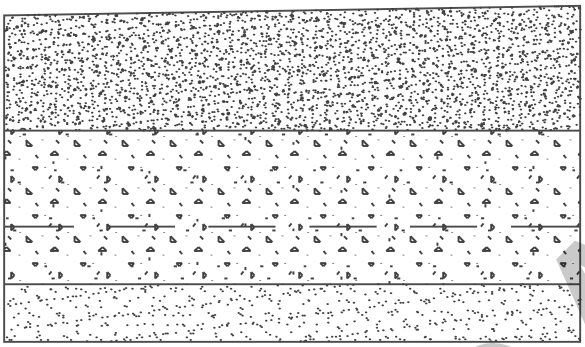

Fill: 10YR 3/2 very dark grayish brown loam

Apb: 10YR 5/3 brown silt loam mottled with 10YR 6/4 light yellowish brown compact silt loam

Zone of bioturbation (heavy root disturbance in Apb)

Bw horizon: 10YR 6/8 brownish yellow silty clay

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Feet
Original Scale: 1" = 1'

Exhibit 17
Test Unit 206 North Profile

Table 7: Artifacts Recovered from Test Unit 206

Artifact Description	Apb	Zone of Bioturbation
Ceramics		
hard paste porcelain	1	
pearlware (1780-1830)	19	5
whiteware (1820-1900+)	4	2
refined white earthenware	3	
redware	1	
yellowware (1830-1940)	1	1
Glass		
bottle, bottle/jar	10	
bottle/jar, clear manganese (1880-1915)	8	
marble (post-1902)	1	
bottle, bottle/jar, (ABM)* (post-1907)	28	
unidentified glass	12	8
windowpane, potash (pre-1864)	2	
Metal		
nail, cut (post-1790)	3	1
Miscellaneous		
brick	4	6
coal	4	
coke	2	
oyster shell	3	
slag		2
Total Test Unit 206	**106**	**25**

***automatic bottle machine (ABM)**

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SITE DISCUSSION

Material Culture

The following material culture discussion includes artifacts recovered during the current archeological evaluation and is focused exclusively from those proveniences which contained an Apb stratum. Since the project area has been disturbed and in-filled during activities associated with the construction and improvements to the extant Ramsey Homes buildings, the artifacts recovered from modern or mixed fill proveniences were considered secondarily deposited and were excluded from this discussion.

No extensive use of the area by prehistoric populations was found within the project area, with only four prehistoric artifacts being recovered from Apb contexts. Test Unit 205 yielded one quartz decortication flake, one quartz primary reduction flake fragment, and

one quartz biface thinning flake fragment and Test Unit 202 yielded one quartz biface thinning flake fragment. These artifacts are considered to represent an incidental occupation of the project area, likely associated with the reduction of lithic raw material into a stone tool(s) during an unknown period of prehistory. The prehistoric component was added to the DHR archeological site form for 44AX0160. However, as the artifacts were recovered from plowed contexts, and no other prehistoric artifacts were recovered, in our opinion, the prehistoric component of the site lacks research potential and is not considered eligible for listing on the NRHP.

Exhibit 18 depicts the distribution of all historic artifacts recovered from Apb contexts within the project area. These quantifications exclude miscellaneous materials such as faunal bone and shell and fragments of mortar, brick, and charcoal; removed from the calculations used in the preparation of these exhibits due to the variability of their collection. As Exhibit 18 shows, a light scatter of artifacts is present across the entire project area. Moderately dense concentrations are apparent in the vicinity of TUs 201 and 205. Lighter concentrations are evident in the vicinity of TUs 202, 203, 204, and 206 and in the southwestern portion of the project area, around STP 2.

The historic artifacts from the site were separated into functional groups following South (1977). This analysis excluded artifacts such as bone, shell, brick, and artifacts such as unidentified iron and glass fragments to which a function could not be assigned. Table 8 presents the percentages of the functional types for the artifacts recovered from the portion of site 44AX0160 within the project area.

Table 8: South's Functions

Function	Quantity	Percent
Kitchen	724	77.43%
Architectural	197	21.07%
Tobacco	9	0.96%
Activities	2	0.21%
Arms	2	0.21%
Clothing	1	0.11%
Total	**935**	**100.00%**

As the table shows, historic artifacts recovered during the current investigation of the project area represent six of South's functional groups. Kitchen group artifacts, including ceramic and vessel glass, represent 77.43% (n=724) of the functionally assignable artifacts. Architectural artifacts, including nails and window glass, account for 21.07% (n=197). The remaining four functional groups together comprise 1.49% (n=14) of the assemblage, and include Tobacco group artifacts (0.96%, n=9), Activities group artifacts (0.21%, n=2), Arms group artifacts (0.21%, n=2), and Clothing group related artifacts (0.11% (n=1).

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Exhibit 18
Distribution of Historic Artifacts within the Apb Horizon

Kitchen Artifacts

The Kitchen functional group typically includes items such as bottle glass, ceramics, cutlery, and various kitchen utensils and cooking vessels. The great majority of kitchen-related artifacts recovered at the site were ceramic sherds and glass fragments. Of the 724 Kitchen group artifacts, 59.81% (n=433) were ceramics and 40.19% (n=291) were bottle or table glass.

Ceramic wares can be divided into two general categories based on typical use and methods of manufacture. Refined wares or tablewares were utilized for dining, drinking, or serving and include pearlware, whiteware, and ironstone. Utilitarian wares were more coarsely made than tablewares and much less expensive. These are generally found in a kitchen setting and were utilized for food production and storage. Specific forms include bowls, milk pans, storage jars and bottles, and pipkins. This category could also include vessels for other utilitarian functions, such as chamber pots, trinket trays, and small salve pots.

Table 9 presents quantifications of refined and utilitarian wares in the ceramic assemblages. Table 10 quantifies the ceramic assemblage by ware type for the site.

Table 9: Refined Versus Utilitarian Ceramics

Ceramic Type	Quantity	Percent
Refined	395	91.22%
Utilitarian	37	8.78%
Total	**433**	**100.00%**

Table 10: Ceramic Ware Type

Ware Type	Quantity	Percent
Pearlware (1780-1830)	237	54.73%
Whiteware (1820-1900+)	96	22.17%
Refined white earthenware	32	7.39%
Hard paste porcelain	20	4.62%
Yellowware (1830-1940)	19	4.39%
Stoneware	10	2.31%
Redware	9	2.08%
Ironstone (1840-1900+)	8	1.85%
Soft paste porcelain	1	0.23%
Creamware (1762-1820)	1	0.23%
Total	**433**	**100.00%**

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As Table 9 shows, refined ceramics are more highly represented than utilitarian wares, as seen in the above table (Plate 10). In general, a significantly higher ratio of refined to utilitarian ceramics can suggest occupants of a higher socioeconomic status; although other factors such as site function, availability of wares, and personal preference can be a factor in the constitution of an assemblage.

As Table 10 shows, the dominant refined ware recovered from the project area was pearlware, constituting 54.73% (n=237) of the Kitchen group ceramic assemblage. Whiteware represents the second most abundant ware type recovered from the site, constituting 22.17% (n=96) of the kitchen-related ceramics; whiteware represents a broad class of ceramics that remained generally inexpensive and readily available from its introduction in 1820 through the remainder of the 19th century and into the 20th century. Refined white earthenware accounted for 7.39% (n=32) of the refined ceramic assemblage; these ceramic sherds were too small, damaged or burned for identification as a specific type of refined ware to be made. The remaining refined ceramic ware types were not as well represented in the Kitchen group assemblage and include hard paste porcelain (4.62%, n=20), ironstone (1.85%, n=8), soft paste porcelain (0.23%, n=1), and creamware (0.23%, n=1). The utilitarian ceramic sherds recovered from the site included yellowware, stoneware, redware. Yellowware constitutes 4.39% (n=19) of the Kitchen group ceramics, while stoneware and redware account for 2.31% (n=10) and 2.08% (n=9) of the assemblage.

The level of decoration that appears on the sherds of refined ceramic wares has been seen as an indicator of the owner's socio-economic status. Scaling degree of ceramic decoration into four levels, with undecorated wares being the least expensive and transfer-printed wares the most expensive, can provide information relevant to the economic status of site occupants, at least as represented by their ceramic purchases. This praxis may be statistically flawed when the assemblage is composed of mostly small sherds, as such sherds of decorated wares might not show decoration. Studies of ceramic prices in the 18th century and in the first half of the 19th century have indicated that decorated wares were invariably more expensive than undecorated wares (Miller 1980; 1992). By the mid-19th century, white undecorated ironstone had become a popular ware type and, by the mid-1850s, the price of undecorated ironstone was often equal to transfer printed wares. Bills of sale for ceramics from the late 1850s through the 1870s contain few transfer printed wares and they appear to have been replaced by undecorated ironstone (Miller 1980: 3-4).

Undecorated tablewares accounted for the majority of the ceramics recovered from the project area (Table 11); however, as the assemblage of ceramic artifacts recovered from the project area was composed of mostly small sherds, some could be fragments of decorated wares that do not show decoration. Of the 340 assessed sherds recovered, 83.82% (n=285) were undecorated, 6.52% (n=15) were hand-painted, 6.18% (n=21) were transfer printed, and 1.76% (n=6) had minimal decoration.

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Table 11: Degree of Decoration

Ceramic Type	Quantity	Percent
Undecorated	285	83.82%
Hand painted	28	8.24%
Transfer printed	21	6.18%
Minimal	6	1.76%
Total	**340**	**100.00%**

Several methods of manufacture were discernible in the kitchen glass assemblages from the site (Table 12) (Plate 13). As the table shows, 188 shards of automatic bottle machine glass account for 48.30% of the glass assemblage. A manufacturing method could not be ascertained for 41.30% (n=159) of glass artifacts included in the Kitchen group. Twenty shards of clear manganese glass and 15 shards contact mold bottle glass account for 5.19% and 3.90% of the assemblage, respectively. The remaining temporally diagnostic glass technologies are represented by two shards of clear selenium and one shard of chilled iron mold.

Table 12: Glass Type and Technology

Technology	Quantity	Percent
Automatic bottle machine(1907-present)	188	48.83%
Indeterminate	159	41.30%
Clear manganese (1880-1915)	20	5.19%
Contact mold (1810-1880)	15	3.90%
Clear selenium (1911-1930)	2	0.52%
Chilled iron mold (1880-1930)	1	0.26%
Total	385	100.00%

A significant quantity of 20th-century glass was recovered from Apb contexts across the site, indicating the Apb possessed a temporally broad, mixed historic context. However, as the Apb stratum would have been the ground surface prior to being covered during the infilling of the site during construction of the Ramsey Homes buildings in the early 1940s, and thus open for the deposition of artifacts dating to the 20th century, the presence of temporally later glass in the assemblage is expected.

Exhibit 19 depicts the distribution of all kitchen-related artifacts recovered from Apb contexts within the project area. These quantifications exclude miscellaneous materials such as faunal bone and shell; removed from the calculations used in the preparation of these exhibits due to the variability of their collection. Similar to the distribution of all historic artifacts, a light scatter of kitchen-related artifacts is present across most of the

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Exhibit 19
Distribution of Kitchen Artifacts within the Apb Horizon

project area. Two moderately dense concentrations are evident, one in the southern portion of the project area, in the vicinity of the vicinity of TU 201, and one in the central portion of the project area, in the vicinity of TUs 205 and 206. Lighter concentrations are apparent in the northern portion of the project area, surrounding TUs 202/203 and 204.

Architectural Artifacts

The architectural component of the artifact assemblage from the project area contained predominantly nails of various types and windowpane glass, with nails and nail fragments accounting for 78.6% (n=155) of the Architectural group assemblage; Table 13 presents the quantification of nail types recovered from project area. Although nail types cannot conclusively date a structure, temporal patterns of occupation, alteration, and use may be interpreted from the nail assemblage; each nail type was popular for a specific and overlapping period of time, thus nail types can be used to establish generalized dates for older buildings.

Table 13: Nail Manufacture

Nail Manufacture	Quantity	Percent
Cut (post-1790)	129	83.23%
Wire (1890-present)	22	14.19%
Wrought	2	1.29%
Cut, machine headed (post-1830)	1	0.65%
Unidentified nail	1	0.65%
Total	**155**	**100.00%**

Before fully machine-made nails were common, builders depended on hand-wrought nails and earlier forms of machine cut nails. Imported English wrought nails, sold in coastal market towns, and wrought nails manufactured by local blacksmiths were the only available nails in the region prior to circa 1790. Wrought nails account for 1.29% (n=2) of the assemblage. Manufacturers began to supply machine cut nails in quantity after 1790, and these competed with wrought nails until circa 1830, when machine headed cut nails appeared, replacing those with hand finished heads. Cut nails of various types constitute 82.88% (n=130) of the assemblage. The majority of the cut nails (n=129) were identified only as cut nails, meaning the nail heads, which are used to refine a manufacture date, were either missing from the specimen or the nail head type could not be determined; machine headed cut nails account for 0.65% (n=1) of the recovered nails.

Pre-1864 windowpane fragments account for approximately 20% (n=40) of the architectural artifacts recovered from the site. Only one sherd of post-1864 windowpane glass was recovered.

Exhibit 20 depicts the distribution of Architecture group artifacts recovered from Apb contexts within the project area. These quantifications exclude miscellaneous materials like fragments of mortar and brick, due to the variability of their collection.

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Exhibit 20
Distribution of Architectural Artifacts within the Apb Horizon

Similar to the distribution of all historic artifacts and kitchen-related artifacts, a light to moderate scatter of architectural artifacts is apparent across most of the site. Moderately dense, small concentrations of architectural artifacts are visible in the vicinity of TU 202/203, in the southwestern portion of the site surrounding STP 2, and in the southcentral portion of the project area at STP 20. Lighter concentrations are evident surrounding TUs 201, 204, and 205.

Other Functional Artifacts

The artifacts from the Kitchen and the Architectural functional groups clearly dominate the assemblages of the project area. This is expected at domestic sites and it is common for artifacts from the remaining functional groups to make up small percentages of the total artifact assemblage. The absence of one or more of the remaining groups from an assemblage might be interpreted as evidence that the occupants of the site were possessed of limited economic means. The artifact assemblage from the site included small quantities of artifacts from the tobacco, activities, arms, and clothing functional groups (Plate 12).

The Tobacco functional group comprises 0.96% (n=9) of the functional assemblage, consisting of six kaolin pipe stem fragments and three kaolin pipe bowl fragments (see Plate 12). One of the pipe bowl fragments exhibited a molded floral decoration and another had an unidentifiable molded rim decoration; two pipe stem fragments with 5/64ths of an inch bore hole diameter were also recovered. No maker's marks were identifiable on the recovered tobacco pipe specimens.

Tobacco pipe bowls and stems are commonly used by historical archeologists to assist in site dating using the measurement of a pipe's stem bore diameter. Archeologists concluded that between the years 1620 and 1800, pipe makers reduced the diameter of the wire used in making pipe stem bores by 1/64th of an inch every 30-50 years, allowing for the establishment of an associative chronology between bore stem diameter and a specific temporal period (c.f. Harrington 1954; Deetz 1996). However, due to the limited number of recovered Tobacco group specimens, the pipe bowl and stem sample size was considered too small to be useful for dating analysis of this kind.

The Activities group was subdivided into five analytical categories: hardware, stable/barn associated artifacts, tools, toys, and military objects. Two toys, an unglazed earthenware marble dating to between the mid-18th century and the 1930s and a machine-made, glass marble post-dating 1902 comprise the Activities group assemblage (see Plate 12).

The Arms functional group is subdivided into three categories: musket balls, shot, and sprue; gunflints and gun spalls; gun parts and bullet molds. The Arms group from the project area consists of one Civil War Era lead bullet, a fired three groove Minie ball fragment, and a brass .22 caliber rimfire cartridge casing (1867-1911) (see Plate 11).

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The Clothing functional group is subdivided into eight categories: buckles, thimbles, buttons, scissors, straight pins, hook and eye fasteners, bale seals, and glass beads. The Clothing group from the project area assemblage consists of one domed brass button fragment (Plate 11).

Site Chronology and Occupants of the Site

A Mean Ceramic Date (MCD) was calculated for site 44AX0160. An MCD of 1821 was calculated for the site, following South (1977), and 1825 following Miller's (1992) revision of South's dates. The MCD represents the mid-point of the period of site occupation; however, the calculation can be skewed by the presence of curated or second-hand ceramics in an assemblage. In these cases, calculation of the MCD would tend to produce a date that is earlier than the actual mid-point of site occupation.

The temporal range of occupation, rather than the mid-point of occupation, can be inferred by the relative proportions of ceramic types in the artifact assemblage. Pearlware, manufactured and sold between about 1780 and 1830, and whiteware, introduced in 1820 and used into the modern era, represent the two most abundant ceramic ware types recovered from the project area, accounting for 54.73% and 22.17% of the ceramic sherds recovered, respectively; the remaining ware types in the assemblage saw continued use throughout the 19th century. Additionally, only one creamware sherd, generally dated from 1762 to 1820, was found at the site.

While the calculated MCD for the site and the preponderance of pearlware in the recovered artifact assemblage would suggest an occupation date beginning in the late 18th century, the near absence of other 18th century ceramic artifacts would suggest otherwise; as one would expect to find much higher quantities of earlier ceramics if the site was occupied beginning in the late 18th century. Apart from the pearlware assemblage, the single creamware sherd was only other ceramic sherd that potentially dates to the 18th century, suggesting the site was occupied after the end date for creamware, toward the end of the production date of pearlware, and after the introduction of whiteware; likely beginning in the late first quarter or early second quarter of the 19th century.

Of the bottle/jar and tableware glass fragments recovered at the site, the type of glass manufacturing technology and, thus, dates of production were identifiable for about 58% (n=226) of the assemblage. The majority (49.35%) of the identifiable assemblage consists of glass fragments that date conclusively to the 20th century, including 188 fragments of automatic bottle machine glass (1907-present) and two fragments of clear selenium glass (1911-1930). The remaining fragments have manufacturing dates beginning in the 19th century and include 20 shards of clear manganese (1880-1915), 15 shards of contact mold (1810-1880), and one shard of chilled iron mold (1880-1930). As the availability and popularity of glass vessels increased greatly in the late 19th century, large numbers of post-1880 glass fragments would be expected in the assemblage of any domestic site with more than ephemeral occupation into the 20th century. This appears to be manifest at rural and urban sites, as well as at sites of variable socio-economic standing and ethnic/cultural

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affiliation. The significant quantities of late 19th-century/early 20th-century glass types from the project area mirror this trend.

Over 97% (n=40) of the windowpane glass recovered from the project area was manufactured before 1864, while only 2.44% (n=1) was manufactured after 1864. While the windowpane glass assemblage was minimal, the presence of significantly more pre-1864 window glass indicates a structure or structures with at least one glazed window was constructed at the site prior to 1864. The presence of post-1864 window glass, though minimal, suggests that a structure constructed after 1864 was present within the project area; however, it is equally possible that post-1864 window glass represents a repair to an older structure.

A large percentage (83.23%, n=129) of the nails recovered from the project area were post 1790 cut nails. Older wrought nails were scarce, representing only 1.29% (n=2) of the assemblage, while wire nails accounted for 14.19% (n=22). This indicates that most construction at the site occurred after 1790 and utilized older cut nails. The recovery of 22 wire nails from Apb contexts suggests a building that was extant and being maintained after 1890.

Generally, the entire artifact assemblage from Apb contexts supports the interpretation of an occupation or occupations of the project area, prior to the Ramsey Homes occupation(s), beginning in the late first quarter/early second quarter of the 19th century and continuing into the early 20th century.

Based on archival research conducted for the project area, habitation of the city block in which the project area is located began circa 1836; in 1836, the eastern portion of the block was purchased by George Blish, where he was already residing and being taxed. In 1852, the property value for the block increased significantly from $1,600 in value in 1851 to $2,800 and numerous tenants were recorded as residing on the property. This increase in population on the property concurrent with the rise in value indicates that additional housing was constructed on the block; by 1854, when tax records indicate the presence of four houses on the block and give a value of $5,000 for the property.

During the Civil War, the city block that includes the study area was commandeered by the Union army to host the headquarters, barracks, and hospital facility of Battery H of the Pennsylvania Independent Light Artillery. A United States Office of the Quartermaster General (USQM) map of the block bounded by Wythe, Alfred, Pendleton, and Patrick (see Exhibit 4) indicates that the frame buildings depicted were constructed in 1863 and include a two story headquarters building on Patrick Street with single story wings on the north, south, and west and a large veranda on the east elevation, two barracks buildings measuring 20 x 60 feet, a kitchen, a blacksmith, a large stable fronting on Alfred Street, a small hospital building on Pendleton, and a building marked “Sutlers, Private” in the southwestern quadrant of the block. A vegetable garden and landscaping surround the headquarters building and the space between the barracks, and several “sinks,” or privies, are located at the edges of the block.

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If the USQM map is an accurate record of the buildings on the property, then it appears likely that George Blish's former dwelling on the eastern portion of the block and several of the multiple dwellings mentioned in 1854 tax records were demolished prior to the military construction. It is likely that the dwelling in use by the sutler was a remnant of the pre-war buildings, and possible that the two story core of the headquarters building is a second re-purposed pre-war building. The other two of the four pre-war buildings likely stood in the northeast and southeast quarters of the block and appear to be no longer extant as of 1865.

A second map depicting the locations of buildings within the block was produced in 1864 (see Exhibit 5). Buildings are shown in the approximate locations of the headquarters, sutler, and stable illustrated in the USQM map, but the footprints depicted do not match those on the military map, in particular the lack of wings on the building in the headquarters location, and the appearance of two conjoined buildings along Alfred Street in the location of the stables. This 1864 plan map may simply be inaccurate or lack the necessary resolution of detail; it is also possible that the map depicts the pre-war configuration of buildings on the block.

Hopkins' 1877 map (see Exhibit 6) identifies the study area as a part of Henry Daingerfield's estate, and depicts four buildings on the block, two of which stand at least partially within the study area. The buildings shown appear to correspond to the Battery H headquarters and the building associated with a sutler on the USQM map. In 1880, tax records indicate that one house stood on the square that includes the study area, but the specific location of the dwelling is unknown. The dwelling apparently continued to be rented out on the square throughout the 1880s.

No information was obtained during research for the project area regarding the occupation of the block after the 1880s until 1921, when no buildings are shown within the project area (see Exhibit 7). In 1923, Charles King sold the property to his grocery wholesale company, Chas. King & Son (Alexandria Deed Book 76: 110). Also in that year, the block was surveyed for subdivision and soon thereafter lots were sold for development (Alexandria Deed Book 76:242). Although the eastern and central portions of the block were developed, the western third of the block comprising the study area was sold to four buyers who left it vacant (see Exhibit 8). The project area likely remained vacant until the construction of the Ramsey Homes buildings circa 1942.

SUMMARY AND RECOMMENDATIONS

An Archeological Evaluation (Phase I/II archeological investigation) was conducted of the Ramsey Homes project area, which is located on the eastern side of North Patrick Street between Pendleton and Wythe Streets in the City of Alexandria, Virginia. One archeological site (44AX0160), a Civil War-era military barracks site, was previously recorded extending into the project area by Alexandria Archeology in 1991. Additionally, the project area is located within the bounds of the Parker-Gray Historic District (DHR No. 100-0133) and includes four buildings with 15 units previously recorded with the DHR in 2006 as seven architectural resources (DHR Nos. 100-0133-1328, 100-0133-

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0754, 100-0133-0751, 100-0133-0747, 100-0133-0749, 100-0133-0745, and 100-0133-0948); these architectural resources are discussed in detail under a separate cover (Carroll et al. 2016). Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study described in this report for Ramsey Homes, LP of Alexandria, Virginia. The fieldwork was carried out in July of 2016.

The archeological evidence recovered as result of the investigation indicates an occupation(s) date range beginning in the late first quarter/early second quarter of the 19th century and continuing into the early 20th century, and the documentary research conducted for the project area supports this interpretation. However, as no intact contexts were identified during the current investigation, the interpretive value of the recovered artifact assemblage is limited, specifically regarding the ability to separate the various periods of occupations (i.e. the early to mid-19th-century occupations, the Civil War military occupation, and the post-Civil War occupations) within the project area and to assign artifacts to a specific occupation; however, some inferences can be made. It is likely that the recovered early to mid-19th-century artifacts are associated with the circa 1836 occupation of the block by George Blish or by the later 1852 occupations when tenant houses were recorded within the block and project area, and are not associated with the later military or tenant occupations of the project area. It is also likely that the two overtly military artifacts recovered, the fired three groove Minie ball of unknown caliber and the General Services brass military button, were associated with the Union occupation of the project area. While other artifacts commonly found on Civil War-era campsites were recovered in the assemblage (e.g. liquor/wine bottle fragments, bitters bottle fragments, patent medicine bottle fragments, tobacco pipe fragments, etc.), as these artifacts were found in mixed contexts, they represent artifacts that are common on other domestic sites dating to that time period and cannot be conclusively assigned to the military occupation.

While the interpretive value of the recovered artifact assemblage was limited, the identification of an Apb stratum in numerous locations within the project area indicates that the vertical disturbance associated with the construction of the Ramsey Homes buildings was not extensive and absolute. Although no intact contexts or historic cultural features were identified during the current investigation, the presence of the Apb stratum indicates there is a potential that cultural features associated with the historic occupations of the property are present within the project area. Therefore, in our opinion, the portion of site 44AX0160 that extends into the project area is eligible for listing on the National Register of Historic Places under Criterion D due to the likelihood that it will provide significant information about domestic life and military history within the Parker-Gray Historic District during the second and third quarters of the 19th century. As current development plans will result in impacts to the site, we recommend that archeological data recovery be conducted at site 44AX0160. Additionally, we recommend that demolition of the buildings should occur only under archeological monitoring and that any significant cultural deposits identified beneath the buildings should be mitigated in accordance with an approved treatment plan.

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1982 Shellfish Gathering and Shell Midden Archeology. Ph.D. Dissertation, Department of Anthropology, University of North Carolina, Chapel Hill.

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Plate 1: Overview of Project Area
View to Northeast

Plate 2: Test Unit 201 North Profile

Plate 3: Test Unit 202 South Profile

Plate 4: Test Unit 202 North Profile

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Plate 5: Feature 2 Plan

Plate 6: Test Unit 203 West Profile

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Plate 7: Test Unit 204 West Profile

Plate 8: Test Unit 205 North Profile

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Plate 9: Test Unit 206 North Profile

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Plate 10: Refined and Utilitarian Ceramics
Row 1: Canary Yellow Glazed Creamware (1762-1820), Mocha Pearlware (1795-1890), Overglaze Blue Hand Painted Hard Paste Porcelain (pre-1880)
Row 2: Blue Transfer Printed (1830-1865+) and Mulberry Transfer Printed (1825-1875+) Whiteware
Row 3: Polychrome Hand Painted and Undecorated Yellowware (1830-1940)

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Plate 11: Overtly Military Artifacts
General Services Button (1854-1902) and Fired Minie Ball Fragment

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Plate 12: Clothing, Toy, and Tobacco Artifacts
Row 1: Brass Domed Button, Two Molded Kaolin Pipe Bowls
Row 2: Earthenware Marble (Mid-18th Century-1930s) and Kaolin Pipe Stem

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Plate 13: Glass Artifacts
Row 1: Clear Faceted Gemstone, Turquoise Faceted Jewelry/Button Inset, One Puce and One Amber Drake's Plantation Bitters Bottle Fragments (1862-1880)
Row 2: Blackglass Wine Bottle Lip Finish Fragments (Pre-1880) and Aqua Medicinal Bottle (1810-1860)

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Scope of Work for Archaeological Evaluation
Ramsey Homes Site
City of Alexandria, Virginia

April 2016
Revised June 2016

INTRODUCTION

The Ramsey Homes are located on North Patrick Street between Pendleton and Wythe Streets in the City of Alexandria, Virginia within the bounds of the historically African-American community known as Uptown and the locally zoned "Parker-Gray District" (**Error! Reference source not found.** and 2). The Board of Commissioners of the Alexandria and Redevelopment Housing Authority (ARHA) propose to redevelop the study area consistent with the Braddock East Master Plan (BEMP) at a density high enough to sustain a critical mass of mixed-income residents and work force housing in order to maintain the strong social and support networks that are essential in sustainable communities. The provision of additional affordable housing is a key goal of the Alexandria City Council 2010 Strategic Plan, ARHA 2012-2022 Strategic Plan, Braddock Metro Neighborhood plan, and the BEMP. In memos dated April 22, 2015; September 12, 2015; February 4, 2016; and February 20, 2016; City staff recommended demolition of the Ramsey Homes.

The United States Department of Housing and Urban Development (HUD) has determined that redevelopment of the Ramsey Homes site will constitute a federal undertaking; therefore, the project requires compliance with Section 106 of the National Historic Preservation Act. HUD has also determined that the City of Alexandria Office of Housing is the responsible entity relevant to Section 106 review. Section 106 of 36 CFR 800.2(c) (4) allows federal agencies and their designees to authorize an applicant or group of applicants to initiate consultation with the SHPO and other consulting parties. In order to accomplish the Project, the City of Alexandria Office of Housing has delegated Section 106 consultation activities to the Virginia Housing Development LLC of Alexandria, Virginia; Virginia Housing Development LLC (whose sole member is ARHA) is in turn allowing the coordination of Section 106 activities to be administered by the consultant, Wetland Studies and Solutions, Inc. (WSSI) of Gainesville, Virginia.

The project area includes four public housing buildings with 15 units. The buildings were constructed as temporary housing for defense workers in 1942 and were previously recorded with the Virginia department of Historic Resources (DHR) as seven resources in 2006 in anticipation of nominating the "Uptown/Parker-Gray Historic District" (DHR No. 100-0133) to the VLR and NRHP.

Building I.	912 and 914 Wythe Street (DHR No. 100-0133-1328)
	625 and 627 Patrick Street (DHR No. 100-0133-0754)
Building II.	619, 621, and 623 Patrick Street (DHR No. 100-0133-0751)
Building III.	609 and 611 Patrick Street (DHR No. 100-0133-0747)
	613 and 615 Patrick Street (DHR No. 100-0133-0749)

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Building IV. 605 and 607 Patrick Street (DHR No. 100-0133-0745)
913 and 915 Pendleton Street (DHR No. 100-0133-0948)

Each resource contributes to the VLR district listed in 2008 and the NRHP district listed in 2010.

A *Documentary Study* has been completed for the property; the research revealed that the study area has a moderate to high probability of containing late 18th century – 20th century artifact deposits and archeological features that could potentially provide significant information about domestic development in the Parker-Gray Historic District within the City of Alexandria, Virginia. Additionally, one previously recorded archeological site has been mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. According to the DHR site record, the resource has not been evaluated for eligibility to the NRHP. As such, the study area is known to include cultural deposits associated with the historic Civil War-era military occupation of the city. Mapping provided by Alexandria Archaeology, showing testing conducted by Alexandria Archaeology in 1991 is included as Attachment A.

This Scope of Work is for an *Archaeological Evaluation* of the Ramsey Homes site and, in order to determine the presence/absence of significant archeological resources, calls for initial shovel test pit investigation, the excavation of test units, and exploratory machine trenching in locations where manual testing is not feasible, if necessary.

The initial archeological investigations described herein were designed to be conducted prior to the demolition of the Ramsey Homes; additional investigations (i.e. archeological monitoring) are proposed for the project's demolition phase. Miss Utility will be informed prior to any excavations.

If a significant site(s) is discovered as a result of the field work, the site(s) will be registered with the Virginia Department of Historic Resources (DHR). All aspects of this investigation will adhere to OSHA regulations and will comply with the *City of Alexandria Archaeological Standards* dated January 1996, 2011 DHR guidelines for archeological survey, and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.* Additionally, as this project will be subject to review under Section 106 of the National Historic Preservation Act, the investigation report will also be submitted to the DHR for review and comment, and subsequently, to all Section 106 consulting parties.

ARCHEOLOGICAL FIELD INVESTIGATIONS

Archeological field personnel will conduct a walkover and complete visual inspection of the ground surface of the project area. All structures, visible disturbances, artifact scatters or other manmade features observed will be accurately mapped.

Shovel Test Pits

Archeological field personnel will excavate shovel test pits (STPs) on a grid at 25-foot intervals

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in all portions of the property. Judgemental metal detector survey may also be employed at the discretion of the Principal Archeologist. Areas previously investigated by Alexandria Archaeology will be retested during the Archaeological Evaluation. It is anticipated that the excavation of approximately 35-40 STPs will be needed.

The location of each STP will be mapped and documented with field notes. STPs will measure at least 15 inches in diameter and will be excavated by natural soil levels and will stop at the limit of manual excavation (i.e. at a depth of about 3-feet below ground surface or when impervious surfaces or impasses are encountered) or where gleyed soils, gravel, water, or well developed B horizons too old for human occupation are reached. Soil horizons will be classified according to standard pedological designations. Soil profiles will be made of at least one profile within each test unit, with soil descriptions noted in standard soil terminology (A, Ap, B, C, etc.). Soil colors will be described using the Munsell Soil Color Chart designations.

Any clearly modern fill horizons and/or modern surface soil may, at the discretion of the project archeologist, be discarded without screening; historic plowed soils, historic surfaces or historic fill soils, loess soils, and paleosols will be screened through 1/4-inch mesh hardware cloth screens.

Recovered artifacts will be bagged and labeled by unit number and by soil horizon. Artifacts will be bagged and labeled by unit number and by soil horizon.

Test Units and Features

Based on the results of testing conducted by Alexandria Archaeology in 1991, it is anticipated that additional work will be needed to evaluate the significance of archeological deposits or features found during the 1991 investigations and/or the shovel test pit program detailed above. It is anticipated that a minimum of six (6) hand excavated test units (3 x 3 feet) will be necessary to test potentially significant archeological features and buried ground surfaces found in test trenches. The test units will be excavated stratigraphically through the intact buried surface and all soil from the test unit will be screened through 1/4-inch mesh hardware cloth screens. Soil profiles will be made of representative units, with soil colors described using the Munsell Soil Color Chart designations. Artifacts will be bagged and labeled by unit number and by soil horizon. The work will be documented with field notes, sketch plans, and photographs. Any features encountered will be mapped and made available for inspection by Alexandria Archaeology. Decisions regarding the significance of features, feature sampling, and the need for additional testing will be made in consultation with Alexandria Archaeology.

Machine-Excavated Trenches

At locations where impervious surfaces or obstructions limit STP excavation to depths above the level where archeological deposits may occur, in consultation with Alexandria Archaeology, investigations may proceed with the mechanical excavation of backhoe trenches under archeological monitoring. The trenches, if needed, will be excavated using a backhoe equipped with a flat-lipped (smooth) bucket. Trenches will be immediately backfilled if significant features or buried surfaces are not identified. Each trench will measure approximately four (4) feet in width; a maximum of 250-linear feet of trench excavations are assumed with a maximum displacement

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of soil totaling 185 cubic yards. The trench excavations will be accurately mapped and each trench will be documented with representative photographs and soil profile drawings.

Additional STPs at 50-25 foot-foot intervals and/or test units (3 x 3 feet) will be excavated within the trenches, if needed, where the potential for archeological deposits are identified. STP excavation shall be conducted otherwise as noted above.

Resource Management Plan

A Resource Management Plan and Scope of Work for archeological treatment of significant deposits or features will be prepared and presented to Alexandria Archaeology for review and approval. If the work required under an approved Resource Management Plan is not conducted during the Archaeological Evaluation, the Plan will be included in the Archaeological Evaluation report, as noted below.

As this project will be subject to review under Section 106 of the National Historic Preservation Act, the investigation report, any approved Resource Management Plan will also be submitted to the DHR for review and comment, and subsequently, to all Section 106 consulting parties. Mitigation of significant archeological resources will only be conducted under a) a Resource Management Plan approved by Alexandria Archaeology; b) a Resource Management Plan approved by the DHR; c) a fully executed Memorandum of Agreement.

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ARCHEOLOGICAL MONITORING FOR BUILDING DEMOLITION

If required, based on the results of the Archaeological Evaluation, and/or Alexandria Archaeology requirements, archeological monitoring will be conducted during demolition of buildings and removal of foundations/concrete slabs within the project area. Such work will be documented through maintenance of daily monitoring logs and in a summary memorandum at the completion of monitoring. Any archeological deposits or cultural features found will be assessed for significance in consultation with Alexandria Archaeology. Potentially significant and significant finds will be addressed as detailed above. Results of the monitoring will be included in the Archaeological Evaluation report or in an addendum to said report.

LABORATORY WORK AND CURATION

Archeological artifacts recovered from the project area will be cleaned, stabilized (if necessary), cataloged, labeled and packaged in accordance with the guidelines set forth in the *City of Alexandria Archaeological Standards*. Organic materials that may require conservation may be recovered. Since it is not known if conservation will be necessary, it will be budgeted as an additional service.

Archeological collections recovered as a result of the Alexandria Archaeology Resource Protection Code must be curated at a facility which meets Federal standards for archeological curation and collections management as described by 36CFR Part 79. The Alexandria Archaeology Storage Facility meets these standards, and the property owner is encouraged to donate the artifact

collection to the City for curation. The archeological consultant is responsible for arranging for the donation of the artifacts with the owner and will deliver the artifacts and signed forms to the appropriate storage facility.

At the conclusion of the project, all images, field notes and forms and other field records will be submitted in digital format on a CD. In addition, the artifacts, if they are to be donated to the City, will be delivered to Alexandria Archaeology.

ARCHAEOLOGICAL EVALUATION REPORT

The *Archaeological Evaluation Report* will include the following: a public summary; the results of any additional archival and documentary research, a map of the project area; a map with excavation locations and significant features; a summary of the procedures; results of the field investigation and artifact analysis, including a distribution map or other graphics which indicate potentially significant archeological areas; an integration of the field and analysis data with the historical record.

If the investigation results in the discovery of features that require additional archeological work, the *Archaeological Evaluation Report* will include a Resource Management Plan. The *Resource Management Plan* will present a strategy, scope of work (including a map indicating locations of proposed work in relation to completed tests), and budget for further investigations. However, with the approval of Alexandria Archaeology, the results of further investigations may be combined into one report.

After completion of fieldwork, one copy of the full *Archaeological Evaluation Report* will be submitted to Alexandria Archaeology as a draft for review. Once the report is approved by the City Archaeologist, revisions will be made, and two (2) bound copies and one (1) electronic copy will be submitted to the DHR for review. Once the report is approved by the DHR, revisions will be made if necessary, and four (4) copies, one unbound with original graphics, will be submitted to Alexandria Archaeology. The report will also be submitted on a CD. All site maps and drawings will be inked or computer-generated so as to produce sharp and clear images that will result in clear photocopies or microfilms.

PUBLIC INTERPRETATION

The *City of Alexandria Archaeological Standards* require that a public summary be prepared as part of an *Archaeological Evaluation* Report. The public summary will be approximately 4 to 8 pages long with a few color illustrations. This should be prepared in a style and format that is reproducible for public distribution and use on the City's web site. Examples of these can be seen on the Alexandria Archaeology Museum website. A draft of the summary should be submitted to Alexandria Archaeology for review along with the draft of the *Archaeological Evaluation* Report. Upon approval, a master copy (hard copy as well as on CD or computer disk) will be submitted to Alexandria Archaeology. The summary and graphics should also be e-mailed to Alexandria Archaeology for publication on our web site.

In addition, if determined to be warranted by the City Archaeologist, the developer will be required

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to erect a historical marker on the property. Preparation of the written text and graphics for the marker may be carried out in close consultation with the City Archaeologist. The text will consist of two paragraphs and be up to 200 words in length. The first paragraph will describe the historical significance of the site and the second paragraph will describe the findings of the archeological investigation. The graphics will consist of four appropriate illustrations; line drawings (*e.g.*, site maps, feature drawings), historic photographs and maps, and/or other illustrations (*e.g.*, site or artifact photos) in black and white or color with captions rendered as high-quality digital copies (jpeg or tiff files). Copyright releases will be obtained and credit provided for each graphic used. The text and graphics will be submitted to Alexandria Archaeology on a CD.

The results described in the *Archaeological Evaluation Report*, as well as information from the Public Summary and Historic Market Text can be used by the developer to guide the "design of open space and the preparation of interpretive signs" within the property. As this project will be subject to review under Section 106 of the National Historic Preservation Act, additional or alternate public interpretation measures may be necessary under an executed MOA.

TASKS

The following is a summary of the tasks to be completed for City review:

1. Notify Alexandria Archaeology of the fieldwork start date. Conduct the field investigation. Alexandria Archaeology staff will conduct site inspections throughout the course of the fieldwork to facilitate decision making.

2. Process all significant artifacts and complete the analysis.

3. Produce and submit one draft *Archaeological Evaluation Report* to Alexandria Archaeology, including the public summary document and the text and graphics for the historic marker. If further archeological investigations are necessary, the evaluation report can be a letter report to accompany the *Resource Management Plan* with the final report and marker text produced after all fieldwork is completed.

4. Deliver to Alexandria Archaeology four copies and CD of the final report, final versions and CDs of the public summary, historic marker test, plus all field notes, copies of historic documents, digital images, transcriptions, forms and associated records. In addition, arrange for the donation and delivery of the artifacts to an appropriate storage facility. Alexandria Archaeology is the preferred repository and requires a City of Alexandria Deed of Gift form.

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Formats for Digital Deliverables:

1. Photographs:	.jpg.
2. Line Drawings:	.gif or .jpg as appropriate.
3. Final Report/Public Summary	Word, PageMaker and/or PDF
4. Oral History	Word
5. Catalogue:	Word, Access or Excel
6. Other Written material:	Word, Access, Excel, PageMaker or PDF as appropriate

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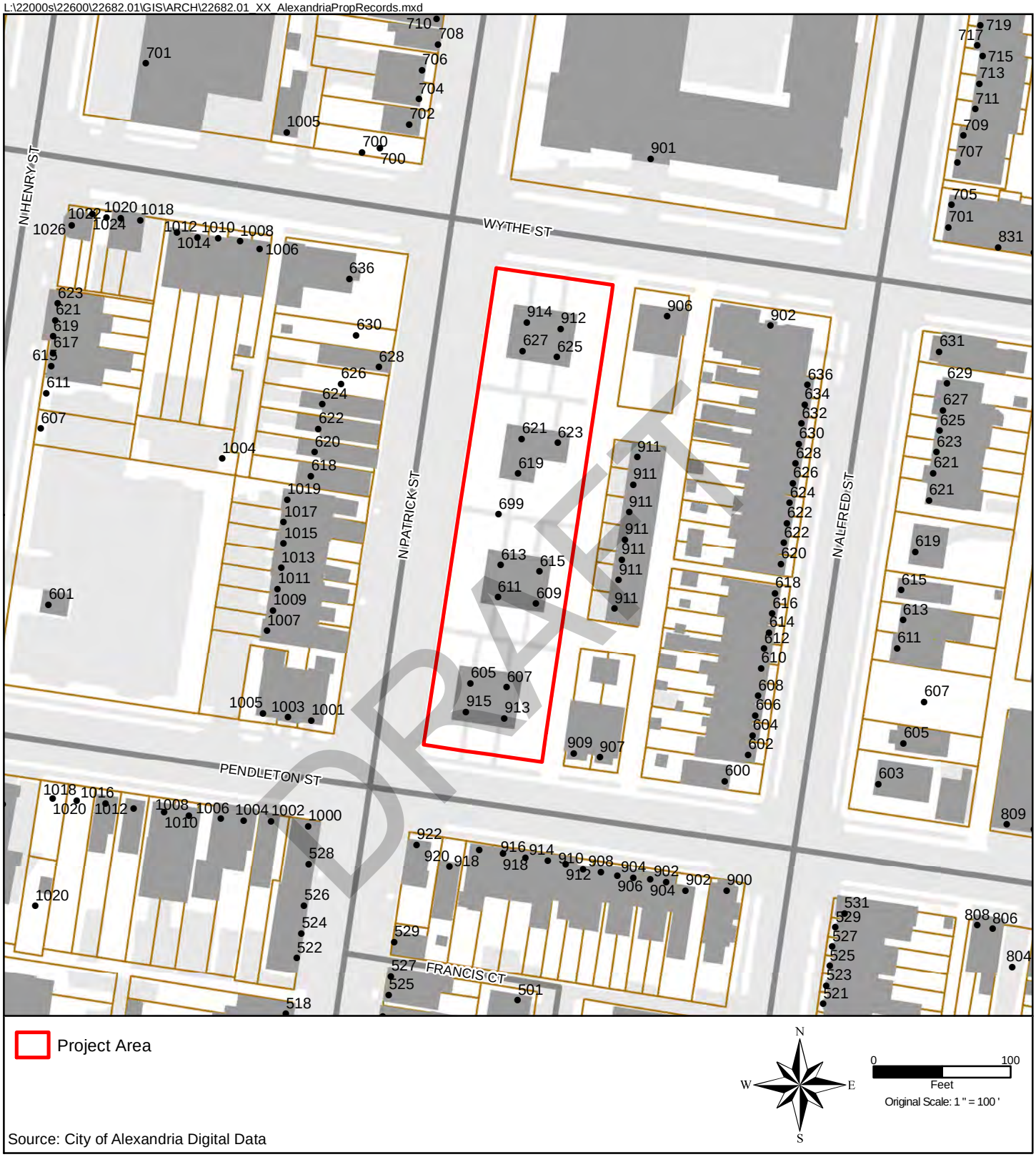

Figure 1
2015 City of Alexandria Parcel Map

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Figure 2
March 2013 Natural Color Aerial Imagery of Alexandria

Ramsey Homes
1991 Shovel Test Locations

Map Source: 2015 Orthophoto;
Civil War Quarter Master Map

N

0 25 50 100 Feet

Alexandria Archaeology
6/30/2016

Ramsey Homes
1991 Shovel Test Locations

Map Source: 2015 Orthophoto

N

0 25 50 100 Feet

Alexandria Archaeology
6/30/2016

Print Form

Alexandria Archaeology

105 North Union Street
Alexandria, Virginia 22314
(703) 838-4399

ARCHAEOLOGICAL PRESERVATION CERTIFICATION

Project: Ramsey Homes - Archeological Investigation
Date: June 24, 2016
Address: 699 N. Patrick Street
Contact: Boyd Sipe, Thunderbird Archeology
Phone Number(s): 703-679-5623
Address: Gainesville, Virginia

ATTACH MAP: impact areas: **red** resource areas: **blue**
archaeological excavation areas: **green**

1. Proposed Action(s): Expected Date: July 1, 2016

- [ ] Demolition
- [ ] Construction
- [ ] Grading
- [ ] Filling
- [ ] Utility Trenches
- [x] Other (specify) Archeological hand excavations; machine excavations possible

2. Statement of Archaeological Significance:

- [ ] Determined Significant
- [x] Potentially Significant
- [ ] No Significance

Discussion: The study area is known to include cultural deposits associated with the historic Civil War-era military occupation of the city. One previously recorded archeological site has been mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. The resource has

3. Archaeological Impact:

- [ ] Proposed action will alter or destroy significant resources.
- [ ] Proposed action will not affect significant resources.
- [x] Unknown until testing occurs.

Discussion:

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Office of Historic Alexandria
City of Alexandria, Virginia

4. Proposed Archaeological Preservation Action:

- [x] Test and then conduct data recovery, if warranted
- [ ] Data Recovery (attach methods and design)
- [ ] Sampling (attach strategy)
- [ ] Recordation (attach methods)
- [ ] No preservation actions

Discussion:

Per the Scope of Work (SOW) approved by Alexandria Archaeology on June 23, 2016 (Attached).

5. Coordination and Scheduling of Archaeological Work in Relation to Proposed Action:

6. Dates of Fieldwork: From July 1, 2016 to December 31, 2016

I certify to the best of my knowledge that the above information is accurate and that the proposed actions will not endanger archaeological resources which may be significant for our understanding of Alexandria's heritage.

June 24, 2016

Date

Name: Boyd Sipe

Position/Company: Thunderbird Archeology/WSSI

Address: 5300 Wellington Branch, Suite 100
Gainesville, VA 20155

Phone: (703) 679-5623

APPROVED BY CITY ARCHAEOLOGIST:

Date

City Archaeologist

THIS CERTIFICATION IS IN EFFECT

FROM TO

DRAFT

City of Alexandria
Checklist of Supplemental Approvals
for Archaeological Excavation

Project Name: Ramsey Homes - Archeological Investigation Date: June 24, 2016

1. Will you be excavating within 30 feet of a tree that is 6 or more inches in diameter at breast height?

☒ NO - Go to Question 2.

☐ YES - All trees that are 6 or more inches in diameter at breast height must be accurately located and identified on the testing strategy map, including species and size information [trunk diameter and DBH]. Also, include a statement of how trees will be protected (Tree Protection Plan) in the archaeological Scope of Work. Submit a copy of the testing strategy map and Tree Protection Plan to the City Arborist for his review, and obtain his signature.

2. Will the archaeological activities governed by your Site Plan disturb 2500 or more square feet of soil?

Total Length ____ feet x Total Width ____ feet = 1100 square feet of

☒ Test Units ☒ Machine Trenches

Depth of Excavation 1.5 feet.

☒ NO - Go to Question 3.

☐ YES - You must provide the City of Alexandria Department of Transportation and Environmental Services (T&ES) with an erosion control plan. Indicate the ground disturbance locations, the depth of disturbance, and the placement of erosion control devices (e.g. siltation fences). This plan must be approved by the Site Plan Coordinator.

3. Will you be digging in a Resource Protection Area designated by the Chesapeake Bay Preservation Act? Chesapeake Bay Preservation Act Regulations, with maps, are available at Alexandria Archaeology, and in City Hall, Room 4130.

☒ NO - Go to Question 4.

☐ YES - If you will be digging any amount of soil in a RPA, you come under provisions of the Chesapeake Bay Preservation Act. However, archaeology may be exempted from the provisions of this act. To receive an exemption, write a letter of request to Thomas F. O'Kane, Director of T&ES, Box 178, City Hall, Alexandria, VA 22313.

4. Will you be digging trenches deeper than 5 feet, or into Marine Clay?

☒ NO - Go to Question 6.

☐ YES - OSHA regulations require all trenches deeper than 4 feet to be shored, or stepped back. Trenches in Marine Clay must also be shored or stepped back. Present a summary of which method(s) you will use in the excavation to the Site Plan Coordinator, or his representative, for his approval.

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5. Do the historic land uses on your property indicate that contaminated soils may be present? If your historical data is inconclusive, consult the map of suspected contamination sites and the 1945 aerial photograph series in Room 4130 of City Hall.

☒ NO - Go to Question 5.

☐ YES - If contaminated soils are found, appropriate steps must be taken to preserve the health of the excavators, and to protect the ground water. Do not backfill contaminated soil into non-contaminated soil strata.

A. Ground water protection measures should be included in the Soil Erosion Plan. If you do not need to file a Soil Erosion Plan, present a statement of how you plan to contain the toxic excavated material to the Site Plan Coordinator, for his approval.

B. Excavators must have the proper training and equipment to protect them from harmful pollutants present on some industrial and landfill sites. Present a written summary of your planned Health and Safety measures to the Environmental Quality Manager (Health Department) or his representative, for his approval.

6. Are there known or suspected burials on your site? Do you plan to excavate the burials?

☒ NO

☐ YES - A court order must be obtained to exhume human remains. You must also obtain a permit from the Virginia Department of Historic Resources, in accordance with VR 390-01-02. Copies of VR 390-01-02 are available at Alexandria Archaeology. The Virginia Department of Historic Resources is a legally interested party in any request for a court order to remove an historic cemetery.

REMINDERS

Don't forget to call Miss Utility (703-559-0100) to clear your excavations.

Proper protection (e.g. hard hats, gloves, etc.) should be worn by all field personnel working with heavy machinery and/or contaminated soil.

I certify to the best of my knowledge that the above information is accurate.

June 24, 2016
Date

Boyd Sipe
Name

Thunderbird Archeology/WSSI
Position and Company

Gainesville, VA (703) 679-5623
Address & Telephone Number

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City of Alexandria
Supplemental Approvals for Archaeological Excavation

Project Name: Ramsey Homes- Archeological Investigation Date: June 24, 2016

1. Who signs?: John Noelle, City Arborist, 1108 Jefferson Street, 703-838-4999.

Impact of ground disturbance on existing trees: The applicant has obtained my approval of the excavation strategy and submitted an acceptable tree protection plan (copy attached), if necessary.

Signature Date

2-5A. Who signs?: Shanna Sizemore, Site Plan Coordinator, T&ES, City Hall, Room 4130.

Soil Erosion Control: An approved erosion control plan is on file with the Department of Transportation and Environmental Services.

Signature Date

Chesapeake Bay Preservation Act: A letter of exemption from the provisions of this act is attached.

Signature Date

Deep Trenching or Marine Clay: An approved plan for shoring or stepping back the trenches is attached.

Signature Date

Contaminated Soil: An approved plan for protecting ground water and natural soil is attached.

Signature Date

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5B. Who signs? William Skrabeck, Division Chief Phone: 703-519-3400 ext.163 or 703-838-4334

Environmental Quality Department of Transportation & Environmental Services City Hall, Room 3000 (Box 66)

Contaminated Soil: An approved plan for protecting workers' health and safety is attached, or is part of the approved erosion control plan.

Signature Date

6. Who signs? Pamela J. Cressey, City Archaeologist, 105 N. Union Street 703-838-4399.

Burials: Appropriate court orders and Virginia Department of Historic Resources permits are attached.

Signature Date

ALEXANDRIA ARCHAEOLOGY

ARCHAEOLOGICAL PRESERVATION CERTIFICATION

Project: Ramsey Homes - Archeological Investigation

Date: June 28, 2016

Address: 699 N. Patrick Street

Contact: Boyd Sipe, Thunderbird Archeology

Phone Number(s): 703-679-5623

Address: 5300 Wellington Branch Dr., Gainesville, VA

ATTACH MAP: impact areas: **red** resource areas: **blue**
archaeological excavation areas: **green**

1. Proposed Development Action(s): Expected Date:___ _____

☐ Demolition ☐ Construction ☐ Grading
☐ Filling ☐ Utility Trenches
☒ Other (specify) _Archeological hand excavations; machine excavations possible_____

2. Statement of Archaeological Significance:

☐ Determined significant ☒ Potentially Significant
☐ No Significance

Description: The study area is known to include cultural deposits associated with the historic Civil War-era military occupation of the city. One previously recorded archeological site has been mapped within the study area; site 44AX0160 represents a probable Civil War-era military barracks site that was investigated by Alexandria Archaeology in 1991. The resource has not been evaluated for eligibility to the NRHP.

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3. Archaeological Impact:

☐ Proposed action will alter or destroy significant resources.
☐ Proposed action will not affect significant resources.
☒ Unknown until testing occurs

Description:

4. Proposed Archaeological Preservation Action:

☒ Test and then conduct data recovery, if warranted
☐ Data Recovery (attach methods and design)
☐ Sampling (attach strategy)—see below.
☐ Recordation (attach methods)
☐ No preservation actions

Description: Per the Scope of Work (SOW) approved by Alexandria Archaeology on June 23, 2016 (Attached).

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5. Coordination and Scheduling of Archaeological Work in Relation to Proposed Action:

6. Dates of Fieldwork: From July 5, 2016 to December 31, 2016 .
m. d. y. m. d. y.

I certify to the best of my knowledge that the above information is accurate and that the proposed actions will not endanger archaeological resources which may be significant for our understanding of Alexandria's heritage.

June 28, 2016
Date

Boyd Sipe, M.A., RPA
Name

Manager - Archeology, Thunderbird Archeology/WSSI
Job Title and Company Name

5300 Wellington Branch, Suite 100 Gainesville, VA 20155
Address

(703) 679-5623
Telephone

APPROVED BY CITY ARCHAEOLOGIST:

Date

City Archaeologist

THIS CERTIFICATION IS IN EFFECT

FROM _____ **TO**_____
m. d. y. m. d. y.

DRAFT

City of Alexandria
Checklist of Supplemental Approvals
for Archaeological Excavation

Project Name: Ramsey Homes - Archeological Investigation Date: June 28, 2016

1. Will you be excavating within 10 feet of a tree that is 6 or more inches in diameter at breast height?

__x__ NO - Go to Question 2.

_____ YES - All trees that are 6 or more inches in diameter at breast height must be accurately located and identified on the testing strategy map, including species and size information (trunk diameter and DBH). Also, include a statement of how trees will be protected. (Tree Protection Plan) in the archaeological Scope of Work. Submit a copy of the testing strategy map and Tree Protection plan to the City Arborist for his review, and obtain his signature.

2. Will the archaeological activities governed by your Site Plan disturb 2500 or more square feet of soil?

Total Length_____ feet x Total Width _____ feet = 1100 square feet of

x Test Units x Machine Trenches

Depth of Excavation 1.5 feet.

__x__ NO - Go to question 3.

_____ YES - You must provide the City of Alexandria Department of Transportation and Environmental Services (T&ES) with an erosion control plan. Indicate the ground disturbance locations, the depth of disturbance, and the placement of erosion control devices (e.g., siltation fences). This plan must be approved by the Site Plan Coordinator.

3. Will you be digging in a Resource Protection Area designated by the Chesapeake Bay Preservation Act? Chesapeake Bay Preservation Act Regulations, with maps, are available at Alexandria Archaeology, and in City Hall, Room 4130.

__x__ NO - Go to Question 4.

_____ YES - If you will be digging any amount of soil in a RPA, you come under provisions of the Chesapeake Bay Preservation Act. However, archaeology may be exempted from the provisions of this act. To receive a exemption, write a letter of request to Thomas F. O'Kane, Director of T&ES, Box 178, City Hall, Alexandria, VA 22313.

4. Will you be digging trenches deeper than 5 feet, or into Marine Clay?

__x__ NO - Go to Question 6.

_____ YES - OSHA regulations require all trenches deeper than 5 feet to be shored, or stepped back. Trenches in Marine Clay must also be shored or stepped back. Present a summary of which method(s) you will use in the excavation to the Site Plan Coordinator, or his representative, for his approval.

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5. Do the historic land uses on your property or information gathered by the project developer indicate that contaminated soils may be present? If your historical data is inconclusive, consult the map of suspected contamination sites and the 1945 aerial photograph series in Room 4130 of City Hall.

__x__ No - Go to Question 5.

_____ Yes - If contaminated soils are found, appropriate steps must be taken to preserve the health of the excavators, and to protect the ground water. Do not backfill contaminated soil into non-contaminated soil strata.

A. Ground water protection measures should be included in the Soil Erosion Plan. If you do not need to file a Soil Erosion Plan, present a statement of how you plan to contain the toxic excavated material to the Site Plan Coordinator, for his approval.

B. Excavators must have the proper training and equipment to protect them from harmful pollutants present on some industrial and landfill sites. Present a written summary of your planned Health and Safety measures to the Environmental Quality Manager (Health Department) or his representative, for his approval.

6. Are there known or suspected burials on your site? Do you plan to excavate the burials?

__x__ NO

_____ YES – A court order must be obtained to exhume human remains. You must also obtain a permit from the Virginia Department of Historic Resources, in accordance with VR 390-01-02. Copies of VA 390-01-02 are available at Alexandria Archaeology. The Virginia Department of Historic Resources is a legally interested party in any request for a court order to remove an historic cemetery.

REMINDERS

Don't forget to call Miss utility (703) 559-0100) to clear your excavations.

All field personnel working with heavy machinery and/or contaminated soil should wear proper protection (e.g., hard hats, gloves, etc.). Everyone Must comply with all OSHA standards.

I certify to the best of my knowledge that the above information is accurate.

June 28, 2016
Date

Boyd Sipe, M.A., RPA
Name

Manager - Archeology, Thunderbird Archeology/WSSI
Job Title and Company Name

5300 Wellington Branch Dr. Gainesville, VA 20155, (703) 679-5623
Address & Telephone Number

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City of Alexandria
Supplemental Approvals for Archaeological Excavation

Project Name: Ramsey Homes - Archeological Investigation Date: June 28, 2016

1. Who signs?: John Noelle, City Arborist, 1108 Jefferson Street, 703-746-5499.
John.Noelle@alexancdriava.gov
Impact of ground disturbance on existing trees: The applicant has obtained my approval of the excavation strategy and submitted an acceptable tree protection plan (copy attached), if necessary.

_____
Signature & Date

2. Who signs?: Shanna Austin, Site plan Coordinator, T&ES, City Hall, Room 4130, 703-746-4063.
Shanna.Austin@alexandriava.gov
Soil Erosion Control: An approved erosion control plan is on file with the Department of Transportation and Environmental Services.

_____
Signature & Date

Chesapeake Bay Preservation Act: A letter of exemption from the provisions of this act is attached.

_____
Signature & Date

Deep Trenching or Marine Clay: An approved plan for shorting or stepping back the trenches is attached.

_____
Signature & Date

Contaminated Soil: An approved plan for protecting ground water and natural soil is attached.

_____
Signature & Date

3. Who signs?: Khoa Tran, Environmental Quality Division, T&ES, City Hall, Room 3900, 703-746-4070, KhoaDinh.Tran@alexandriava.gov

Contaminated Soil: An approved plan for protecting workers' health and safety is attached, or is part of the approved erosion control plan.

_____
Signature & Date

4. Who signs?: Francine Bromberg, City Archaeologist, 105 N. Union Street, #327, 703-746-4399.
Francine.Bromberg@alexandriava.gov
Burials: Appropriate court orders and Virginia Department of Historic Resources permits are attached.

_____
Signature & Date

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APPENDIX II
Artifact Inventory

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RAMSEY SITE 44AX0160 EVALUATION
ARTIFACT INVENTORY

STP 01, Fill 1, Lot #1

Ceramics

1 pearlware sherd, underglaze polychrome hand painted decoration, flat vessel (1795-1815, South 1977; 1780-1835, Miller 1992)
1 whiteware sherd, polychrome hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

2 amber cylindrical bottle sherds, automatic bottle machine (1907-present)
1 clear cylindrical bottle sherd, base fragment, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, base fragment, duraglas stippling, automatic bottle machine (1940-present)
4 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 light aqua cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 light green cylindrical bottle sherd, embossed "...T...", duraglas stippling, automatic bottle machine (1940-present)
1 light green cylindrical bottle sherd, unidentified embossing, automatic bottle machine (1907-present)
2 light green cylindrical bottle sherds, duraglas stippling, automatic bottle machine (1940-present)
1 unidentified clear spall

Miscellaneous

4 brick fragments, 50.5 grams
2 coke fragments, 0.9 grams
2 oyster shell fragments, 0.9 grams
1 plastic fragment, translucent green, flat (discarded in lab)
1 plastic fragment, white, flat (discarded in lab)

STP 01, Fill 2, Lot #2

Miscellaneous

1 brick fragment, 3.9 grams
1 oyster shell fragment, 26.3 grams

STP 01, Apb, Lot #3

Miscellaneous

2 brick fragments, 11.6 grams
4 oyster shell fragments, 0.4 grams

STP 02, Fill 1, Lot #4

Ceramics

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1 whiteware sherd, black transfer printed, indeterminate vessel shape (1820-1900+, South 1977; 1825-1875+, Miller 1992)
1 whiteware sherd, blue hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1860+, Miller 1992)

1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)
4 clear cylindrical bottle/jar sherds, automatic bottle machine, two scratched (1910-present)
1 green cylindrical bottle sherd, base fragment, patinated
8 light green cylindrical bottle sherds, duraglas stippling, automatic bottle machine (1940-present)
1 unidentified pale green sherd, flat, patinated

Metal

3 cut nail fragments, unidentified heads (post-1790)
1 steel safety pin fragment (discarded in lab)
1 unidentified ferrous metal fragment, flat
1 unidentified ferrous metal fragment, flat, circular
1 unidentified ferrous metal fragment, flat, rectangular
1 wire nail fragment (1890-present)

Miscellaneous

1 bone fragment
4 brick fragments, 5.1 grams
2 coal fragments, 2.8 grams
1 plastic fragment, curved, brown (discarded in lab)

STP 02, Apb, Lot #5

Ceramics

1 kaolin pipe stem fragment -- indeterminate bore hole diameter
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, unidentified blue decoration, hollow vessel (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)

Glass

2 7-up green cylindrical bottle sherds, automatic bottle machine (post-1934)
1 clear manganese cylindrical bottle/jar sherd (1880-1915)

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1 light aqua cylindrical bottle sherd, patinated

Metal

3 cut nail fragments (post-1790)

2 cut nail fragments, unidentified heads (post-1790)

Miscellaneous

1 coal fragment, 0.1 grams

STP 03, Fill 1, Lot #6

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

1 clear cylindrical bottle/jar sherd, unidentified embossing, automatic bottle machine (1910-present)

2 olive amber cylindrical bottle/jar sherds (mend), chilled iron mold (1880-1930)

1 olive green cylindrical bottle sherd, contact mold, patinated (1810-1880)

STP 03, Apb, Lot #7

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

1 unidentified light aqua sherd, flat

1 unidentified light green spall

1 windowpane sherd, potash (pre-1864)

Metal

1 cut nail fragment (post-1790)

Miscellaneous

3 brick fragments, 1.7 grams

1 coke fragment, 0.6 grams

STP 04, Fill 1, Lot #8

Glass

1 clear cylindrical bottle/jar sherd, embossed "...S...", automatic bottle machine (1910-present)

2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

1 light green cylindrical bottle sherd, unidentified embossing, automatic bottle machine (1907-present)

1 olive green cylindrical bottle sherd, contact mold, patinated (1810-1880)

3 unidentified light aqua sherds, flat, patinated

Metal

2 cut nail fragments (mend), unidentified head (post-1790)

1 unidentified ferrous metal fragment, flat, thin

STP 04, Apb, Lot #9

Ceramics

1 kaolin pipe bowl fragment, unidentified molded rim decoration, stained

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1 yellowware sherd, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)

Glass

1 aqua cylindrical bottle/jar sherd, patinated
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 unidentified clear spall, patinated
1 unidentified light aqua sherd, flat, stained, patinated

Metal

2 cut nail fragments, unidentified head (post-1790)

Miscellaneous

2 bone fragments
15 brick fragments, 38.8 grams
1 coal fragment, 0.9 grams

Prehistoric

1 quartz biface thinning flake, whole, 10.9 mm x 6.7 mm

STP 05, Fill 1, Lot #10

Ceramics

1 ironstone sherd, undecorated, rim fragment, flat vessel, 8 inch rim diameter (1840-1900+, Miller 1992)

Glass

1 amber cylindrical bottle sherd, patinated
3 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

Metal

1 cut nail fragment (post-1790)

Miscellaneous

2 brick fragments (mend), 210.9 grams

STP 06, Fill 1, Lot #11

Ceramics

1 ironstone sherd, undecorated, base fragment, flat vessel, indeterminate base diameter (1840-1900+, Miller 1992)
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, underglaze blue hand painted decoration, indeterminate vessel shape (1780-1820, South 1977; 1780-1830, Miller 1992)
1 whiteware sherd, undecorated, flat vessel (1820-1900+, South 1977; Miller 1992)

Glass

1 7-up® green cylindrical bottle sherd, automatic bottle machine (post-1934)
1 clear cylindrical bottle/jar sherd, crushed
1 clear cylindrical bottle/jar sherd, embossed "...GRA...", automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds (mend), base fragments,

DRAFT

automatic bottle machine, crushed (1910-present)
8 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 clear manganese cylindrical bottle/jar sherd, scratched, patinated (1880-1915)
2 honey amber cylindrical bottle/jar sherds (mend), duraglas stippling, automatic bottle machine (1940-present)
1 orange amber cylindrical bottle sherd, scratched, patinated
1 unidentified clear spall
1 very pale green cylindrical bottle sherd, automatic bottle machine (1907-present)

Metal
1 unidentified ferrous metal fragment, flat
2 wire nail fragments (1890-present)

Miscellaneous
1 bone fragment
4 brick fragments, 41.2 grams
2 composite fragments, flat, black, probable fiberboard (sample retained), 3.8 grams
2 oyster shell fragments, 4.4 grams
2 plastic cap fragments, curved, orange (discarded in lab)
1 plastic fragment (discarded in field)
1 plastic fragment, curved, white (discarded in lab)
1 plastic fragment, flat, clear, base fragment, stained (discarded in lab)
1 vinyl record fragment, flat, black, ribbed

STP 07, Fill 1, Lot #12

Ceramics
1 gray and buff bodied coarse stoneware sherd, unglazed interior, clear salt glazed exterior, hollow vessel
1 hard paste porcelain sherd, undecorated, hollow vessel
1 whiteware sherd, blue transfer printed, indeterminate vessel shape (1820-1900+, South 1977; 1830-1865+, Miller 1992)

Glass
1 7-up® green cylindrical bottle sherd, automatic bottle machine (post-1934)
1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)
1 clear cylindrical bottle/jar sherd, base fragment, unidentified embossing, automatic bottle machine (1910-present)
4 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, scratched, patinated
1 light aqua cylindrical bottle/jar sherd, automatic bottle machine (1907-present)
1 olive green cylindrical bottle sherd, contact mold (1810-1880)

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3 unidentified pale aqua sherds, flat, patinated
4 windowpane sherds, potash (pre-1864)

Metal

1 cut nail fragment, unidentified head (post-1790)
1 wire nail fragment, pulled (1890-present)

Miscellaneous

31 brick fragments, 198.0 grams
1 coke fragment, 3.1 grams
1 mortar fragment with brick attached, 80.9 grams
1 mortar fragment, 1.8 grams
1 oyster shell fragment, 1.4 grams
1 plastic fragment, curved, black (discarded in lab)
1 slag fragment, 4.3 grams

STP 08, Fill 1, Lot #13

Ceramics

1 hard paste porcelain sherd (Continental European), undecorated, hollow vessel
2 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, pink hand painted decoration, indeterminate vessel shape (1820-1900+, South; 1825-1860+, Miller 1992)

Glass

1 7-up® green cylindrical bottle sherd, applied color label shadow "...S PAT. ...", base fragment, base embossed "...WA...", automatic bottle machine (post-1934)
2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 clear manganese cylindrical bottle/jar sherd, scratched (1880-1915)
1 clear square/rectangular bottle sherd, automatic bottle machine (1910-present)
1 light aqua cylindrical bottle/jar sherd, automatic bottle machine (1907-present)

Metal

2 cut nail fragments, unidentified head (post-1790)

Miscellaneous

2 brick fragments, 10.1 grams
2 coke fragments, 0.6 grams
2 oyster shell fragments, 2.0 grams

STP 08, Apb, Lot #14

Ceramics

1 pearlware sherd, unidentified green decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
4 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1860+, Miller 1992)

DRAFT

1 whiteware sherd, brown transfer printed, hollow vessel (1820-1900+, South 1977; 1825-1875+, Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, white slipped interior, hollow vessel (1830-1940, Miller 1992)

Glass
2 clear multi-sided bottle sherds, scratched, patinated

Metal
1 cut nail fragment, unidentified head (post-1790)

Miscellaneous
1 brick fragment, glazed, 37.0 grams
10 brick fragments, 62.7 grams
2 oyster shell fragments, 5.2 grams
1 slag fragment, 0.7 grams

STP 09, Fill 1, Lot #15

Glass
1 blue and white swirled marble, machine made (post-1902)
1 clear cylindrical bottle/jar sherd, duraglas stippling, automatic bottle machine (1940-present)
4 light green cylindrical bottle sherds (mend), applied color label "...COL...", automatic bottle machine (post-1934)

Miscellaneous
1 plastic cylinder fragment, base fragment, tapered tube (discarded in lab)

STP 09, Apb, Lot #16

Ceramics
1 pearlware sherd, green shell edge decoration, scalloped rim fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; 1800-1830, Miller 1992)
1 pearlware sherd, undecorated, flat vessel (1780-1830, South 1977; Miller 1992)

Glass
1 clear cylindrical bottle sherd, embossed "...L LAW FO.../...SE OF THIS..", automatic bottle machine (1910-present)
1 unidentified clear spall

Metal
1 cut nail fragment (post-1790)

STP 10, Fill 1, Lot #17

Ceramics
1 hard paste porcelain sherd (Continental European), undecorated, hollow vessel
1 ironstone sherd, undecorated, flat vessel (1840-1900+, Miller 1992)

DRAFT

1 pearlware sherd, undecorated, hollow vessel, stained (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue hand painted decoration, flat vessel (1820-1900+, South 1977; 1830-1860+, Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, embossed "...THIS B...", automatic bottle machine (1910-present)
9 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, ribbed, automatic bottle machine (1910-present)
1 light aqua cylindrical bottle/jar sherd, automatic bottle machine (1907-present)
1 light olive green cylindrical bottle sherd, patinated
2 unidentified clear spalls

Metal

1 cut nail fragment, unidentified head (post-1790)

Miscellaneous

3 brick fragments, 228.6 grams
1 plastic bottle cap fragment (post-1947, Miller 2000) (discarded in field)
1 plastic wrapper fragment (discarded in field)

STP 10, Fill 2, Lot #18

Ceramics

1 pearlware sherd, underglaze polychrome hand painted decoration, indeterminate vessel shape (1795-1815, South 1977; 1780-1835, Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, unidentified embossing, automatic bottle machine (1910-present)
1 clear manganese cylindrical bottle/jar sherd, scratched, stained (1880-1915)
1 clear manganese cylindrical tableware sherd, molded (1880-1915)
1 honey amber cylindrical bottle sherd, embossed "...O..." and dots, automatic bottle machine (1907-present)
1 honey amber cylindrical bottle sherd, unidentified embossing, automatic bottle machine (1907-present)
10 honey amber cylindrical bottle sherds, automatic bottle machine (1907-present)
1 light aqua cylindrical bottle sherd, patinated
1 light green cylindrical bottle sherd, rounded lip finish, patinated

Metal

1 unidentified nail fragment

Miscellaneous

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1 brick fragment, 1.1 grams

STP 11, Fill 1, Lot #19

Glass

1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)
1 dark olive green cylindrical bottle sherd, scratched, patinated
2 olive green multi-sided bottle sherds (mend), patinated
2 unidentified light aqua sherds, flat, patinated
2 unidentified light green sherds, flat
1 windowpane sherd, potash (pre-1864)

Metal

3 cut nail fragments, unidentified head (post-1790)
1 unidentified carbon steel fragment, curved, squared edge with groove one side, flared tapered edge one site, possible pipe fitting

Miscellaneous

1 bone fragment
3 brick fragments, 24.6 grams
1 oyster shell fragment, 7.6 grams
1 plastic comb fragment

STP 11, Apb, Lot #20

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue transfer printed, flat vessel (1820-1900+, South 1977; 1830-1865+, Miller 1992)

Glass

1 olive green cylindrical bottle sherd, stained, patinated
1 unidentified pale aqua sherd, flat, patinated
1 windowpane sherd, potash (pre-1864)

Miscellaneous

9 brick fragments, 3.8 grams
2 coal fragments, 7.9 grams
2 oyster shell fragments, 1.5 grams
2 slag fragments, 17.8 grams
1 slate fragment, 21.4 grams

STP 12, Fill 1, Lot #21

Ceramics

1 redware sherd, unglazed interior and exterior, hollow vessel

Glass

1 clear cylindrical bottle sherd, capseat lip finish fragment, milk bottle, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear square gemstone, faceted, flat back, holes three sides, stained, patinated

Metal

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1 wire nail fragment, pulled (1890-present)

Miscellaneous

1 mortar fragment, 11.2 grams

STP 12, Apb, Lot #22

Glass

1 unidentified pale aqua sherd, flat, patinated

STP 13, Fill 1, Lot #23

Glass

1 Ball blue cylindrical canning jar sherd, automatic bottle machine (1909-1938)
1 clear cylindrical bottle/jar sherd, scratched, patinated
11 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, textured pattern, automatic bottle machine (1910-present)

Miscellaneous

1 plastic fragment (discarded in field)

STP 13, Apb, Lot #24

Ceramics

2 pearlware sherds (mend), undecorated, flat vessel (1780-1830, South 1977; Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

STP 14, Fill 1, Lot #25

Glass

1 Ball blue cylindrical canning jar sherd, automatic bottle machine (1909-1938)
1 clear and white swirl marble, machine made (post-1902)
1 clear cylindrical bottle/jar sherd, embossed horizontal lines, automatic bottle machine (1910-present)
5 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

Metal

1 lead alloy airplane attached to cylindrical base, painted yellow, probable game piece
1 unidentified ferrous metal fragment, curved, square
1 unidentified ferrous metal fragment, possible washer with unidentified nail attached
1 wire fragment
1 wire nail fragment (1890-present)

Miscellaneous

2 brick fragments, 11.6 grams
1 oyster shell fragment, 0.4 grams
1 plastic fragment, curved, black, internally threaded, ribbed (discarded in lab)

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STP 14, Apb, Lot #26

Ceramics

- 1 gray and red bodied coarse stoneware sherd, unglazed interior, clear glazed exterior, hollow vessel
- 1 pearlware sherd, undecorated, flat vessel (1780-1830, South 1977; Miller 1992)
- 1 pearlware sherd, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
- 1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
- 1 yellowware sherd, unidentified blue decoration, hollow vessel (1830-1940, Miller 1992)

Glass

- 1 clear cylindrical bottle/jar sherd, external thread lip finish fragment, automatic bottle machine (1910-present)
- 2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
- 2 light green cylindrical bottle sherds, crown cap lip finish fragments, automatic bottle machine (1907-present)
- 1 unidentified clear sherd, curved, thin, patinated
- 1 unidentified clear spall

Metal

- 2 cut nail fragments (post-1790)

Miscellaneous

- 1 brick fragment, 1.7 grams
- 1 coal fragment, 1.3 grams

STP 15, Fill 1, Lot #27

Glass

- 2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
- 2 windowpane sherds, potash (pre-1864)

Metal

- 1 copper alloy one cent coin, Lincoln head penny (1938)
- 1 unidentified ferrous metal fragment, flat, rectangular

Non-Cultural

- 1 pyrite non-cultural material (NCM) (discarded in lab)

STP 15, Fill 2, Lot #28

Glass

- 1 unidentified light aqua sherd, flat, patinated

Metal

- 1 aluminum pull tab fragment (post-1962, Miller 2000) (discarded in lab)

STP 16, Fill 1, Lot #29

Ceramics

- 1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)

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Glass

3 amber cylindrical bottle sherds, automatic bottle machine (1907-present)
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 unidentified clear spall

Metal

6 cut nail fragments, unidentified heads (post-1790)
1 ferrous metal wire fragment

Miscellaneous

2 brick fragments, 9.7 grams
1 slag fragment, 5.9 grams

STP 16, Apb, Lot #30

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

Metal

2 cut nail fragments (post-1790)
1 unidentified ferrous metal fragment

Miscellaneous

4 brick fragments, 4.0 grams
3 slag fragments, 10.7 grams

STP 17, Fill 1, Lot #31

Glass

1 clear cylindrical bottle/jar sherd, embossed "...Z. (1 PT.).../...P...', automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, duraglas stippling, one base fragment, automatic bottle machine (1940-present)
2 unidentified light aqua sherds, flat
1 windowpane sherd, potash (pre-1864)

Metal

3 wire nail fragments (1890-present)

Miscellaneous

2 brick fragments, 2.8 grams

STP 17, Apb, Lot #32

Ceramics

2 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

Glass

2 gray selenium cylindrical bottle sherds, scratched (1911-1930)
1 windowpane sherd, potash (pre-1864)

Metal

1 cut nail fragment (post-1790)
2 unidentified ferrous metal fragments

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Miscellaneous

4 brick fragments, 1.2 grams
1 coal fragment, 0.2 grams

STP 18, Fill 1, Lot #33

Ceramics

1 Jackfield - type ware sherd (1740-1780, South 1977; Miller 1992)
1 pearlware sherd, undecorated, hollow vessel, stained (1780-1830, South 1977; Miller 1992)
1 red bodied coarse stoneware sewer pipe sherd (discarded in lab)
1 redware sherd, unglazed interior, reddish-brown glazed exterior, hollow vessel

Glass

1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)
1 amber cylindrical bottle sherd, embossed "...RO...", automatic bottle machine (1907-present)
1 clear cylindrical bottle/jar sherd, large mouth external thread lip finish, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, unidentified embossing, automatic bottle machine (1910-present)
11 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
3 unidentified pale aqua sherds, flat
1 unidentified pale green sherd, flat, scratched

Metal

1 ferrous metal bolt fragment, threaded

Miscellaneous

2 aluminum foil fragments (post-1947, Miller 2000) (discarded in lab)
2 brick fragments, 7.4 grams
4 plastic fragments (discarded in field)
1 Styrofoam® fragment (post-1944, Miller 2000) (discarded in lab)

STP 18, Apb, Lot #34

Ceramics

1 pearlware sherd, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

Glass

1 7-up green cylindrical bottle sherd, automatic bottle machine (post-1934)
1 amber square bottle sherd, molded, probable Drake's Plantation Bitters bottle fragment, contact mold, patinated (1862-1880, Meyer 2012)
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

DRAFT

Metal

2 cut nail fragments (post-1790)
3 unidentified ferrous metal fragments, flat, thin

Miscellaneous

3 brick fragments, 5.7 grams

STP 19, Fill 1, Lot #35

Ceramics

4 terra cotta sherds (mend), base fragments, unglazed interior and exterior, hollow vessel, indeterminate base diameter

Glass

1 amber square/rectangular bottle sherd, embossed "...ERAL.../...E-US...", automatic bottle machine (1907-present)
4 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
3 clear cylindrical bottle/jar sherds, automatic bottle machine, patinated (1910-present)

Metal

1 aluminum stay tab fragment (post-1980) (discarded in lab)
1 copper alloy one cent coin, Lincoln head penny (1971)
1 wire nail fragment (1890-present)

Miscellaneous

1 brick fragment, 2.9 grams
1 slag fragment, 0.9 grams

STP 19, Apb, Lot #36

Ceramics

1 hard paste porcelain sherd (Continental European), blue hand painted decoration, rim fragment, flat vessel, indeterminate rim diameter
1 pearlware sherd, undecorated, flat vessel, slightly burned (1780-1830, South 1977; Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

Miscellaneous

3 brick fragments, 11.0 grams

STP 20, Fill 1, Lot #37

Ceramics

3 hard paste porcelain sherds (mend) (Continental European), undecorated, indeterminate vessel shape
2 whiteware sherds (mend), undecorated, base fragments, flat vessel, 4 inch base diameter, stained (1820-1900+, South 1977; Miller 1992)

Glass

2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, patinated

DRAFT

1 clear manganese cylindrical bottle/jar sherd, chilled iron mold (1880-1915)

Metal

1 cut nail fragment, unidentified head (post-1790)

Miscellaneous

2 oyster shell fragments, 0.9 grams

STP 20, Apb, Lot #38

Ceramics

1 gray and buff bodied coarse stoneware sherd, unglazed interior, goldish-brown glazed exterior, hollow vessel

1 gray bodied coarse stoneware sherd, unglazed interior and exterior, hollow vessel

1 whiteware sherd, blue transfer printed decoration, rim fragment, hollow vessel, indeterminate rim diameter, probable oval platter (1820-1900+, South 1977; 1830-1965+, Miller 1992)

1 whiteware sherd, undecorated, rim fragment, flat vessel, 12 inch rim diameter (1820-1900+, South 1977; Miller 1992)

Glass

1 aqua cylindrical bottle/jar sherd, patinated

1 white milk glass cylindrical tableware sherd, molded dots

Metal

1 cut nail fragment, unidentified head, pulled (post-1790)

3 cut nail fragments, unidentified heads (post-1790)

Miscellaneous

1 brick fragment, 3.4 grams

1 coke fragment, 5.7 grams

1 oyster shell fragment, 12.8 grams

STP 21, Fill 1, Lot #39

Ceramics

1 refined white earthenware sherd, unidentified blue decoration, indeterminate vessel shape

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

1 cobalt cylindrical bottle/jar sherd, rounded collar lip finish fragment, automatic bottle machine (1907-present)

Metal

1 wire nail fragment (1890-present)

STP 21, Apb, Lot #40

Metal

1 cut nail fragment, pulled (post-1790)

STP 22, Fill 1, Lot #41

Glass

1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)

2 clear cylindrical bottle/jar sherds, automatic bottle machine, one

DRAFT

scratched (1910-present)
1 light green cylindrical bottle sherd, automatic bottle machine (1907-present)
1 unidentified pale aqua sherd, flat

Metal
1 cut nail fragment (post-1790)

Miscellaneous
1 plastic fragment, curved, brown (discarded in lab)

STP 22, Apb, Lot #42

Glass
1 olive green cylindrical bottle sherd, patinated

Miscellaneous
1 brick fragment, 1.1 grams
1 coal fragment, 1.3 grams

STP 23, Fill 1, Lot #43

Ceramics
1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds, unidentified blue decoration, hollow vessel (1820-1900+, South 1977; Miller 1992)

Glass
1 aqua cylindrical tableware sherd, molded decoration, scratched, patinated
1 clear cylindrical bottle sherd, embossed "...PSI COL...", textured pattern, automatic bottle machine (1910-present)
4 clear cylindrical bottle/jar sherds, automatic bottle machine, scratched (1910-present)
1 clear manganese cylindrical bottle/jar sherd, patinated (1880-1915)
1 light green cylindrical bottle sherd, automatic bottle machine (1907-present)
4 lime green cylindrical bottle sherds (mend), embossed geometric pattern, automatic bottle machine (1907-present)
1 unidentified clear sherd, curved, thin, scratched

Miscellaneous
3 brick fragments, 15.2 grams
1 clam shell fragment, 9.1 grams
1 plastic fragment (discarded in field)
1 plastic fragment, flat, white (discarded in lab)

STP 23, Apb, Lot #44

Ceramics
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

Glass
1 aqua cylindrical bottle/jar sherd, patinated
1 unidentified very pale aqua sherd, flat, patinated

Miscellaneous

DRAFT

1 brick fragment, 0.1 grams

STP 24, Fill 1, Lot #45

Glass

1 clear cylindrical bottle/jar sherd, crown cap lip finish fragment, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, duraglas stippling, automatic bottle machine (1940-present)
2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

Metal

1 wire nail fragment (1890-present)

Miscellaneous

4 brick fragments, 8.5 grams
2 mortar fragments, 12.7 grams
1 oyster shell fragment, 1.3 grams
1 plastic fragment, flat, yellow, stained (discarded in lab)

STP 24, Apb, Lot #46

Ceramics

1 hard paste porcelain sherd (Continental European), undecorated, flat vessel
1 ironstone sherd, undecorated, hollow vessel (1840-1900+, Miller 1992)
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 refined white earthenware sherd, blue transfer printed, indeterminate vessel shape

Glass

1 light puce square/rectangular bottle sherd, embossed "...X.../...TTE...", contact mold, possible Drake's Plantation Bitters bottle fragment (1862-1880, Meyer 2012)
1 unidentified olive green spall
1 unidentified pale aqua sherd, flat, stained
1 unidentified pale green sherd, flat, stained
1 windowpane sherd, potash (pre-1864)

Metal

3 cut nail fragments (post-1790)
1 wrought nail fragment, unidentified head, pulled

Miscellaneous

5 brick fragments, 2.7 grams

STP 25, Fill 1 & Fill 2, Lot #47

Ceramics

1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, undecorated, rim fragment, hollow vessel, indeterminate rim diameter (1820-1900+, South 1977; Miller

DRAFT

1992)

Glass

2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 clear square/rectangular tableware sherd, rounded lip finish fragment, patinated
1 unidentified clear spall
1 unidentified light aqua sherd, flat, stained, patinated
1 unidentified light green sherd, flat, patinated
1 unidentified very pale aqua sherd, flat
1 windowpane sherd, potash (pre-1864)

Metal

1 cut nail fragments, unidentified head (post-1790)

Miscellaneous

11 brick fragments, 415.7 grams
1 cinder fragment, 1.5 grams
2 coal fragments, 15.3 grams
2 mortar fragments, 1.5 grams
2 oyster shell fragments, 2.4 grams
1 plastic fragment, flat, thin, brown (discarded in lab)
1 plastic fragment, flat, yellow, embossed "VAN BRODE MILLING CO., INC./CLINTON, MASS., U.S.A." (discarded in lab)

STP 25, Apb, Lot #48

Ceramics

1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter (1780-1830, South 1977; Miller 1992)
1 refined white earthenware sherd, unidentified blue decoration, indeterminate vessel shape

Glass

1 aqua multi-sided bottle sherd, base fragment, chamfered corners, embossed "...NE.../...CE...", open pontil, contact mold, medicinal bottle fragment (1810-1860)
1 windowpane sherd, lime soda (1864-present)

Miscellaneous

13 brick fragments, 63.0 grams
1 coke fragment, 0.3 grams
3 oyster shell fragments, 32.3 grams

STP 26, Fill 1, Lot #49

Ceramics

1 gray bodied coarse stoneware sherd, unidentified cobalt decoration, clear salt glazed interior and exterior, hollow vessel
1 hard paste porcelain tile, flat, square, blue, 1.8 cm x 1.8 cm

Glass

1 clear cylindrical bottle/jar sherd, embossed "...M...", automatic bottle machine (1910-present)

DRAFT

1 clear cylindrical bottle/jar sherd, scratched
2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 olive green cylindrical bottle sherd, scratched, patinated

Metal

1 aluminum pull tab fragment (post-1962, Miller 2000) (discarded in lab)
1 brass 2 - piece General Services military button, spread eagle with raised lined shield holding arrows and laurel, missing attachment -- 1.9 cm diameter (1854-1902, Albert 1976)
1 ferrous metal spark plug fragment (discarded in lab)
1 sheet metal ball chain with connector (discarded in lab)

STP 26, Apb, Lot #50

Ceramics

1 gray and buff bodied coarse stoneware sherd, dark brown salt glazed interior, unglazed exterior, hollow vessel
1 whiteware sherd, polychrome hand painted decoration, flat vessel, burned (1820-1900+, South 1977; 1825-1860+, Miller 1992)

Glass

1 clear cylindrical tableware sherd, tumbler fragment, automatic bottle machine (1910-present)

Metal

1 cut nail fragment, machine headed (post-1830)

STP 27, Fill 1, Lot #51

Glass

1 clear cylindrical bottle/jar sherd, embossed horizontal lines, automatic bottle machine (1910-present)
6 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 green cylindrical bottle sherd, automatic bottle machine (1907-present)
2 unidentified light aqua sherds, flat, patinated

Metal

3 unidentified ferrous metal fragments, possibly distributor condenser fragments

Miscellaneous

1 bone fragment, butcher marks
4 brick fragments, 28.6 grams
1 clam shell fragment, 1.9 grams
1 plastic fragment, curved, white (discarded in lab)

STP 27, Fill 2, Lot #52

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 olive green cylindrical bottle sherd, patinated

Metal

DRAFT

1 cut nail fragment (post-1790)

Miscellaneous

1 mortar fragment, 10.4 grams

STP 27, Apb, Lot #53

Miscellaneous

3 brick fragments, 121.8 grams

STP 28, Fill 1, Lot #54

Metal

1 cut nail fragment (post-1790)

STP 28, Fill 2, Lot #55

Ceramics

1 pearlware sherd, undecorated, rim fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; Miller 1992)

2 whiteware sherds, undecorated, rim fragments, flat vessel, indeterminate rim diameter (1820-1900+, South 1977; Miller 1992)

Glass

1 aqua cylindrical bottle/jar sherd, embossed "...ALE...", patinated

1 clear square/rectangular bottle sherd, molded, automatic bottle machine (1910-present)

Miscellaneous

1 coke fragment, 4.5 grams

STP 29, Fill 1 & Fill 2, Lot #56

Ceramics

1 pearlware sherd, underglaze polychrome hand painted decoration, hollow vessel (1795-1815, South 1977; 1780-1835, Miller 1992)

Glass

9 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

1 green cylindrical bottle sherd, automatic bottle machine (1907-present)

Miscellaneous

3 brick fragments, 3.1 grams

STP 29, Apb, Lot #57

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

1 whiteware sherd, blue hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1860+, Miller 1992)

1 whiteware sherd, molded rim decoration, rim fragment, indeterminate vessel shape and rim diameter (1820-1900+, South 1977; Miller 1992)

3 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

DRAFT

1 clear cylindrical bottle/jar sherd
4 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 clear square/rectangular tableware sherd, unidentified embossing, crushed, patinated
1 dark green cylindrical bottle sherd, patinated
2 unidentified light aqua sherds, flat, patinated

Metal

1 unidentified ferrous metal fragment, flat, thin
1 unidentified Minie ball fragment, probably three groove, fired

Miscellaneous

11 brick fragments, 27.6 grams

STP 30, Fill 1, Lot #58

Ceramics

1 pearlware sherd, underglaze polychrome hand painted decoration, indeterminate vessel shape (1795-1815, South 1977; 1780-1835, Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear marble with interior orange swirl, machine made (post-1902)
1 unidentified light green sherd, flat, patinated

Metal

1 cut nail fragment, unidentified head (post-1790)
1 unidentified ferrous metal fragment, flat, six hand punched holes, rounded ends

Miscellaneous

1 bone fragment
1 brick fragment, 5.6 grams
1 turquoise plastic fragment, curved (discarded in lab)
1 turquoise plastic wrapper, thin, folded (discarded in lab)

STP 30, Apb, Lot #59

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, embossed horizontal lines, automatic bottle machine (1910-present)

STP 31, Fill 1, Lot #60

Ceramics

1 buff bodied coarse stoneware sherd, clear glazed interior and exterior, hollow vessel

Glass

4 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, duraglas stippling, automatic bottle machine (1940-present)

DRAFT

1 light green cylindrical bottle sherd, shadow applied color label, automatic bottle machine (post-1934)
2 light green cylindrical bottle sherds (mend), shadow applied color label "...TE (trademark symbol).../...LA.../...D CARBONATED...", automatic bottle machine (post-1934)
1 unidentified aqua sherd, flat, patinated
1 unidentified light aqua sherd, flat, patinated

Metal
1 cut nail fragment, unidentified head (post-1790)

Miscellaneous
1 coal fragment, 6.1 grams
1 turquoise fish tank rock

STP 31, Apb, Lot #61

Ceramics
1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)

Glass
1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)
1 olive green cylindrical bottle sherd, contact mold (1810-1880)

STP 32, Fill 1, Lot #62

Ceramics
1 redware sherd, unglazed, indeterminate vessel shape
1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass
1 clear cylindrical bottle/jar sherd, base fragment, duraglas stippling, automatic bottle machine (1940-present)
6 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)

Miscellaneous
1 coal fragment, 5.4 grams

STP 32, Fill 2, Lot #63

Ceramics
2 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue transfer printed, hollow vessel (1820-1900+, South 1977; 1830-1865+, Miller 1992)

Metal
1 brass alloy pocket knife fragment

Miscellaneous
2 brick fragments, 45.5 grams

STP 33, Fill 1, Lot #64

Ceramics
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

DRAFT

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, embossed "...N...", duraglas stippling, automatic bottle machine (1940-present)
1 unidentified clear spall
2 unidentified light aqua sherds, flat, patinated

Metal

1 copper alloy one cent coin, Lincoln head penny (1964)
1 cut nail fragment (post-1790)
1 cut nail fragment, unidentified head, clinched (post-1790)
1 unidentified ferrous metal fragment, flat

Miscellaneous

4 brick fragments, 11.0 grams

STP 34, Fill 1, Lot #65

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape, burned (1780-1830, South 1977; Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, embossed vertical row of horizontal lines, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 unidentified light aqua sherd, flat, patinated

Metal

1 ferrous metal plate, oval, holes each side, bent tab

STP 34, Fill 2, Lot #66

Glass

1 light olive amber cylindrical bottle sherd, contact mold (1810-1880)

Metal

1 cut nail fragment (post-1790)
1 cut nail fragment, unidentified head, pulled (post-1790)

Miscellaneous

4 brick fragments, one burned, 15.1 grams
2 oyster shell fragments, 3.6 grams

STP 35, Fill 1, Lot #67

Ceramics

1 buff bodied coarse stoneware sherd, clear glazed interior, clear and yellow glazed exterior, hollow vessel
2 hard paste porcelain sherds (mend), undecorated, indeterminate vessel shape
1 refined white earthenware sherd, unidentified brown glazed molded exterior, unidentified pink glazed interior, stained, possible luster ware
2 whiteware sherds, undecorated, hollow vessel (1820-1900+, South

DRAFT

1977; Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, unidentified embossing, automatic bottle machine (1910-present)
3 clear cylindrical bottle/jar sherds, automatic bottle machine, scratched (1910-present)
1 clear cylindrical tableware sherd, soda-lime, tumbler base fragment, scratched (post-1860s, Jones 1989)
1 unidentified light aqua sherd, flat, scratched
1 windowpane sherd, soda/potash (pre-1864)

Miscellaneous

2 brick fragments, 2.0 grams
2 coal fragments, 5.9 grams
1 oyster shell fragment, 1.9 grams

STP 35, Fill 2, Lot #68

Ceramics

1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Metal

1 cut nail fragment (post-1790)
1 cut nail fragment, unidentified head (post-1790)

Miscellaneous

14 brick fragments, 24.6 grams

STP 35, Apb, Lot #69

Ceramics

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, underglaze polychrome hand painted floral decoration, indeterminate vessel shape (1795-1815, South 1977; 1780-1835, Miller 1992)
1 refined white earthenware sherd, brown glazed interior and exterior, possible Staffordshire slipware, indeterminate vessel shape

Glass

1 olive amber blackglass cylindrical bottle sherd, contact mold, patinated (1810-1880)
1 unidentified pale green sherd, flat, patinated
1 windowpane sherd, potash (pre-1864)

Metal

1 cut nail fragment, unidentified head (post-1790)
1 cut nail fragment, unidentified head, pulled (post-1790)

Miscellaneous

7 brick fragments, 184.6 grams
1 oyster shell fragment, 4.6 grams

DRAFT

STP 36, Fill 1, Lot #70

Ceramics

1 pearlware sherd, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, undecorated, hollow vessel (1830-1940, Miller 1992)

Glass

1 amber cylindrical bottle sherd, base fragment, embossed "...15..." inside circles, automatic bottle machine (1907-present)
1 clear cylindrical bottle/jar sherd, base fragment, embossed "...61/2...", automatic bottle machine, scratched (1910-present)
7 clear cylindrical bottle/jar sherds, duraglas stippling, automatic bottle machine (1940-present)

Miscellaneous

1 brick fragment, 0.5 grams

STP 36, Fill 2, Lot #71

Ceramics

1 whiteware sherd, undecorated, base fragment, flat vessel, indeterminate vessel diameter, stained (1820-1900+, South 1977; Miller 1992)

Metal

1 cut nail fragment, unidentified head (post-1790)

STP 36, Apb, Lot #72

Ceramics

1 pearlware sherd, molded decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, unidentified blue decoration, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shape, burned (1820-1900+, South 1977; Miller 1992)

Metal

1 unidentified ferrous metal fragment, flat

Miscellaneous

6 brick fragments, 4.6 grams

STP 37, Fill 1, Lot #73

Ceramics

1 whiteware sherd, undecorated, flat vessel, burned (1820-1900+, South 1977; Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
5 unidentified pale aqua sherds, flat

DRAFT

1 windowpane sherd, lime soda (1864-present)

Metal

1 brass .22 caliber automatic bullet and cartridge casing, headstamp "...-W.../...AUTO..." (discarded in lab for safety)

Miscellaneous

1 oyster shell fragment, 3.6 grams

STP 37, Fill 2, Lot #74

Ceramics

1 whiteware sherd, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

1 unidentified light aqua sherd, flat

STP 38, Fill 1, Lot #75

Ceramics

1 pearlware sherd, undecorated, hollow vessel, burned (1780-1830, South 1977; Miller 1992)

Glass

6 7-up green cylindrical bottle sherds, automatic bottle machine (post-1934)

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)

2 unidentified pale aqua sherds, flat

Metal

1 cut nail fragment, unidentified head (post-1790)

Miscellaneous

2 brick fragments, 15.9 grams

1 mortar fragment, 2.1 grams

1 oyster shell fragment, 2.5 grams

1 plastic fragment, brown, flat (discarded in lab)

1 plastic fragment, green, curved (discarded in lab)

1 plastic fragment, pink, flat, ring, hole one side (discarded in lab)

1 plastic two-hole sew through button, concave center -- 1.1 cm diameter

1 rubber gasket fragment, flat, oval, holes in either side

STP 38, Fill 2, Lot #76

Ceramics

1 whiteware sherd, polychrome hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; 1825-1860+, Miller 1992)

Glass

1 light aqua cylindrical bottle sherd, automatic bottle machine (1907-present)

1 unidentified light green sherd, flat, patinated

Metal

1 unidentified nail fragment

Miscellaneous

DRAFT

2 brick fragments, 369.5 grams
58 composite fragments, flat, black, probable fiberboard (sample retained), 297.7 grams
1 plastic fragment, curved, white (discarded in lab)
3 tar composite fragments (sample retained) , 20.5 grams

STP 38, Apb, Lot #77

Ceramics

1 yellowware sherd, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)

Miscellaneous

1 brick fragment, 0.4 grams
3 slate fragments

STP 39, Fill 1, Lot #78

Ceramics

1 hard paste porcelain tile, square, blue, 1.8 cm x 1.8 cm
2 whiteware sherds, unidentified blue decoration, hollow vessel (1820-1900+, South 1977; Miller 1992)

Glass

1 7-up green cylindrical bottle sherd, base fragment, embossed "...ED...", duraglas stippling, automatic bottle machine (1940-present)
1 7-up green cylindrical bottle sherd, duraglas stippling, automatic bottle machine (1940-present)
1 clear cylindrical bottle/jar sherd, embossed "...OS...", automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, external thread lip finish, stained, patinated
3 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
3 clear cylindrical bottle/jar sherds, scratched, patinated
1 light green cylindrical bottle sherd, base fragment, duraglas stippling, automatic bottle machine (1940-present)
4 light green cylindrical bottle sherds, automatic bottle machine (1907-present)
1 unidentified pale aqua sherd, flat, stained

Metal

1 aluminum beverage can fragment (post-1957, Miller 2000) (discarded in lab)
1 aluminum pull tab fragment (post-1962, Miller 2000) (discarded in lab)

Miscellaneous

6 plastic fragments, curved, clear, stained (discarded in lab)

STP 39, Fill 2, Lot #79

Ceramics

1 hard paste porcelain sherd (Continental European), undecorated, indeterminate vessel shape

DRAFT

1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)

Glass

1 7-up green cylindrical bottle sherd, "...8 FLUID...", base fragment, automatic bottle machine (post-1934)
1 clear cylindrical bottle sherd, small mouth external thread lip finish fragment, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, base fragment, embossed "...6...", automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, embossed "...T...", automatic bottle machine (1910-present)
1 clear square/rectangular bottle sherd, automatic bottle machine (1910-present)
1 light green cylindrical bottle sherd, automatic bottle machine (1907-present)
1 unidentified pale aqua sherd, flat

Miscellaneous

2 brick fragments, 3.1 grams

STP 40, Fill 1, Lot #80

Ceramics

1 hard paste porcelain sherd, undecorated, flat vessel
1 pearlware sherd, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, flat vessel (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, polychrome decal decoration, rim fragment, hollow vessel, 4 inch rim diameter (1820-1900+, South 1977; 1890-present, Miller 1992)

Glass

1 amber cylindrical bottle sherd, automatic bottle machine (1907-present)
1 clear cylindrical bottle/jar sherd, embossed dots, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, heavily scratched
1 clear square/rectangular bottle sherd, automatic bottle machine (1910-present)
2 unidentified clear sherds, curved, thin, possible lamp chimney

Metal

3 cut nail fragments, unidentified head (post-1790)
3 wire nail fragments (1890-present)

Miscellaneous

3 bone fragments

DRAFT

1 brick fragment, glazed, 10.9 grams
18 brick fragments, 259.9 grams

STP 40, Fill 2, Lot #81

Ceramics

1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, undecorated, base fragment, hollow vessel, indeterminate base diameter (1820-1900+, South 1977; Miller 1992)
1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)

Miscellaneous

1 brick fragment, 4.5 grams

STP 40, Apb, Lot #82

Ceramics

1 hard paste porcelain sherd (Continental European), undecorated, indeterminate vessel shape
1 pearlware sherd, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue transfer printed, flat vessel (1820-1900+, South 1977; 1830-1865+, Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear cylindrical lamp chimney sherd
1 light green cylindrical bottle sherd, patinated

Miscellaneous

2 brick fragments, 2.4 grams

Test Unit 201, Apb, Level 1, Lot #83

Ceramics

1 creamware sherd, canary yellow glaze, hollow vessel (1762-1820, South 1977; Miller 1992)
1 earthenware marble, unglazed - 1.5 cm diameter (mid-18th century-1930s, MACL 2016)
1 gray bodied coarse stoneware sherd, unglazed interior, clear salt glazed exterior, hollow vessel
1 hard paste porcelain sherd (Continental European), unidentified blue decoration interior, rim fragment, flat vessel, indeterminate rim diameter
2 hard paste porcelain sherds (Continental European), unidentified blue decoration, indeterminate vessel shape
1 kaolin pipe stem fragment - 5/64 inch bore hole diameter
3 kaolin pipe stem fragments - indeterminate bore hole diameter
1 pearlware sherd, blue shell edge decoration, rim fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; Miller 1992)

DRAFT

1 pearlware sherd, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, underglaze blue hand painted decoration, indeterminate vessel shape (1780-1820, South 1977; 1780-1830, Miller 1992)
7 pearlware sherds, undecorated, flat vessel (1780-1830, South 1977; Miller 1992)
15 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, unidentified underglaze polychrome decoration, hollow vessel (1780-1830, South 1977; Miller 1992)
1 redware sherd, unglazed interior, clear glazed exterior, indeterminate vessel shape
1 refined white earthenware sherd, undecorated, flat vessel, burned
5 refined white earthenware sherds (one vessel), unidentified polychrome decoration, molded, indeterminate vessel shape, burned, possible Victorian Majolica (1870-1890, Miller 1992; MACL 2016)
1 refined white earthenware spall, blue annular decoration, indeterminate vessel shape
1 refined white earthenware spall, unidentified blue decoration, indeterminate vessel shape
1 refined white earthenware spall, unidentified green rim decoration, rim fragment, indeterminate vessel shape and rim diameter
5 refined white earthenware spalls, undecorated, indeterminate vessel shape
1 whiteware sherd, violet transfer printed, rim fragment, indeterminate vessel shape and rim diameter (1820-1900+, South 1977; 1825-1875+, Miller 1992)
16 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
2 yellowware sherds, polychrome hand painted decoration, indeterminate vessel shape (1830-1940, Miller 1992)
2 yellowware sherds, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)
1 yellowware spall, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)

<u>Glass</u>

1 amber cylindrical bottle sherd, molded ridges, contact mold (1810-1880)
2 aqua cylindrical bottle sherds, patinated
1 clear cylindrical bottle/jar sherd, embossed "...A...", automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, external thread lip finish

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fragment, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, patinated
1 clear cylindrical tableware sherd, rounded lip finish fragment
1 light aqua cylindrical bottle/jar sherd, scratched, patinated
1 light green cylindrical bottle sherd, contact mold (1810-1880)
1 light green cylindrical bottle sherd, unidentified embossing, automatic bottle machine (1907-present)
22 light green cylindrical bottle sherds, automatic bottle machine (1907-present)
1 olive amber cylindrical bottle sherd, embossed "...L...", contact mold (1810-1880)
1 olive green cylindrical bottle sherd, scratched, patinated
11 unidentified light aqua sherds, flat, patinated
1 white milk glass cylindrical tableware sherd
5 windowpane sherds, potash, patinated (pre-1864)

Metal

1 brass button fragment, domed, probably two piece, dented -- 1.2 cm diameter
1 cut nail fragment, unidentified head, clinched (post-1790)
5 cut nail fragments (post-1790)
7 cut nail fragments, unidentified heads (post-1790)
1 unidentified ferrous metal fragment, curved, tapered one end
5 unidentified ferrous metal fragments
1 unidentified nail fragment
1 wrought nail fragment, unidentified head

Miscellaneous

3 bone fragments
108 brick fragments, 208.4 grams
2 clam shell fragments, 2.7 grams
9 coal fragments, 20.8 grams
4 coke fragments, 7.8 grams
5 mortar fragments, 41.1 grams
13 oyster shell fragments, 35.6 grams
10 plaster fragments, 5.4 grams
11 slag fragments, 27.1 grams

Test Unit 201, Apb, Level 2, Lot #84

Ceramics

1 gray bodied coarse stoneware sherd, brown glazed, indeterminate vessel shape
1 gray bodied coarse stoneware sherd, light brown glazed interior and exterior, hollow vessel
2 hard paste porcelain sherds (Continental European), undecorated, indeterminate vessel shape
16 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, blue shell edge decoration, scalloped rim

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fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, blue transfer printed, flat vessel (1795-1840, South 1977; 1787-1830, Miller 1992)
1 pearlware sherd, underglaze blue hand painted decoration, flat vessel shape (1780-1820, South 1977; 1780-1830, Miller 1992)
2 pearlware sherds, mocha decoration, hollow vessel (1795-1890, South 1977; 1799-1830, Miller 1992)
2 pearlware sherds, unidentified blue decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 refined white earthenware sherd, unidentified blue geometric decoration, indeterminate vessel shape
1 refined white earthenware sherd, unidentified green decoration, indeterminate vessel shape
3 refined white earthenware spalls, undecorated, indeterminate vessel shape
1 whiteware sherd, unidentified blue decoration, hollow vessel, stained (1820-1900+, South 1977; Miller 1992)
6 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

Glass

2 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
1 light aqua cylindrical bottle/jar sherd, embossed "...H.../...C...", automatic bottle machine (1907-present)
1 light aqua cylindrical bottle/jar sherd, stained, patinated
2 light green cylindrical bottle sherds, automatic bottle machine (1910-present)
1 pale aqua cylindrical bottle sherd, thin, patinated
1 unidentified clear spall, stained, patinated
4 unidentified light aqua sherds, flat, patinated
1 unidentified olive green spall
2 unidentified pale aqua sherds
5 windowpane sherds, potash (pre-1864)

Metal

6 cut nail fragments (post-1790)
5 cut nail fragments, unidentified heads (post-1790)
1 ferrous metal key fragment, probably a can key
4 unidentified ferrous metal fragments

Miscellaneous

2 bone fragments, one calcined
50 brick fragments, 41.5 grams
4 cinder fragments, 5.7 grams
11 coal fragments, 6.4 grams
38 coke fragments, 38.5 grams
1 mortar fragment, 6.2 grams

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1 plastic fragment, curved, brown (discarded in lab)
1 plastic fragment, flat, black, ribbed (discarded in lab)
4 slag fragments, 9.1 grams

Test Unit 202, Apb, Level 1, Lot #85

Ceramics

1 hard paste porcelain sherd (Continental European), undecorated, flat vessel
1 hard paste porcelain sherd (Continental European), underglaze blue hand painted decoration, rim fragment, hollow vessel, indeterminate rim diameter
1 kaolin pipe bowl fragment, molded floral decoration
1 pearlware sherd, unidentified blue decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, unidentified blue decoration, stained (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, unidentified green decoration, flat vessel (1780-1830, South 1977; Miller 1992)
5 pearlware sherds, undecorated, flat vessel (1780-1830, South 1977; Miller 1992)
6 pearlware sherds, undecorated, hollow vessel, one burned (1780-1830, South 1977; Miller 1992)
12 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 redware sherd, unglazed, indeterminate vessel shape
2 refined white earthenware sherds, unidentified blue decoration, indeterminate vessel shape
1 whiteware sherd, unidentified blue decoration, flat vessel, burned (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds, polychrome hand painted decoration, indeterminate vessel shape (1820-1900+, South; 1825-1860+, Miller 1992)
2 whiteware sherds, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)
3 whiteware sherds, undecorated, rim fragments, indeterminate vessel shape and rim diameter (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, annular and polychrome decoration, hollow vessel (1830-1940, Miller 1992)
3 yellowware sherds, undecorated, hollow vessel (1830-1940, Miller 1992)

Glass

1 clear cylindrical bottle/jar sherd, scratched
1 dark aqua cylindrical bottle sherd, patinated
3 light aqua cylindrical bottle/jar sherds, patinated
6 unidentified clear sherds, flat, stained
1 unidentified dark green spall

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4 unidentified light aqua sherds, flat, patinated
2 unidentified light green sherds, flat, patinated
1 windowpane sherd, soda/potash (pre-1864)
8 windowpane sherds, potash, patinated (pre-1864)

Metal

2 aluminum foil fragments (post-1947, Miller 2000) (discarded in lab)
9 cut nail fragments, one pulled (post-1790)
7 cut nail fragments, unidentified heads (post-1790)
11 unidentified ferrous metal fragments, flat

Miscellaneous

1 bone fragment, calcined
84 brick fragments, 385.5 grams
4 coal fragments, 39.2 grams
18 coke fragments, 29.9 grams
7 oyster shell fragments, 29.6 grams
2 slag fragments, 53.0 grams
4 slate fragments

Non-Cultural

4 chert non-cultural material (NCM)

Test Unit 202, Apb, Level 2, Lot #86

Ceramics

1 gray bodied coarse stoneware sherd, brown glazed interior, clear salt glazed exterior, hollow vessel
1 hard paste porcelain sherd (bone china), undecorated, flat vessel
1 hard paste porcelain sherd (bone china), undecorated, rim fragment, flat vessel, indeterminate rim diameter
1 hard paste porcelain sherd (Continental European), undecorated, flat vessel
1 hard paste porcelain sherd (Continental European), undecorated, rim fragment, flat vessel, indeterminate rim diameter
1 hard paste porcelain sherd (Continental European), underglaze blue hand painted decoration, flat vessel
1 pearlware sherd, blue hand painted decoration, flat vessel (1780-1820, South 1977; 1780-1830, Miller 1992)
1 pearlware sherd, undecorated, base fragment, indeterminate vessel shape and base diameter, stained (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter, stained (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, unidentified blue underglaze decoration, flat vessel (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, unidentified underglaze polychrome decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
9 pearlware sherds, undecorated, indeterminate vessel shape (1780-

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1830, South 1977; Miller 1992)

2 pearlware sherds, unidentified underglaze blue decoration, rim fragments, indeterminate vessel shape and rim diameter, stained (1780-1830, South 1977; Miller 1992)

1 refined white earthenware sherd, unidentified brown decoration, indeterminate vessel shape

1 whiteware sherd, blue hand painted decoration, hollow vessel (1820-1900+, South 1977; 1830-1860+, Miller 1992)

1 whiteware sherd, blue hand painted decoration, rim fragment, flat vessel, indeterminate rim diameter, stained (1820-1900+, South 1977; 1830-1860+, Miller 1992)

1 whiteware sherd, brown transfer printed, flat vessel (1820-1900+, South; 1825-1875+, Miller 1992)

1 whiteware sherd, green transfer printed, rim fragment, flat vessel, indeterminate rim diameter (1820-1900+, South; 1825-1875+, Miller 1992)

1 whiteware sherd, mulberry transfer printed, flat vessel (1820-1900+, South; 1825-1875+, Miller 1992)

1 whiteware sherd, polychrome hand painted decoration, indeterminate vessel shape (1820-1900+, South; 1825-1860+, Miller 1992)

1 whiteware sherd, undecorated, flat vessel (1820-1900+, South 1977; Miller 1992)

1 whiteware sherd, undecorated, rim fragment, flat vessel, indeterminate rim diameter (1820-1900+, South 1977; Miller 1992)

2 whiteware sherds, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)

2 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)

1 yellowware sherd, undecorated, flat vessel (1830-1940, Miller 1992)

1 yellowware sherd, white glazed interior, hollow vessel (1830-1940, Miller 1992)

<u>Glass</u>

1 clear manganese cylindrical bottle/jar sherd, scratched (1880-1915)

1 light aqua cylindrical bottle/jar sherd, stained, slightly heat melted

1 light aqua cylindrical bottle/jar sherd, unidentified embossing, patinated

2 light aqua cylindrical bottle/jar sherds, patinated

1 olive amber blackglass cylindrical bottle sherd, cracked off and fire polished down-tooled lip finish fragment, down-tooled string rim, wine bottle, contact mold, patinated (1810-1880)

2 olive green cylindrical bottle sherds, contact mold, patinated (1810-1880)

1 unidentified olive green spall

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4 unidentified pale aqua sherds, flat, patinated
3 windowpane sherds, potash (pre-1864)

Metal

9 cut nail fragments, unidentified head (post-1790)
7 unidentified ferrous metal fragments
4 wire nail fragments (1890-present)

Miscellaneous

5 bone fragments, one calcined
55 brick fragments, 179.9 grams
4 coal fragments, 12.0 grams
24 coke fragments, 34.6 grams
37 oyster shell fragments, 51.2 grams
1 slate fragment

Prehistoric

1 quartz biface thinning flake, proximal

Test Unit 204, Apb, Level 1, Lot #87

Ceramics

1 gray bodied coarse stoneware sherd, brown glazed interior, salt glazed exterior, hollow vessel
1 gray bodied coarse stoneware sherd, cobalt hand painted decoration, brown glazed interior, clear salt glazed exterior, hollow vessel
1 hard paste porcelain sherd (Continental European), undecorated, rim fragment, flat vessel, indeterminate rim diameter
1 hard paste porcelain sherd (Continental European), underglaze unidentified blue decoration, flat vessel
1 ironstone sherd, molded dot rim decoration, rim fragment, flat vessel, indeterminate rim diameter (1840-1900+, Miller 1992)
6 ironstone sherds, undecorated, hollow vessel (1840-1900+, Miller 1992)
1 pearlware sherd, blue transfer printed, indeterminate vessel shape (1795-1840, South 1977; 1787-1830, Miller 1992)
1 pearlware sherd, blue transfer printed, rim fragment, indeterminate vessel shape, indeterminate rim diameter (1795-1840, South 1977; 1787-1830, Miller 1992)
1 pearlware sherd, unidentified blue decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, base fragments, indeterminate vessel shape and base diameter, burned (1780-1830, South 1977; Miller 1992)
4 pearlware sherds, undecorated, flat vessels, burned (1780-1830, South 1977; Miller 1992)
8 pearlware sherds, undecorated, indeterminate vessel shape, burned (1780-1830, South 1977; Miller 1992)
1 redware sherd, dark brown glazed interior and exterior, base fragment, hollow vessel, indeterminate base diameter

DRAFT

1 refined white earthenware sherd, undecorated, hollow vessel, heavily burned
1 refined white earthenware sherd, undecorated, hollow vessel, heavily stained
1 whiteware sherd, blue transfer printed, rim fragment, flat vessel, 8 inch rim diameter (1820-1900+, South 1977; 1830-1865+, Miller 1992)
1 whiteware sherd, shadow decal decoration interior, hollow vessel (1820-1900+, South 1977; 1890-present, Miller 1992)
1 whiteware sherd, undecorated, base fragment, flat vessel, indeterminate base diameter (1820-1900+, South 1977; Miller 1992)
1 whiteware sherd, undecorated, base fragment, hollow vessel, 2 inch base diameter (1820-1900+, South 1977; Miller 1992)
1 whiteware sherd, undecorated, base fragment, indeterminate vessel shape and rim diameter (1820-1900+, South 1977; Miller 1992)
1 whiteware sherd, unidentified blue decoration, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds (mend), undecorated, rim fragments, indeterminate vessel shape and rim diameter, stained (1820-1900+, South 1977; Miller 1992)
3 whiteware sherds, undecorated, hollow vessel, slightly burned (1820-1900+, South 1977; Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shape, burned (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)

Glass

1 Ball blue cylindrical canning jar sherd, automatic bottle machine (1909-1938)
1 clear cylindrical bottle/jar sherd, base fragment, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, base fragment, base embossed "9055/3/(maker's mark of anchor with H in middle)/6", automatic bottle machine, manufactured by Anchor Hocking Glass Corporation (1938-1980, Lindsey 2016)
1 clear cylindrical bottle/jar sherd, ribbed, automatic bottle machine (1910-present)
1 clear cylindrical bottle/jar sherd, unidentified embossing, automatic bottle machine (1910-present)
9 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
2 clear cylindrical bottle/jar sherds, base fragments, automatic bottle machine (1910-present)
3 clear cylindrical bottle/jar sherds, patinated
1 clear manganese cylindrical bottle/jar sherd, embossed "...C..."

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(1880-1915)
5 clear manganese cylindrical bottle/jar sherds, patinated (1880-1915)
1 clear manganese cylindrical tableware sherd, embossed horizontal row of vertical lines (1880-1915)
1 clear manganese square/rectangular bottle sherd (1880-1915)
4 clear multi-sided bottle/jar sherds, automatic bottle machine (1910-present)
1 clear square/rectangular bottle sherd, base fragment, chilled iron mold (1880-1930)
1 forest green cylindrical bottle sherd, contact mold (1810-1880)
1 honey amber cylindrical bottle sherd, unidentified embossing, ribbed, automatic bottle machine (1907-present)
2 light aqua cylindrical bottle/jar sherds, automatic bottle machine, patinated (1907-present)
1 light green cylindrical bottle sherd, unidentified embossing, patinated
5 light green cylindrical bottle sherds, scratched, patinated
1 pale green cylindrical bottle sherd, automatic bottle machine (1907-present)
1 unidentified clear sherd, curved, thin, patinated
1 unidentified green spall
5 unidentified light aqua sherds, flat, patinated
1 unidentified pale aqua spall
2 windowpane sherds, potash, patinated (pre-1864)

Metal

1 brass .22 caliber rimfire cartridge casing, headstamp "U", manufactured by the Union Metallic Cartridge Company (1867-1911, Steinhauer 2016)
1 cut nail fragment, unidentified head, pulled (post-1790)
13 cut nail fragments (post-1790)
9 cut nail fragments, unidentified heads (post-1790)
1 ferrous metal bolt fragment
9 unidentified ferrous metal fragments
6 wire nail fragments (1890-present)
2 wire nail fragments, clinched (1890-present)

Miscellaneous

2 bone fragments
54 brick fragments, 1155.0 grams
1 coke fragment, 1.4 grams
25 composite fragments, flat, black, probable fiberboard (sample retained), 238.6 grams
6 concrete fragments (discarded in lab) , 154.2 grams
8 mortar fragments, 16.2 grams
14 oyster shell fragments, 11.4 grams
1 plastic tube fragment, lined with foil (discarded in lab)

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1 slate fragment
1 tar composite fragment, 5.5 grams

Test Unit 204, Apb, Level 2, Lot #88

Ceramics

1 hard paste porcelain sherd (Continental European), overglaze blue hand painted decoration, hollow vessel (pre-1880)
1 pearlware sherd, blue transfer printed, hollow vessel (1795-1840, South 1977; 1787-1830, Miller 1992)
1 pearlware sherd, blue transfer printed, rim fragment, flat vessel, indeterminate rim diameter (1795-1840, South 1977; 1787-1830, Miller 1992)
1 pearlware sherd, undecorated, base fragment, flat vessel, indeterminate base diameter (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, undecorated, rim fragment, indeterminate vessel shape and rim diameter, burned (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, unidentified blue decoration, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, flat vessel, burned (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
3 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 redware sherd, brown glazed exterior, hollow vessel
1 redware sherd, dark brown glazed interior and exterior, hollow vessel
1 redware sherd, unglazed interior, hollow vessel
1 soft paste porcelain sherd (English), undecorated, flat vessel
1 whiteware sherd, blue transfer printed, hollow vessel, burned (1820-1900+, South 1977; 1830-1865+, Miller 1992)
1 whiteware sherd, polychrome hand painted decoration, hollow vessel (1820-1900+, South; 1825-1860+, Miller 1992)
1 whiteware sherd, undecorated, scalloped rim fragment, flat vessel, indeterminate rim diameter (1820-1900+, South 1977; Miller 1992)
4 whiteware sherds (mend), undecorated, rim fragments, flat vessel, 5 inch rim diameter, burned (1820-1900+, South 1977; Miller 1992)

Glass

1 clear manganese cylindrical bottle sherd, embossed "...ER...", patinated (1880-1915)
1 olive green blackglass cylindrical bottle sherd, cracked off and down-tooled lip finish fragment, down-tooled string rim, wine bottle, patinated (post-1880)

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1 pale green cylindrical bottle sherd, embossed "...F...", scratched
1 windowpane sherd, potash (pre-1864)

Metal

1 cut nail fragment, unidentified head, clinched (post-1790)
3 cut nail fragments (post-1790)
4 cut nail fragments, unidentified heads (post-1790)
1 unidentified ferrous metal fragment, circular, two projecting parts (similar to wingnut)
1 unidentified ferrous metal fragment, folded
3 unidentified ferrous metal fragments, flat
2 unidentified lead fragments, curved

Miscellaneous

1 bone fragment
18 brick fragments, 205.5 grams
1 coal fragment, 1.3 grams
4 coke fragments, 1.9 grams
11 composite fragments, flat, black, probable fiberboard (sample retained), 22.5 grams
2 oyster shell fragments, 12.7 grams

Test Unit 205, Apb, Level 1, Lot #89

Ceramics

1 kaolin pipe stem fragment, stained - 5/64 inch bore hole diameter
1 pearlware sherd, underglaze blue hand painted decoration, flat vessel, stained (1780-1820, South 1977; 1780-1830, Miller 1992)
2 pearlware sherds (mend), underglaze green hand painted decoration, hollow vessel (1795-1815, South 1977; 1780-1835, Miller 1992)
2 pearlware sherds, molded decoration, indeterminate vessel shape, stained (1780-1830, South 1977; Miller 1992)
3 pearlware sherds, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
5 pearlware sherds, undecorated, hollow vessel, burned (1780-1830, South 1977; Miller 1992)
6 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, indeterminate vessel shape, burned (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1860+, Miller 1992)

1 whiteware sherd, violet transfer printed, hollow vessel (1820-1900+, South; 1825-1875+, Miller 1992)
2 whiteware sherds, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, undecorated (1830-1940, Miller 1992)

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Glass

1 aqua cylindrical bottle sherd, patinated
67 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
4 clear cylindrical bottle/jar sherds, stained
10 clear multi-sided bottle/jar sherds, automatic bottle machine (1910-present)
3 clear multi-sided bottle/jar sherds, base fragments, automatic bottle machine (1910-present)
1 cobalt cylindrical bottle/jar sherd, automatic bottle machine (1907-present)
1 greenish-aqua cylindrical bottle sherd, base fragment, scratched, patinated
1 turquoise oval faceted button/jewelry inset
1 unidentified clear spall
1 unidentified green spall
2 unidentified light aqua sherds, flat
1 windowpane sherd, soda (pre-1864)

Metal

6 cut nail fragments (post-1790)
1 unidentified ferrous metal fragment
10 wire nail fragments (1890-present)

Miscellaneous

46 brick fragments, 132.4 grams
8 coke fragments, 33.3 grams
1 concrete fragment, 32.2 grams
6 daub fragments, 18.1 grams
8 oyster shell fragments, 5.5 grams

Prehistoric

1 quartz biface thinning flake, distal
1 quartz decortication flake, whole, 14.7 mm x 10.9 mm
1 quartz primary reduction flake, proximal

Test Unit 205, Apb, Level 2, Lot #90

Ceramics

1 hard paste porcelain sherd (Continental European), undecorated, hollow vessel
1 kaolin pipe bowl fragment
1 pearlware sherd, blue hand painted floral decoration, hollow vessel (1780-1820, South 1977; 1780-1830, Miller 1992)
1 pearlware sherd, undecorated, base fragment, indeterminate vessel shape and base diameter (1780-1830, South 1977; Miller 1992)
1 pearlware sherd, underglaze polychrome hand painted decoration, rim fragment, indeterminate vessel shape and rim diameter (1795-1815, South 1977; 1780-1835, Miller 1992)
1 pearlware sherd, unidentified underglaze blue decoration, burned (1780-1830, South 1977; Miller 1992)

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6 pearlware sherds, undecorated, hollow vessel (1780-1830, South 1977; Miller 1992)
26 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
4 pearlware sherds, undecorated, rim fragments, indeterminate vessel shape and rim diameter, burned (1780-1830, South 1977; Miller 1992)
4 pearlware sherds, underglaze polychrome hand painted decoration, indeterminate vessel shape (1795-1815, South 1977; 1780-1835, Miller 1992)
1 redware sherd, brown glazed interior and exterior, indeterminate vessel shape
1 redware sherd, light brown glazed interior and exterior, indeterminate vessel shape
1 refined white earthenware sherd, blue transfer printed, rim fragment, indeterminate vessel shape and rim diameter
1 refined white earthenware spall, undecorated, indeterminate vessel shape
1 whiteware sherd, blue hand painted decoration, hollow vessel (1820-1900+, South 1977; 1830-1860+, Miller 1992)
1 whiteware sherd, blue hand painted floral decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1860+, Miller 1992)
1 whiteware sherd, blue transfer printed, indeterminate vessel shape (1820-1900+, South 1977; 1830-1865+, Miller 1992)
1 whiteware sherd, mulberry transfer printed, indeterminate vessel shape (1820-1900+, South; 1825-1875+, Miller 1992)
1 whiteware sherd, undecorated, hollow vessel (1820-1900+, South 1977; Miller 1992)

<u>Glass</u>

1 aqua cylindrical bottle sherd, thin, patinated
1 clear cylindrical bottle/jar sherd, automatic bottle machine (1910-present)
1 clear manganese cylindrical bottle/jar sherd (1880-1915)
1 greenish-aqua cylindrical bottle sherd, contact mold, patinated (1810-1880)
3 light aqua cylindrical bottle/jar sherds, patinated
2 light aqua multi-sided bottle sherds, contact mold, patinated (1810-1880)
1 light green cylindrical bottle sherd, automatic bottle machine (1907-present)
3 olive green cylindrical bottle sherds, patinated
4 unidentified clear sherds, flat, stained, patinated
3 unidentified clear spalls
8 unidentified light aqua sherds, flat, patinated
1 windowpane sherd, soda/potash, stained, patinated (pre-1864)

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6 windowpane sherds, potash (pre-1864)

Metal

5 cut nail fragments (post-1790)
8 cut nail fragments, unidentified heads (post-1790)
1 unidentified ferrous metal fragment, flat
1 unidentified lead rod fragment

Miscellaneous

4 bone fragments, two calcined
32 brick fragments, 92.3 grams
5 coal fragments, 33.0 grams
6 coke fragments, 22.0 grams
5 oyster shell fragments, 2.5 grams
1 slag fragment, 63.0 grams

Test Unit 206, Apb, Lot #91

Ceramics

1 hard paste porcelain sherd, undecorated, base fragment, flat vessel, indeterminate base diameter
1 pearlware sherd, green shell edge decoration, rim fragment, flat vessel, indeterminate base diameter (1780-1830, South 1977; 1800-1830, Miller 1992)
1 pearlware sherd, underglaze blue hand painted decoration, rim fragment, flat vessel, indeterminate rim diameter (1780-1820, South 1977; 1780-1830, Miller 1992)
2 pearlware sherds, undecorated, flat vessels (1780-1830, South 1977; Miller 1992)
2 pearlware sherds, undecorated, hollow vessel, stained (1780-1830, South 1977; Miller 1992)
13 pearlware sherds, undecorated, indeterminate vessel shape, stained (1780-1830, South 1977; Miller 1992)
1 redware sherd, unglazed, indeterminate vessel shape, worn
1 refined white earthenware sherd, blue transfer printed, indeterminate vessel shape
2 refined white earthenware sherds, indeterminate vessel shape
2 whiteware sherds, blue hand painted decoration, indeterminate vessel shape (1820-1900+, South 1977; 1830-1860+, Miller 1992)
2 whiteware sherds, undecorated, indeterminate vessel shape (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, polychrome annular decoration, hollow vessel (1830-1940, Miller 1992)

Glass

20 clear cylindrical bottle/jar sherds, automatic bottle machine (1910-present)
4 clear cylindrical bottle/jar sherds, stained, patinated
8 clear manganese cylindrical bottle/jar sherds, patinated (1880-1915)
3 clear multi-sided bottle sherds, automatic bottle machine (1910-

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present)
1 green and white swirl marble, machine made (post-1902)
2 light aqua cylindrical bottle/jar sherds, automatic bottle machine (1907-present)
5 light aqua cylindrical bottle/jar sherds, patinated
3 light green cylindrical bottle sherds, automatic bottle machine (1907-present)
1 pale aqua square/rectangular bottle sherd, embossed "...HE...", paneled bottle, patinated (post-1850)
1 unidentified honey amber spall, patinated
6 unidentified light aqua sherds, flat, patinated
1 unidentified light aqua spall, patinated
3 unidentified light green sherds, flat, patinated
1 unidentified white milk glass sherd, flat
2 windowpane sherds, potash (pre-1864)

Metal
3 cut nail fragments, unidentified heads (post-1790)

Miscellaneous
4 brick fragments, 13.3 grams
4 coal fragments, 3.4 grams
2 coke fragments, 5.2 grams
3 oyster shell fragments, 15.4 grams

Test Unit 206, Zone of Bioturbation, Lot #92

Ceramics
1 pearlware sherd, green shell edge decoration, rim fragment, flat vessel, indeterminate rim diameter (1780-1830, South 1977; 1800-1830, Miller 1992)
4 pearlware sherds, undecorated, indeterminate vessel shape (1780-1830, South 1977; Miller 1992)
1 whiteware sherd, blue hand painted floral decoration, hollow vessel (1820-1900+, South 1977; 1830-1860+, Miller 1992)
1 whiteware sherd, undecorated, hollow vessel, slightly burned (1820-1900+, South 1977; Miller 1992)
1 yellowware sherd, undecorated, indeterminate vessel shape (1830-1940, Miller 1992)

Glass
5 unidentified light aqua sherds, flat, patinated
2 unidentified light green sherds, flat, patinated
1 unidentified very pale green sherd, flat, stained

Metal
1 cut nail fragment, unidentified head (post-1790)

Miscellaneous
6 brick fragments, 9.1 grams
2 slag fragments, 2.0 grams

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APPENDIX III
Cultural Resources Forms

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Property Information

Property Names

Name Explanation	Name
Historic	Parker-Gray Historic District
NRHP Listing	Uptown/Parker-Gray Historic District

Property Addresses

Alternate - Buchanan Street
Current - Cameron Street
Alternate - Columbus Street North
Alternate - Henry Street North
Alternate - West Street North

Property Evaluation Status

NRHP Listing
VLR Listing

This Property is associated with the Parker-Gray Historic District.

County/Independent City(s):	Alexandria (Ind. City)
Incorporated Town(s):	*No Data*
Zip Code(s):	22314
Magisterial District(s):	*No Data*
Tax Parcel(s):	*No Data*
USGS Quad(s):	ALEXANDRIA

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Additional Property Information

Architecture Setting: Urban

Acreage: 201.6

Site Description:

2007: The Uptown/Parker-Gray Historic District is a large, level area comprising most of the northwestern quadrant of the Old Town Alexandria street grid as it was laid out in 1797. Although the street pattern was shown on maps by 1798, most of the land remained vacant until the 1860s, and nearly all the built resources currently in the district date from after 1870. Most of the resources are small row houses and town houses, but there are also many commercial buildings. The oldest houses are in the southernmost blocks and along the district's southeastern edge. Nineteenth-century architectural styles are found in restrained and simplified forms. The district's core area consists of a concentration of frame houses with details from late-nineteenth-century styles, mainly the Italianate and Queen Anne styles. In the southwestern corner and throughout most of the western half of the district in general, whole blocks are occupied by brick Colonial Revival-style row houses built by developers in three or four major campaigns in the twentieth century. The commercial buildings are nearly all brick. Buildings built for neighborhood-oriented businesses are found on street corners in the southern half of the district and in a small concentration of contiguous commercial buildings along Queen Street. The Queen Street business corridor was once the city's primary African-American business district. Nearly a fifth of the district's land area consists of warehouses and other large commercial buildings. The warehouses are concentrated in the northern blocks along two north-south streets (North Henry and North Fayette) that were formerly the routes of railroads. Smaller highway-oriented buildings, such as gas stations, are found along U.S. Route 1, which also passes through the district north-south along North Henry Street and North Patrick Street. More than 200 units of public housing, built between the early 1940s and 1959 as Colonial Revival-style row houses, are found in a seven-block area at the northeastern section of the nominated area (The district also contains a large non-contributing public housing development built in 1988.). The eastern and southern boundaries of the district follow the existing line of the Alexandria Historic District [placed on the National Register of Historic Places (NRHP) in 1966, amended 1984, and listed as a National Historic Landmark (NHL) in 1969] and the George Washington Parkway [placed on the NRHP in 1980]. Along the eastern and southern edges of the district, the architecture tends to blend in with that of the Alexandria Historic District.

September 2015: The Uptown/ Parker-Gray Historic District covers over 45 blocks in the northwestern quadrant of Old Town Alexandria and abuts the Alexandria Historic District. The district consists mainly of small row houses and town homes built in the mid-to-late nineteenth century which continue to maintain a high level of historic integrity and feeling. The boundaries have not been altered since it was placed on the National Register of Historic Places in 2010.

Surveyor Assessment:

2007: The Uptown/Parker-Gray Historic District, located in the City of Alexandria, Virginia, covers over a forty-five block area of architecturally related historic resources and lies just northwest of the National Register-listed Alexandria Historic District. The district meets National Register Criterion A for both Social History and African American Ethnic Heritage, and Criterion C for Architecture. Contained in the district is a neighborhood known as Uptown, the largest of several Alexandria neighborhoods associated historically with the city's African American community. The Uptown/Parker-Gray Historic District is a good example of an urban historic district with a mixture of building types and architectural styles. It contains an important collection of churches, lodges, and other properties associated with the social life of the neighborhood and the ethnic heritage of the city as a whole. Most of the architecturally significant resources are townhouses and row buildings. The vernacular frame townhouses from the late nineteenth century represent historic styles of the era as they manifested themselves locally; they also reflect the racial segregation of the core area of the neighborhood and the related economic stratification, differing in size, materials, details, and design from houses of the same age a few blocks away in historically white neighborhoods. By contrast to these older houses, nearly all the twentieth-century residential buildings in the district are brick and most were constructed in rows of three to twelve units, often as part of development projects of 20 or more units. The district's twentieth-century residential buildings, whether individual or in rows, are nearly all in the Colonial Revival style, an apparent effort to emphasize Alexandria's early architectural heritage even when several whole blocks of new buildings were being built at once with little or no visual link to the oldest parts of the city. In addition to privately built row houses, there are over 200 units of public housing constructed in several different projects. The public housing, like most other houses built from circa 1900 to the end of the Period of Significance, consists almost exclusively of brick row buildings in the Colonial

Revival style. The district is additionally significant under Criterion A in the area of Social History for its association with institutionalized segregation during the Period of Significance, most notably the establishment of segregated schools, libraries, and public housing by the City of Alexandria. The public housing, initiated at the beginning of World War II to create better homes for defense workers, had a negative impact on the fabric of an existing African American community; it displaced several blocks of private residences on the justification that they were old and inferior in design. Exclusively occupied by African Americans as a matter of legal policy until the 1960s, the housing projects reflect the Social History of the segregation era. The Period of Significance extends from circa 1810, the construction date of the earliest house in the district, to 1959, to include the completion of the last phase of a public housing project built in phases in the 1940s and 1950s.

The resources listed as contributing in the district are all approximately fifty or more years of age, as determined in large part by comparing current data to the 1958 Sanborn Insurance Map for Alexandria. The public housing projects in the district that were initiated in the 1940s (for example, Ramsey Houses in 1942 and the two blocks of Samuel Madden Homes along Patrick and Henry Streets in 1945) led to the construction of the James Bland Homes project in four blocks at the northeast corner of the district in 1954. The design of the James Bland Homes project closely resembles the neighboring Samuel Madden Homes, in part because they were designed by the same architect, Joseph Saunders. Saunders designed one final block, filling in a gap between the Samuel Madden Homes and the James Bland Homes. This block, between North Alfred, North Patrick, Montgomery, and First Streets, was not completed until 1959. Therefore, this date was used as the end of the Period of Significance.

Boundaries and Previously Listed Alexandria Historic District
The district's boundaries meet those of previously listed areas to the south and east. The western boundary line includes architecturally related buildings up to the topographic barrier created when the railroad tracks at the district's western edge were raised, and it excludes new buildings in some of the outermost blocks. While all the resources from the period of significance are architecturally related, the boundaries include a few blocks of residences at the district's outer fringes that were not associated with the African American community and may not have been associated with the neighborhood name "Uptown." The city created its own local ordinance district for the Parker-Gray area in 1984. Until that time, the name Parker-Gray had only been used for the two historic African American schools in the neighborhood, both of which had been demolished by the 1970s. The name Parker-Gray came to be the broader name for the district, as a result of the city's 1984 designation, and the older name, Uptown, became less used and remains associated with a smaller area. The proposed Uptown/Parker-Gray Historic District is slightly larger than the city's Parker-Gray Historic District, extending approximately one block further to the south, the north, and the northwest.

See nomination for additional historical context.

September 2015: The Uptown/ Parker-Gray Historic District covers over 45 blocks in the northwestern quadrant of Old Town Alexandria and abuts the Alexandria Historic District. The district continues to display a high level of historic integrity so should continue to be listed on the NRHP under National Register Criterion A for both Social History and African American Ethnic Heritage, and Criterion C for Architecture.

Surveyor Recommendation: Recommended Eligible

Ownership

Ownership Category	Ownership Entity
Private	*No Data*
Public - Federal	*No Data*
Public - Local	*No Data*

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Primary Resource Information

Resource Category: Other

Resource Type: Historic District

Date of Construction: 1810Ca

Historic Time Period: Early National Period (1790 - 1829)

Historic Context(s): Architecture/Community Planning, Commerce/Trade, Domestic, Education, Ethnic/Immigration, Recreation/Arts, Religion

Architectural Style: Mixed (more than 3 styles from different periods, 0)

Form: *No Data*

Number of Stories: *No Data*

Condition: Good

Interior Plan: *No Data*

Threats to Resource: Development

Architectural Description:

2007 nomination: The physical appearance of the Uptown/Parker-Gray Historic District has not changed drastically in spite of dramatic changes in the demographics and socio-economic characteristics of the neighborhood's residents since the end of the period of significance. A large African American neighborhood in a city that was still effectively segregated in 1959, the area was in decline after 1960, saw some new construction in the 1970s, and then experienced an acceleration of growth as evidenced in a substantial wave of construction from the mid-1980s to the present. The district's non-contributing resources include many small houses, a few small commercial buildings, and several visually dominant large buildings and complexes built since the mid-1970s. The smaller buildings built since the mid-1980s, however, are generally in historic styles that blend in so well that it is often difficult to distinguish between recently restored historic houses and new infill ones. The concern for historic preservation, reflected in the large number of historic houses from within the period of significance that have been restored in the last twenty years, has enhanced the district's architectural coherence and, in so doing, has kept it from losing the integrity of the numerous original buildings that have never been greatly altered.

Although the Uptown/Parker-Gray Historic District lies entirely northwest of the original 1749 plat of the city, the part of Alexandria occupied by the present historic district was incorporated into the Alexandria street system as early as the 1790s. At that time, the city's plat was greatly expanded to about eight times its original size. The expansion of the grid occurred just as the city became part of the District of Columbia, a decision that was reversed in 1846.

Between 1798 and the 1860s, the northwest quadrant of the city remained largely vacant, despite the grid of streets and the construction of a few large residences. Even after 1860, the development of the area was uneven and included several temporary land uses, such as Civil War military installations that occupied numerous blocks of previously vacant land. The majority of the Uptown/Parker-Gray area did not begin to develop more coherently as a unified neighborhood until after 1870. Historic maps show that by the 1860s contiguous houses had been built in the areas that lie within two blocks of King Street (along Cameron and Princess Streets and between the two) and in isolated areas north of Princess Street along Oronoco Street and Columbus Street. While some of the earliest houses were brick, the main building form used in the district before the twentieth century consisted of frame town houses built in rows, often with either side-gable roofs or shed roofs and shared party-walls. The facades of the houses incorporated the characteristic details of the local versions of mid-nineteenth-century architectural styles, such as the Greek Revival and the Italianate. However, where open areas remained between houses, exposed side elevations were most often left plain with no windows or ornamental details, possibly an indication that future infill developments were anticipated with the construction of each freestanding house. Within the limited areas of dense development that had appeared by the 1860s, a few brick houses from the early nineteenth century are still extant, sometimes found in pairs, as two-story side-gable Greek Revival-style forms. However, of the remaining buildings that were built between 1863 and 1877, the majority are wood frame town houses with nearly flat shed roofs.

Beyond the southern and southeastern blocks of the current district, only a few other buildings had been constructed by the 1870s, and most of them have been subsequently demolished. While approximately 80-90 percent of the platted land north of Princess Street remained unoccupied by any permanent buildings until at least a decade after the Civil War, there were a few instances where an individual block contained one large residence or a few smaller ones. Prior to the 1870s, rows of modest-sized dwellings that filled one side of a street, from intersection to intersection, were the norm in other parts of Old Town; however, rows of this kind appeared in only a couple of locations in the Uptown/Parker-Gray area in the first 75 years of the street grid's existence. There were a few cases where a city block contained one large residence surrounded by outbuildings. The grounds of one or two of the large houses appear on maps to have occupied two or three contiguous blocks. In other blocks, found in between those that contained the larger properties, small houses were found on scattered parcels so that they were somewhat isolated from one another. Of the large houses, not a single example remains extant. The first houses to appear in any given block were almost always built on confined parcels, and the house was usually placed near the front edge of the property in a way that anticipated development of other houses on the neighboring lots. Only a few of these smaller houses survived to the present. In general, they are found within contiguous rows that developed as new row house forms were aggregated around them. There were very few institutional buildings in what is now the Uptown/Parker-Gray area prior to 1880. In one or two instances, institutions (such as churches) are still found at the same location in the neighborhood; however, the current buildings at these locations were all built, or substantially re-built, after 1880.

See nomination for additional details.

September 2015: The Uptown/ Parker-Gray Historic District does not appear to have been significantly altered in a way that impacts the historic integrity of the resource since it was placed on the National Register of Historic Places in 2010.

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Secondary Resource Information

Secondary Resource #1

Resource Category: *No Data*
Resource Type: *No Data*
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:

No Data

Historic District Information

Historic District Name: Parker-Gray Historic District
Local Historic District Name: Uptown/Parker-Gray Historic District
Historic District Significance: 2007: The Uptown/Parker-Gray Historic District, located in the City of Alexandria, Virginia, covers over a forty-five block area of architecturally related historic resources and lies just northwest of the National Register-listed Alexandria Historic District. The district meets National Register Criterion A for both Social History and African American Ethnic Heritage, and Criterion C for Architecture. Contained in the district is a neighborhood known as Uptown, the largest of several Alexandria neighborhoods associated historically with the city's African American community. The Uptown/Parker-Gray Historic District is a good example of an urban historic district with a mixture of building types and architectural styles. It contains an important collection of churches, lodges, and other properties associated with the social life of the neighborhood and the ethnic heritage of the city as a whole. Most of the architecturally significant resources

are townhouses and row buildings. The vernacular frame townhouses from the late nineteenth century represent historic styles of the era as they manifested themselves locally; they also reflect the racial segregation of the core area of the neighborhood and the related economic stratification, differing in size, materials, details, and design from houses of the same age a few blocks away in historically white neighborhoods. By contrast to these older houses, nearly all the twentieth-century residential buildings in the district are brick and most were constructed in rows of three to twelve units, often as part of development projects of 20 or more units. The district's twentieth-century residential buildings, whether individual or in rows, are nearly all in the Colonial Revival style, an apparent effort to emphasize Alexandria's early architectural heritage even when several whole blocks of new buildings were being built at once with little or no visual link to the oldest parts of the city. In addition to privately built row houses, there are over 200 units of public housing constructed in several different projects. The public housing, like most other houses built from circa 1900 to the end of the Period of Significance, consists almost exclusively of brick row buildings in the Colonial Revival style. The district is additionally significant under Criterion A in the area of Social History for its association with institutionalized segregation during the Period of Significance, most notably the establishment of segregated schools, libraries, and public housing by the City of Alexandria. The public housing, initiated at the beginning of World War II to create better homes for defense workers, had a negative impact on the fabric of an existing African American community; it displaced several blocks of private residences on the justification that they were old and inferior in design. Exclusively occupied by African Americans as a matter of legal policy until the 1960s, the housing projects reflect the Social History of the segregation era. The Period of Significance extends from circa 1810, the construction date of the earliest house in the district, to 1959, to include the completion of the last phase of a public housing project built in phases in the 1940s and 1950s.

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See nomination for additional historical context.

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CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Emily Anderson
Organization/Company: Dovetail CRG
Sponsoring Organization: *No Data*
Survey Date: 9/17/2015
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Event Type: NRHP Listing

DHR ID: 100-0133
Staff Name: NPS
Event Date: 1/12/2010
Staff Comment
VIRGINIA, ALEXANDRIA INDEPENDENT CITY, Uptown-Parker-Gray Historic District, Roughly Cameron St. N. to 1st St. and N.

Columbus St. W. to the following sts forming W. line, Buchanan, N. West, Alexandria, LISTED, 1/12/10

Event Type: VLR Listing

DHR ID: 100-0133
Staff Name: State Review Board
Event Date: 6/19/2008
Staff Comment

Criterion A and C.

Event Type: NRHP Nomination

DHR ID: 100-0133
Staff Name: Ariannna Drumond, Terry Necciai
Event Date: 7/24/2007
Staff Comment

John Milner Associates, Inc. - with 2009 editing and updates by DHR staff Joannie Evans, David Edwards, Jeff Smith.

Event Type: DHR Staff: Potentially Eligible

DHR ID: 100-0133
Staff Name: DHR
Event Date: 3/20/1990
Staff Comment

No Data

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: *No Data*
Organization/Company: JMA, Inc.
Sponsoring Organization: *No Data*
Survey Date: *No Data*
Dhr Library Report Number: *No Data*
Project Staff/Notes:

No Data

DRAFT

Bibliographic Information

Bibliography:

Name: TAA
DHR CRM Report Number: AX-117
Bibliographic Notes: AX-117: Documentary Study and Archaeological Resource Assessment for the James Bland Homes, City of Alexandria, Virginia, 2008. #2008-0695

Name: TAA
DHR CRM Report Number: AX-118
Bibliographic Notes: AX-118: Phase I Archaeological Investigations of the James Bland Development Property in Alexandria, Virginia, 2008. #2008-0695

Property Notes:

No Data

Project Bibliographic Information:

Staton, Heather Dollins and Emily Anderson.
Architectural Reconnaissance Survey for the Washington, D.C. to Richmond, Virginia High Speed Rail Project: Roslyn to Alexandria.
Dovetail Cultural Resource Group, Fredericksburg, Virginia, 2015.

Snapshot

Date Generated: September 19, 2016

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	1750 - 1799
Site Type(s):	Military base/facility
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	ALEXANDRIA
County/Independent City:	Alexandria (Ind. City)
Physiographic Province:	No Data
Elevation:	No Data
Aspect:	No Data
Drainage:	No Data
Slope:	No Data
Acreage:	No Data
Landform:	Other
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components

Component 1

Category:	Military/Defense
Site Type:	Military base/facility
Cultural Affiliation:	Euro-American
DHR Time Period:	Colony to Nation, Contact Period, Early National Period
Start Year:	1750
End Year:	1799
Comments:	civil war military installtion

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

DRAFT

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

No Data

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Unknown (DSS)

Investigator: Alexandria Arch.-Bromberg

Survey Date: 11/1/1991

Survey Description:

Excavated nine 18-in shovel tests by natural stratigraphic levels. Soils was screened through 1/4" wire mesh.
Five shovel tests were placed along a transcet to intersect the barracks, sutler's and various open activity areas of the complex. Tests were also placed to locate sinks and blacksmithy. A possible cobble path was discovered in ST8 in an area which would have been adjacent to the barracks, and a hard clay surface (perhaps a road) was noted in ST9.

Current Land Use	Date of Use	Comments
Dwelling, multiple	*No Data*	Urban residential. East Half of block comprised of 20th century townhouses: west half of multi-family, two story public housing. Potential for renovation and some development.

Threats to Resource: No Data

Site Conditions: Site Condition Unknown

Survey Strategies: Subsurface Testing

Specimens Collected: No

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

mid-19th century ceramics and bottle glass were recovered (cataloguing in progress). These artifacts probably relate to occupation of the block during the Civil War

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: No Data

Permanent Curation Repository: No Data

Field Notes: Yes

Field Notes Repository: Alexandr

Photographic Media: No Data

Survey Reports: No Data

Survey Report Information:

Historic maps including
1)1988 Sanborn Insurance Mps
2)1863 Quartermaster drawing of site
3)Overlay map
4)Owner listing

Survey Report Repository: Alexandria Archaeology

DHR Library Reference Number: No Data

Significance Statement: No Data

Surveyor's Eligibility Recommendations: No Data

Surveyor's NR Criteria Recommendations, : No Data

Surveyor's NR Criteria Considerations: No Data

DRAFT

ENCLOSURE 4

DHR Project No. 2015-0558

Agency and Consulting Parties List

STATE HISTORIC PRESERVATION OFFICE CONTACT

Mr.	Roger	Kirchen	Virginia Department of Historic Resources	2801 Kensington Ave	Richmond	VA	23221	Roger.kirchen@dhr.virginia.gov

FEDERAL AGENCY CONTACTS

Mr.	Eric	Keeler	City of Alexandria Office of Housing	421 King St Ste 200	Alexandria	VA	22314	Eric.Keeler@alexandriava.gov
Mr.	Leroy W.	Battle, CCIM, AICP	Virginia Housing Development LLC, whose sole member is ARHA	401 Wythe St	Alexandria	VA	22314	lbattle@ARHA.US
Ms.	Connie	Staudinger	Alexandria Redevelopment and Housing Authority	401 Wythe St	Alexandria	VA	22314	cstaudinger@ARHA.US

CONSULTING PARTY CONTACTS

Ms.	Francine	Bromberg	Alexandria Archaeology	105 N Union St	Alexandria	VA	22314	Francine.Bromberg@alexandriava.gov
Mr.	John	Sprinkle	Alexandria Historical Restoration and Preservation Commission					john_sprinkle@nps.gov
Mr.	J. Lance	Mallamo	Director of Office of Historic Alexandria	220 N Washington St	Alexandria	VA	22314	
Ms.	Audrey	Davis	Alexandria Black History Museum	902 Wythe St	Alexandria	VA	22314	
Mr.	Seth	Tinkham	Alexandria Archaeology Commission	734 S Fayette St #21	Alexandria	VA	22314	seth.tinkham@gmail.com
Ms.	Debbie	Ackerman	Alexandria Historical Society	201 S Washington St	Alexandria	VA	22314	alexandriahistoricalsociety@gmail.com
Ms.	Cheryl	Malloy	ALIVE! Inc.	2723 King St	Alexandria	VA	22302	CPM@malloyassoc.com
Ms.	Townley	McElhiney	Historic Alexandria Foundation	218 N Lee St Ste 310	Alexandria	VA	22314	tmcelhiney@verizon.net
Ms.	Gail	Rothrock	Historic Alexandria Foundation	218 N Lee St Ste 310	Alexandria	VA	22314	gcrothrock@gmail.com

CONSULTING PARTY CONTACTS

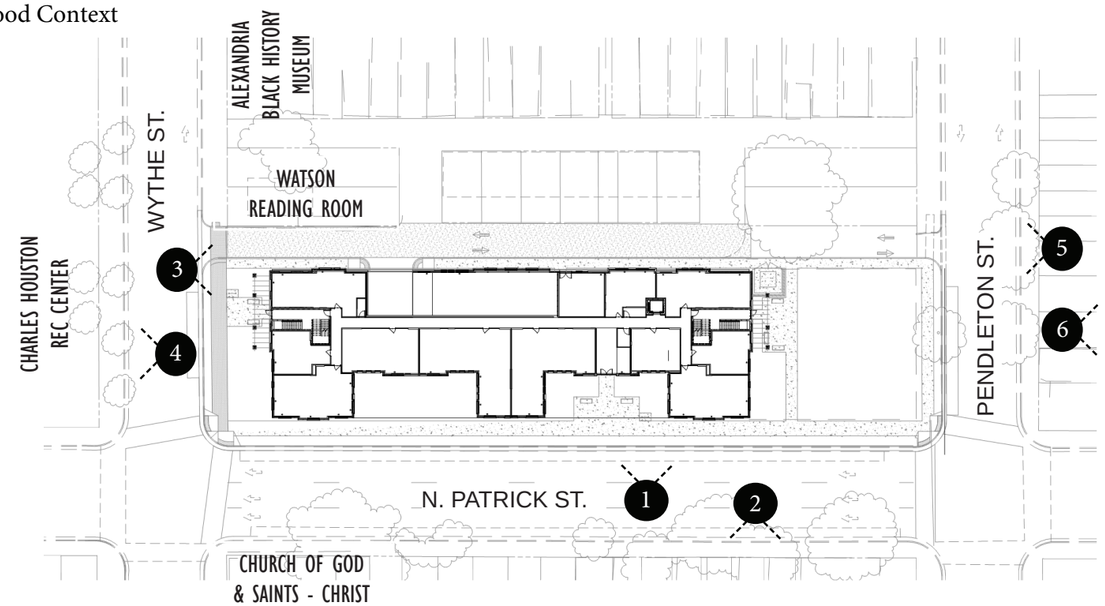
Mr.	Boyd	Walker	Greater Alexandria Preservation Alliance	1307 King St	Alexandria	VA	22314	boydwalker2012@gmail.com
Mr.	Elliot	Bell-Krasner	Vice Chair of Historic Alexandria Resources Commission					ebk2020@googlemail.com
Ms.	Delaitre J	Hollinger	National Association for the Preservation of African-American History and Culture	PO Box 6663	Tallahassee	FL	32314	ceo@blackpreservation.org
Ms.	Elsie M	Mosqueda	Adjacent Property Owner	900 Pendleton St	Alexandria	VA	22314	lseaside900@comcast.net
Mr.	Nathaniel	George	Adjacent Property Owner	908 Pendleton St	Alexandria	VA	22314	ngeorge@vt.edu
Ms.	Ninette	Sadusky	Adjacent Property Owner	PO Box 416	Alexandria	VA	22313	saduskyni@yahoo.com
Mr.	Robert G	Roe	Adjacent Property Owner	920 Pendleton St	Alexandria	VA	22314	rglenroe@gmail.com
Ms.	Lila	Mei Lee	Adjacent Property Owner	920 Pendleton St	Alexandria	VA	22314	rglenroe@gmail.com
Mr.	Gregory	Cord	Adjacent Property Owner	1013 Pendleton St	Alexandria	VA	22314	gcord-mys@att.net
Ms.	Vivian	Nava-Cord	Adjacent Property Owner	1013 Pendleton St	Alexandria	VA	22314	gcord-mys@att.net
Mr.	Al	Cox	Department of Planning & Zoning, Preservation	301 King St Ste 2100	Alexandria	VA	22314	Al.Cox@alexandriava.gov
Ms.	Catherine	Miliaras	Department of Planning & Zoning, Preservation	301 King St Ste 2100	Alexandria	VA	22314	Catherine.Miliaras@alexandriava.gov
Ms.	Karen S.	DeVito	Catholics for Housing, Inc.	18139 Triangle Shopping Plaza Ste 209	Dumfries	VA	22026-2582	karen@cfhva.org

ENCLOSURE 5

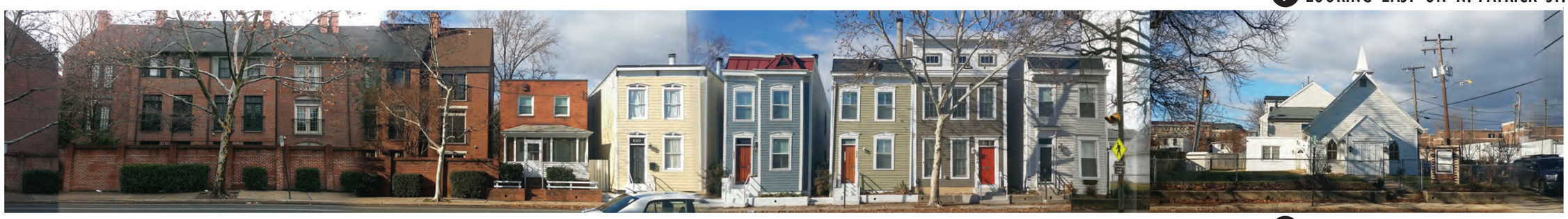
DHR Project No. 2015-0558

Exhibits and Photographs of Resources and Neighborhood Context

Enclosure 5: Photographs of Ramsey Homes and Neighborhood Context
September 29, 2016
DHR Project No. 2015-0558



1 LOOKING EAST ON N. PATRICK ST.



2 LOOKING WEST ON N. PATRICK ST.

RAMSEY HOMES

CONTEXT PHOTOS

ALEXANDRIA, VA
BOARD OF ARCHITECTURAL REVIEW
08.26.2016

ARHA
VHD LLC
WALTER L. PHILLIPS Engineers of record since 1945
LC&B Land, Carroll & Blair PC ATTORNEYS AT LAW, EST. 1978

Application & Materials
BAR2015-0029
699 N Patrick Street
8/30/2016

Architecture+Planning
8605 Westwood Center Dr.
Suite 300
Vienna, VA 22182
703.992.6116
ktgy.com

3 LOOKING SOUTH ON WYTHE ST.

4 LOOKING NORTH ON WYTHE ST.

5 LOOKING NORTH ON PENDLETON ST.

6 LOOKING SOUTH ON PENDLETON ST.

RAMSEY HOMES

CONTEXT PHOTOS

ARHA

VHD LLC

WALTER L. PHILLIPS
Engineers of record since 1945

LC&B Land, Carroll & Blair PC
ATTORNEYS AT LAW, EST. 1978

Application & Materials
BAR2015-0029
699 N Patrick Street
8/30/2016

ALEXANDRIA, VA
BOARD OF ARCHITECTURAL REVIEW
08.26.2016

Architecture+Planning
8605 Westwood Center Dr.
Suite 300
Vienna, VA 22182
703.992.6116
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ktgy

Photograph 1: Alexandria Black History Museum and Ramsey Homes, Building I, looking SW across Wythe St.

Photograph 2: Ramsey Home, Building I and Charles Houston Recreation Center, looking west from NW corner of Wythe and N. Alfred St.

Photograph 3: Charles Houston Recreation Center and neo-traditional housing on N. Alfred St., looking NE from NW corner of Wythe and N. Alfred St.

Photograph 4: Ramsey Homes, Buildings I-III, looking south down the alley from north side of Wythe St.

Photograph 5: Ramsey Homes, Buildings I-IV, looking SE from NW corner of Wythe and N. Patrick St.

Photograph 6: Ramsey Homes, Buildings I, and local church, looking SE from north side of Wythe St.

Photograph 7: Ramsey Homes, Buildings I-IV, looking SE from west side of N. Patrick St.

Photograph 8: Walled patios, Rec Center, and Ramsey Homes, Buildings I-II, looking NE from west side of N. Patrick St.

Photograph 9: Ramsey Homes, Buildings III and IV, looking SE from west side of N. Patrick St.

Photograph 10: Ramsey Homes, Buildings I, showing typical side elevation, looking East from West side of N. Patrick St.

Photograph 11: Ramsey Homes, Buildings I, looking NE from west side of N. Patrick St.

Photograph 12: Ramsey Homes, Buildings II, looking NE from west side of N. Patrick St.

Photograph 13: Ramsey Homes, Buildings III, looking NE from west side of N. Patrick St.

Photograph 14: Ramsey Homes, Buildings IV, looking NE from west side of N. Patrick St.

Photograph 15: Ramsey Homes, Buildings IV, III, II, and I and the Rec Center, looking N/NE down the alley from the north side of Pendleton St.

Photograph 16: Ramsey Homes, Buildings IV and III, looking SW from the alley.

Photograph 17: : L to R, Ramsey Homes, Building II and pre-1932 row houses, looking west from alley.

Photograph 18: Ramsey Homes, Buildings II (triplex) and I, looking NW from the alley.

Photograph 19: Ramsey Homes Building I, Charles Houston Recreation Center, and Black History Museum Watson Reading Room, looking N from mid-block of N. Alfred St. alley.

Photograph 20: N. Alfred St. alley, looking north from Pendleton St.

Photograph 21: L to R, Pendleton St. alley garages, King's Rowe (built 1980), and Ramsey Homes Building IV, looking west from N. Alfred St. alley.

Photograph 22: L to R, alley garages, Ramsey Homes Building III, pre-1932 row houses, and Building II, looking west from N. Alfred St. alley.

Photograph 23: L to R, Ramsey Homes, Building I and Black History Museum Watson Reading Room, looking NW from N. Alfred St. alley.

Photograph 24: Rear yards of pre-1932 buildings on N. Alfred St., looking east from Ramsey Homes alley mid-block.

Photograph 25: Pre-1932 contributing buildings on Pendleton Street east of Ramsey Homes Building IV, looking west from north side of Pendleton St.

Photograph 26: Pre-1932 contributing buildings and Ramsey Homes Building IV, looking west from south side of Pendleton St.

Photograph 27: Pre-1932 contributing buildings on N. Patrick St. south of Ramsey Homes, looking SW from SW corner of N. Patrick and Pendleton St.

Photograph 28: Pre-1932 contributing buildings, looking N/NW towards Pendleton St. and Ramsey Homes from west side of N. Patrick St.

Photograph 29: Converted building and Ramsey Homes, Buildings I-IV, looking north towards Pendleton St. from west side of N. Patrick St.

Photograph 30: Ramsey Homes, Buildings II-IV and pre-1932 contributing buildings, looking NW towards Pendleton St. from west side of N. Patrick St.

Photograph 31: King's Rowe (built 1980) and Ramsey Homes, Building IV, looking NW towards N. Patrick St. from south side of Pendleton St.

Photograph 32: King's Rowe built 1980 across from Ramsey Homes, looking NW from corner of Pendleton and N. Patrick St.

Photograph 33: Recent development two blocks from Ramsey Homes, looking west from SW corner of Pendleton and N. Patrick St.

Photograph 34: Recent development on SW corner of Pendleton St and Rt. 1 one block from Ramsey Homes, looking SW from NE corner.

ENCLOSURE 6

DHR Project No. 2015-0558

Area of Potential Effect Generated in V-CRIS

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- USGS GIS Place names
- County Boundaries

Enclosure 6: Area of Potential Effect
September 29, 2016
DHR Project No. 2015-0558
Page 1 of 3

N

Feet

0 50 100 150 200

1:2,257 / 1"=188 Feet

Title: Ramsey Homes Direct Effects **Date: 6/21/2016**

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

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Enclosure 6: Area of Potential Effect
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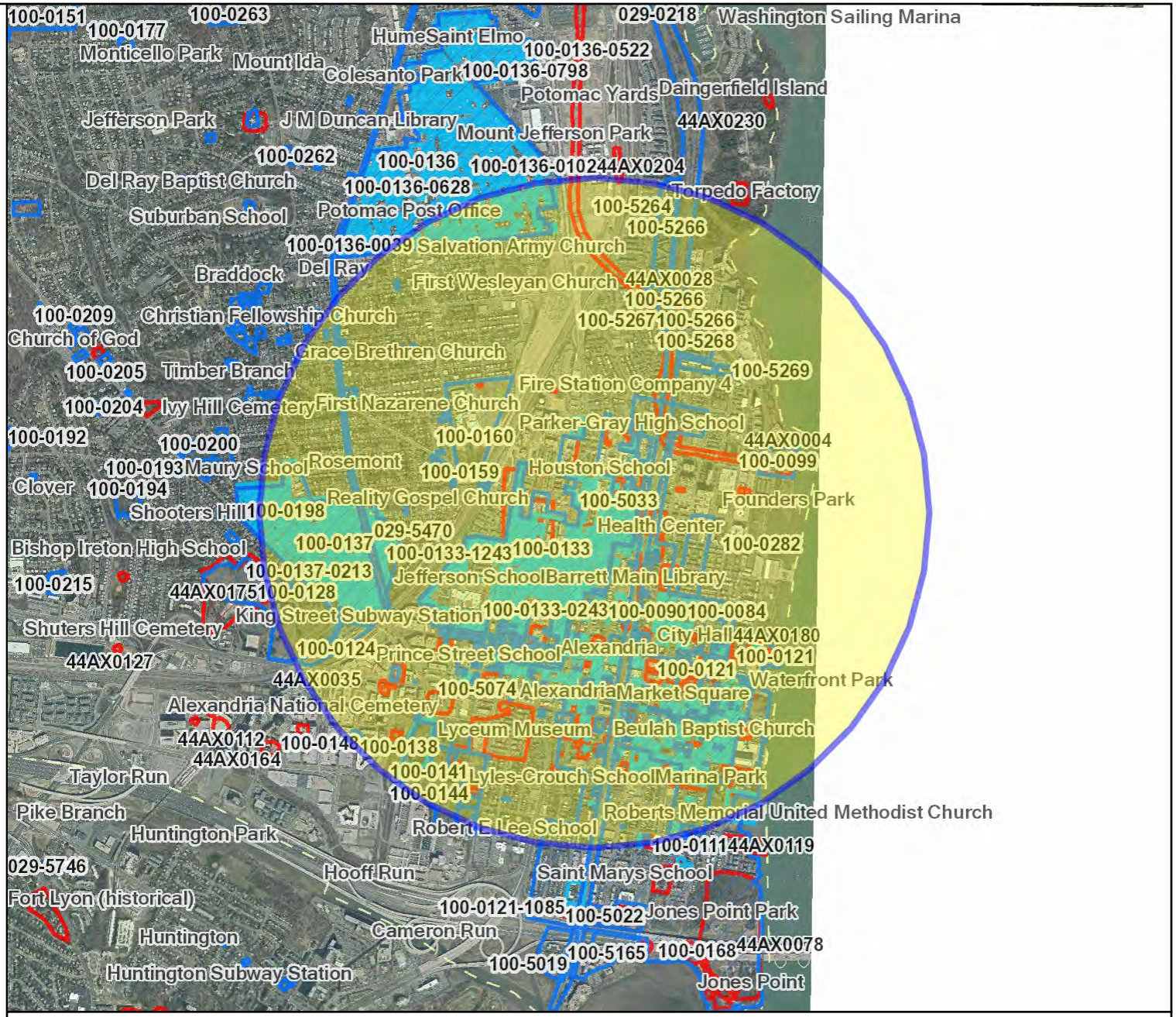

N

Feet

0 600 1200 1800 2400

1:36,112 / 1"=3,009 Feet

Title: Ramsey Homes 1 Mile Radius **Date: 6/21/2016**

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

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Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

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Enclosure 6: Area of Potential Effect
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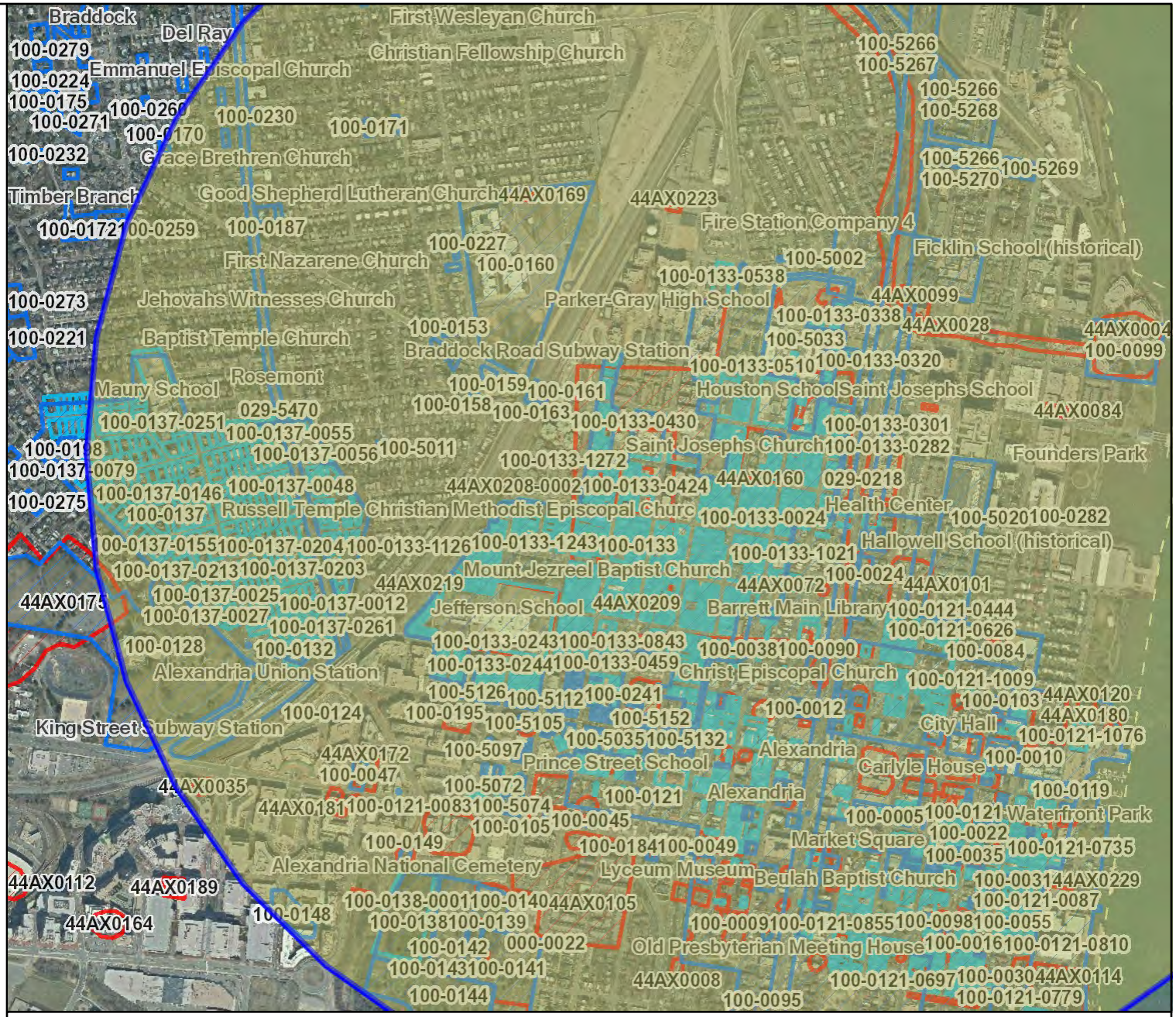


Title: Ramsey Homes 1 Mile Radius **Date: 6/21/2016**

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

ENCLOSURE 7

DHR Project No. 2015-0558

January 21, 2016 ARHA Alternative Options Design and Cost Analysis

Below, please find a summary of the concepts evaluated. *Again, while our study does not claim to be exhaustive in nature, none of the options studied were competitive under the 9% Tax Credit scenario. Please note that if 9% Tax Credit funding is not a possibility,* ***either the City must fund grants in the amount of the 9% Tax Credits****, or debt must be raised to cover the development costs. There is non-competitive 4% Tax Credit funding that would provide about 37% of the capital available under a 9% Tax Credit scenario. The IRS requires that the gap be financed with tax-exempt housing bonds, which takes the form of a mortgage on the project. There must be sufficient income (a critical mass of units) to support that mortgage. The income is in direct correlation to the number of units and the rent. The one option that appeared to have a sustainable Debt Coverage Ratio (DCR), did not score within the competitive range for Tax Credits so we modeled it as a 4% Tax Credit application. The result was that the bond debt was not sustainable.* An overview of the options is as follows:

Option 1:
The program for this option is the rehabilitation of the existing 15 units and the continued operation of the site as conventional public housing. This option was not found to be viable as it is not competitive for Tax Credits, and HUD no longer has development funds that a rehabilitation of a small project would be qualified for. There is no source of funds, except those sources that ARHA and the City are able to provide. The total sources are estimated at $3,670,308; this must be provided by the City in the form of a grant as the current income is not sufficient to repay a loan. The income at the property would be as it is today which is proven to be insufficient for operations, therefore, there is additionally a potential need for long-term operating subsidy, in addition to the subsidy HUD provides under the Annual Contributions Contract for Public Housing. Finally, the renovation costs for life safety, code compliance, and improvements to overall function and condition were only slightly less than new construction costs.

Option 2:
The program for this option is to preserve and rehabilitate the 2 buildings at the north and south ends of the site and build 22 new infill units. This option did not score high enough to be awarded 9% Tax Credits, therefore would also require significant development funds from the City. In addition to the City funding, there is not enough cash flow for ARHA to recapture the value of its asset and, the developer fees are significantly lower than the potential for other options. This option was the subject of a September 11, 2015 Memorandum from the City Manager to Council, Subject: Comparison of ARHA and City Projections Regarding Option B for Ramsey Homes.

Option 3:
The program for this option is to preserve and rehabilitate 1 building at the north end of the site and build 49 new infill units in one multi-family building. The one building that would remain would be substantially rehabilitated and the (4) 2-bedroom units would be made into (2) 3-bedroom units in order to provide the space to accommodate the VHDA required improvements such as dishwasher,

washer/dryer, HVAC, etc. This option also required that approximately 25% of the parcel are be retained for the existing building, so a 4th story was required to get the 49 units into the project. This option was not competitive for 9% Tax Credits but did have a healthy operating proforma. If you are not competitive for the 9% Tax Credits, the issue of the operating proforma is mute. Given that, we did model this as a non-competitive 4% Tax Credit application (it met the minimum score of 325). With 4% Tax Credits there is an IRS requirement for a tax-exempt bond mortgage to close the financing gap. This bond mortgage causes the Debt Coverage Ratio (DCR) to 0.82 in the first year; A DCR of 1.00 is considered a sustainable project. It typically requires a 1.2 DCR minimum to sell the credits to investors. Also note that the project only qualifies for 37% of the capital that it qualifies for as a 9% Tax Credit deal; so significantly less "free money".

Option 4

The program for this option borrowed from the study for options 3 and was to preserve and rehabilitate 1 building at the north end of the site and build 39 new infill units in one 3-story multi-family building. This option was not competitive for Tax Credits, nor did it yield a healthy enough DCR to sell to investors.

Option 5

The program for this option is to preserve and rehabilitate the 2 buildings at the north and south ends of the site and build 21 new infill units. The 2 infill buildings would be a configuration of 3 of the triplex plans borrowed from the Bland design. This option did not score high enough to be awarded 9% Tax Credits, therefore would also require significant development funds from the City. In addition to the City funding, there is not enough cash flow for ARHA to recapture the value of its asset and, the developer fees are significantly lower than the potential for other options.

In summary, the options studied were found to be infeasible due to one or multiple reasons including but not limited to:

- Cost to rehabilitate in relation to new construction.
- Would not be competitive for 9% Tax Credit funding, therefore would require substantial City funding.
- Would require ARHA to make significant land and/or developer fee contributions because there is not sufficient income to repay ARHA for these assets;
- Long-term operations were not breaking even at some point in the compliance period, therefore, operating subsidies long-term would be required from some source.

Please see the Summary of Options, as well as support for options 2 through 5 attached.

<u>Project Funding</u>

ARHA's ability to secure tax credit funding for the 53-unit Concept Due to the significant hard and soft costs added to the Project by the City and community requested modifications has been marginalized. ARHA has consistently and frequently informed the City that the concessions have inflated the budget

and put the application's competitiveness at risk. For instance, the underground parking alone added in excess of $1 million in costs. Nonetheless, the process has continued to seek modifications including a roof-top amenity, off-site improvements and increased brick. At the point that City staff requested the roof top amenity, ARHA had already exceeded the hard construction cost budget and was in a position of value-engineering the concept back into budget. The roof top amenity requires that the stairs and elevators go to the rooftop level, requires a toilet room on the roof of each building and requires additional structural costs for the added live load and dead weight. Long term, the property insurance would increase by 5% annually and ARHA will be required to maintain an amenity for which it has no experience maintaining/managing. The city's request have had not only hard and soft cost (Total Development Budget) implications but also implications relative to the long-term operating costs for the community. It is for this reason that ARHA is requesting that the City provide a residual receipts (soft) loan to the Project of up to $1,000,000. This loan leverages the Tax Credit per unit request and brings the point for this efficiency related category almost back to the earlier levels. ARHA will be applying in February for Housing Opportunity Funds and the funds used would be the funds made available by ARHA's repayment of the Glebe Park loan from Bland proceeds.

Open Space

Open space is intended to provide residents with a place to gather and interact with each other for recreation as well as educational experiences. The intention is to maximize the available open space usability; create "meaningful" open space, thus provide an area that can vary over time and ensure the space can adapt to an array of future resident demographics and needs.

The ground level open space can be used for active uses such as, a tot lot with permanent and/or movable play equipment, a community garden with vertical planters for growing fresh vegetables, portable grills with tables and chairs, hand holds for a climbing wall at the flat windowless wall facing the courtyard and seat walls for simply sitting and visiting with neighbors. The public alley will consist of a pervious surface with beautiful vistas either way you look, so will have an open space feel. Many children play stick ball in the street in urban areas. This drive area can be designed to double as usable community space at times. For instance, some part of it can be coned off for community picnics or a game afternoon.

In addition to the ground level open space, we have included 25% open space in the form of a rooftop amenity. This open space will also have active and passive uses with fixtures, furnishings and equipment for lounging as well as an area for games. This space will also be large enough for community gatherings.

While we are excited about the Project, we would be remise to say that the added cost to build the project, over and above other ARHA projects, threaten to make Ramsey Homes less competitive for the Tax Credit funding program which is severely constrained by investor and regulatory requirements. In addition to higher construction costs, the rooftop amenity will burden the property with excess operating expenses, including energy, plumbing, insurance and security. Unlike market rate developments, Ramsey's rents are capped, making the Project extremely sensitive to unnecessary operating expenses that cannot be covered by raising rents to create additional revenue. Market rate residential projects, have the flexibility to design, build and maintain rooftop amenities because they are

free to impose fees on residents, or to raise rents to cover the costs. Those fees are not constrained by State and Federal, as well as Tax Credit investor requirements, or rent ceilings. Nonetheless, ARHA made revisions to garner City staff and community support for the Project.

Compliance with the Braddock East Master Plan

ARHA has made every effort to comply with the framework and guiding principles of the Braddock Metro Neighborhood Plan (BMNP) as amended by the Braddock East Master Plan (BEMP). Not every principle or guideline is going to be met, but we believe that we have met the intention of the Plan, while acting in our role as stewards of public assets and, while watching after the welfare of our residents. We believe that our Project was able to achieve the following, in the least:

- *Promotes mixed-income communities through the redevelopment existing public housing sites within the Braddock East planning area (pages 2 and 3, Principles);*
- *Embraces the goal of creating a community that is diverse and affordable (page 2);*
- *Creates communities of mixed-income levels and large enough to sustain a critical mass of public housing residents in order to maintain strong social and support networks that are essential in low-income communities (page 3);*
- Designs the exterior facades of affordable housing *to be indistinguishable* from the market rate housing*;*
- *Incorporates heights for the new buildings that are sensitive to the scale of adjacent development (page 3);*
- Ensures that *current residents wishing to continue living in the neighborhood are able to do so (page 3);*
- Ensures that *private open space and children's play area are provided (page 3, Principle 3);*
- *Reduces parking to reflect the proximity to Metro and promote the use of public transportation (page 6);*
- *Provides underground parking (page 6 and 7 BMNP);*
- *Encourages LEED, Earthcraft or other equivalent (page 6)*
- Provides appropriate transitions in scale and massing. The elevations for the south building mimic the rhythm and scale of the townhomes on Pendleton, while the elevations for the north building have wider bays, and corner anchors for a more honest multi-family expression in order to address the civic uses and the mass of the Charles Houston Recreation Center.
- Includes architectural variety reflecting neighborhood tradition.
- Creates green edges along streets.
- Contributes to "walkable" streets as envisioned by the Plan at Wythe.

Also in keeping with the BEMP, ARHA has and will continue to work together with its public housing residents, the City of Alexandria and the larger community to create mixed-income housing to meet the needs of current and future residents, promote diverse neighborhoods, and celebrate its history and build a sustainable future together.

SUMMARY OF OPTIONS

Summary of Options

	Option 1	Option 2	Option 3 9% LIHTC	Option 3 4% LIHTC	Option 4	Option 5
1 Program						
Existing units to be renovated (Note 7)	15	8	2 (Note 7)	2 (Note 7)	2 (Note 7)	8
New Construction	0	22	49	49	39	21
Total Units	15	30	51	51	39	29
2 Total Souces	**$3,670,308**	**$8,664,822**	**$18,506,749**	**$18,506,749**	**$16,885,957**	**$ 8,985,709**
HUD RHF Grant		$855,428	$855,428	$855,428	$855,428	$855,428
9% Tax Credits (Note 10)		$6,067,110	$12,757,482		$11,136,861	$7,030,281
4% Tax Credits				$4,663,048		
Tax-Exempt Bonds				$8,095,713		
City (Soft)	$3,670,308	$1,642,284	$1,000,000	$1,000,000	$1,000,000	$1,000,000
ARHA (Soft)			$3,792,560	$3,792,560	$3,792,560	
VHDA REACH		$100,000	$100,000	$100,000	$100,000	$100,000
General Partner Equity			$1,279		$1,108	
3 Total Uses	**$3,670,308**	**$8,664,822**	**$18,506,749**	**$18,506,749**	**$16,885,957**	**$8,985,709**
Hard Construction Costs	$2,432,310	$5,969,600	$10,943,883	$10,943,883	$9,664,278	$5,933,532
Owner Costs	$1,237,998	$2,042,016	$2,230,683	$2,230,683	$2,191,383	$2,176,705
Developer Fees	$0	$653,206	$1,539,623	$1,539,623	$1,237,736	$875,472
Owner Acquisition Costs (Note 8)	$0	$0	$3,792,560	$3,792,560	$3,792,560	$0
4 Application scores within trended competitive range for 9% LIHTC of 510 - 620 (Note 6)	No	417.21	413.17	Non-competitive Min score of 325	381.67	303.90
5 DCR Year 1 - Year 15 (Typically must be 1.2 and higher for a syndicator to sell to investors)	There could be no debt repaid with the existing rent structure.	1.10 - 0 .42	1.57 - 1.48	0.82 - 0.77	1.08 - 0.83	0.80 - 0.69

NOTES

6 While the trended range of the scores is important, equally important is the number of applications competing and how many credits those higher scoring applications are requesting.

7 The Project would modify the (4) 2-bed units in the remaining building to (2) 3-bed units in order to add the LIHTC required amenities.

8 Where 0.00 is indicated for Owner Acquisition Costs, ARHA would not be able to recover the value of it's land asset.

9 All soft costs are increased because the owner entity for any of the Options would have to absorb the costs spent by ARHA to date as a increased cost of the acquisition.

10 If the option does not score within the competitive range for Tax Credits, the City must grant the funds to the Project in order to advance the concept, or there must be enough income to carry debt.

OPTION 1

REHABILITATE 15 EXISTING UNITS

PLEASE NOTE THAT THE OPERATING PROFORMA IS NOT AVAILABLE AS THIS OPTION WAS NOT FOUND TO BE VIABLE ON ANY LEVEL DUE TO THE LACK OF FUNDING

OPTION 2

REHABILITATE TWO BUILDINGS AND INFILL WITH 22 NEW CONSTRUCTION UNITS

E. Cash Flow (First Year)

1. Annual EGI Low-Income Units from (C1)		$259,972
2. Annual EGI Market Units (from C2)	+	$0
3. Total Effective Gross Income	=	$259,972
4. Total Expenses (from D)		$152,375
5. Net Operating Income	=	$107,597
6. Total Annual Debt Service (from Page 21 B2)	-	$98,011
7. Cash Flow Available for Distribution	=	$9,586

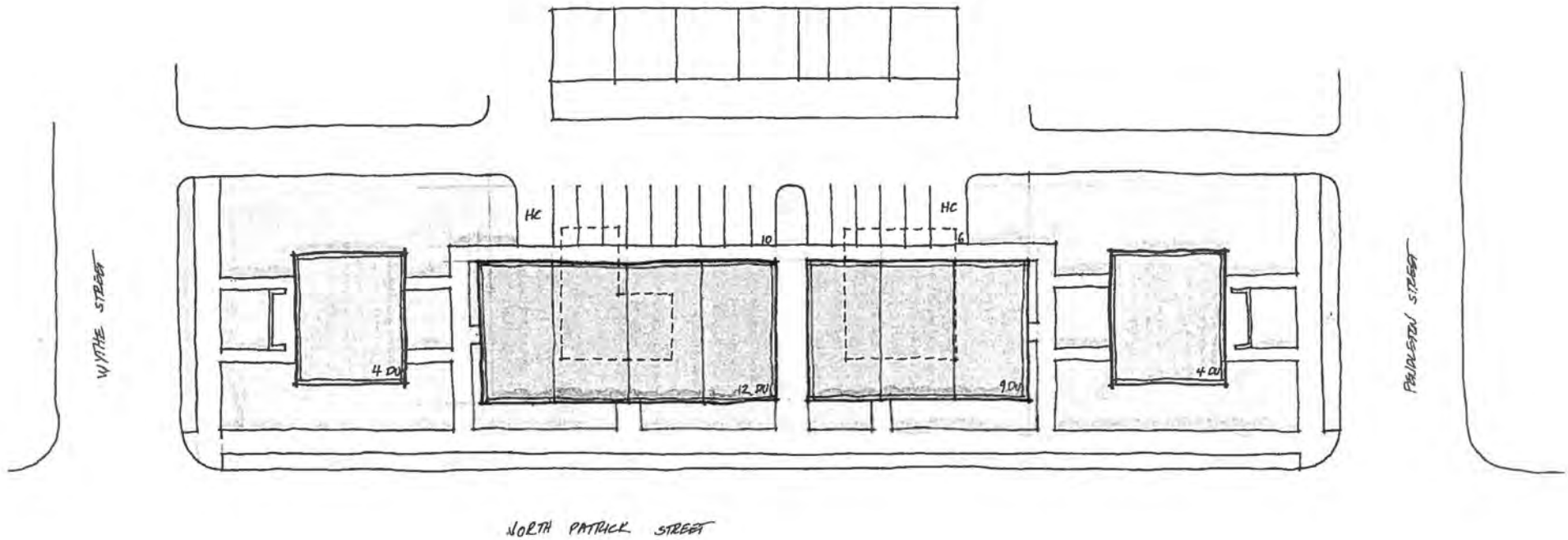
F. Projections for Financial Feasibility - 15 Year Projections of Cash Flow

	Stabilized Year 1	Year 2	Year 3	Year 4	Year 5
Eff. Gross Income	259,972	265,172	270,475	275,885	281,402
Less Oper. Expenses	152,375	159,994	167,993	176,393	185,213
Net Income	107,597	105,178	102,482	99,491	96,190
Less Debt Service	98,011	98,011	98,011	98,011	98,011
Cash Flow	9,586	7,167	4,471	1,480	-1,821
Debt Coverage Ratio	1.10	1.07	1.05	1.02	0.98

	Year 6	Year 7	Year 8	Year 9	Year 10
Eff. Gross Income	287,030	292,771	298,626	304,599	310,691
Less Oper. Expenses	194,473	204,197	214,407	225,127	236,384
Net Income	92,557	88,574	84,219	79,472	74,307
Less Debt Service	98,011	98,011	98,011	98,011	98,011
Cash Flow	-5,454	-9,437	-13,792	-18,539	-23,704
Debt Coverage Ratio	0.94	0.90	0.86	0.81	0.76

	Year 11	Year 12	Year 13	Year 14	Year 15
Eff. Gross Income	316,905	323,243	329,708	336,302	343,028
Less Oper. Expenses	248,203	260,613	273,644	287,326	301,692
Net Income	68,702	62,630	56,064	48,976	41,336
Less Debt Service	98,011	98,011	98,011	98,011	98,011
Cash Flow	-29,309	-35,381	-41,947	-49,035	-56,675
Debt Coverage Ratio	0.70	0.64	0.57	0.50	0.42

Estimated Annual Percentage Increase in Revenue	2.00%	(Must be $\leq$ 2%)
Estimated Annual Percentage Increase in Expenses	5.00%	(Must be $\geq$ 3%)



DWELLING UNITS : 29 TOTAL
2 BEDROOM : 8 RENOVATED
21 NEW
PARKING : 16 W/2 VAN HC
OPEN SPACE : 41% (12,600 SF)

Option 3 - Flats

OPTION 3

REHABILITATE ONE BUILDING AND INFILL WITH 49 NEW CONSTRUCTION UNITS

(9% TAX CREDIT MODEL)

E. Cash Flow (First Year)

1. Annual EGI Low-Income Units from (C1)		$690,726
2. Annual EGI Market Units (from C2)	+	$0
3. Total Effective Gross Income	=	$690,726
4. Total Expenses (from D)		$252,625
5. Net Operating Income	=	$438,101
6. Total Annual Debt Service (from Page 21 B2)	-	$278,604
7. Cash Flow Available for Distribution	=	$159,497

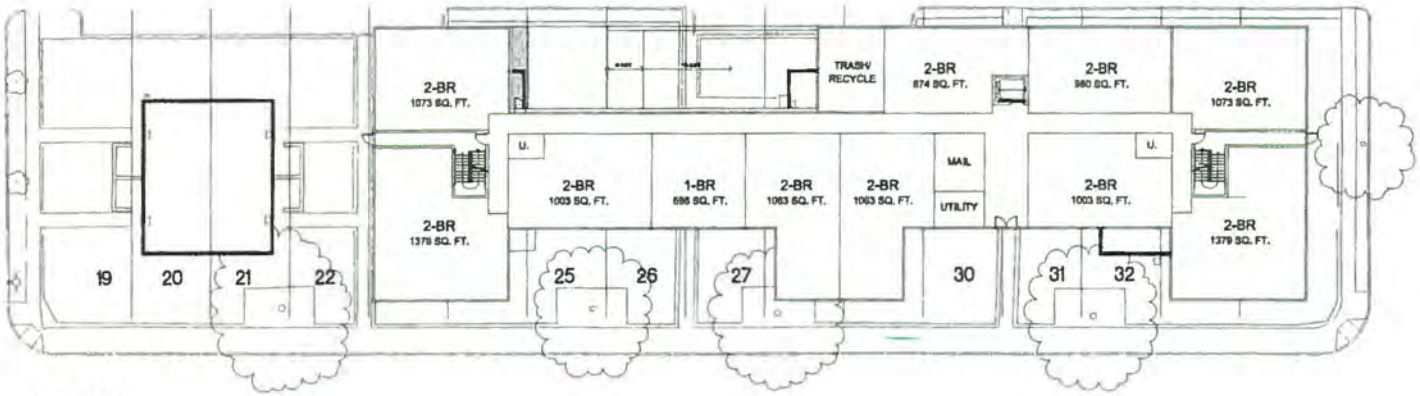
F. Projections for Financial Feasibility - 15 Year Projections of Cash Flow

	Stabilized Year 1	Year 2	Year 3	Year 4	Year 5
Eff. Gross Income	690,726	704,540	718,631	733,004	747,664
Less Oper. Expenses	252,625	265,256	278,519	292,445	307,067
Net Income	438,101	439,284	440,112	440,559	440,597
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	159,497	160,680	161,508	161,955	161,993
Debt Coverage Ratio	1.57	1.58	1.58	1.58	1.58

	Year 6	Year 7	Year 8	Year 9	Year 10
Eff. Gross Income	762,617	777,870	793,427	809,295	825,481
Less Oper. Expenses	322,421	338,542	355,469	373,242	391,904
Net Income	440,197	439,328	437,958	436,053	433,577
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	161,593	160,724	159,354	157,449	154,973
Debt Coverage Ratio	1.58	1.58	1.57	1.57	1.56

	Year 11	Year 12	Year 13	Year 14	Year 15
Eff. Gross Income	841,991	858,831	876,007	893,528	911,398
Less Oper. Expenses	411,500	432,074	453,678	476,362	500,180
Net Income	430,491	426,756	422,329	417,165	411,218
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	151,887	148,152	143,725	138,561	132,614
Debt Coverage Ratio	1.55	1.53	1.52	1.50	1.48

Estimated Annual Percentage Increase in Revenue	2.00%	(Must be $\leq$ 2%)
Estimated Annual Percentage Increase in Expenses	5.00%	(Must be $\geq$ 3%)



FIRST FLOOR

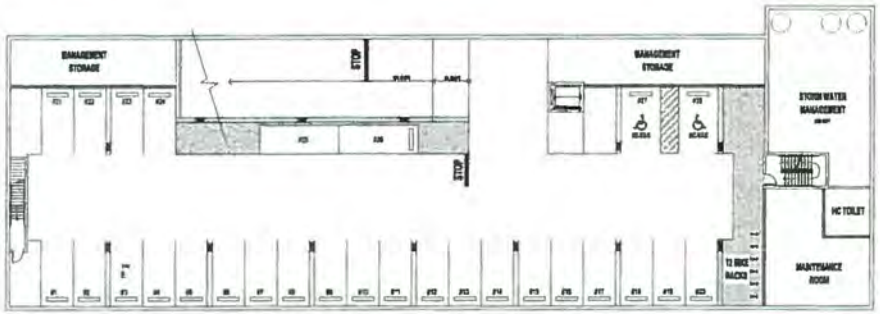
BUILDING SUMMARY
4-STORY WOOD FRAME, 5A STRUCTURES
w/ 1-STORY BELOW GRADE GARAGE, 1A STRUCTURE
BUILDING HEIGHT = 45'-8"

UNIT SUMMARY
1 BEDROOM = 9 UNITS
2 BEDROOM = 36 UNITS
3 BEDROOM = 4 UNITS
TOTAL UNITS = 49 UNITS

PARKING SUMMARY
PARKING REQUIRED (PER Z.O.) = 24 SPACES
- 60% AMI (25 UNITS x 0.5625 SP/UNIT) = 14 SPACES
- 50% AMI (10 UNITS x 0.4675 SP/UNIT) = 5 SPACES
- 30% AMI (14 UNITS x 0.3750 SP/UNIT) = 5 SPACES

PARKING PROVIDED (ON SITE) = 28 SPACES
- STANDARD SPACES = 26 SPACES
- ADA SPACES = 2 SPACES

TOTAL PARKING (ON STREET) = 5 SPACES



GARAGE FLOOR

SCALE: 1/16" = 1'-0"

RAMSEY HOMES

FLOOR PLANS

ALEXANDRIA, VA

KTGY # 2010043 10.08.2015

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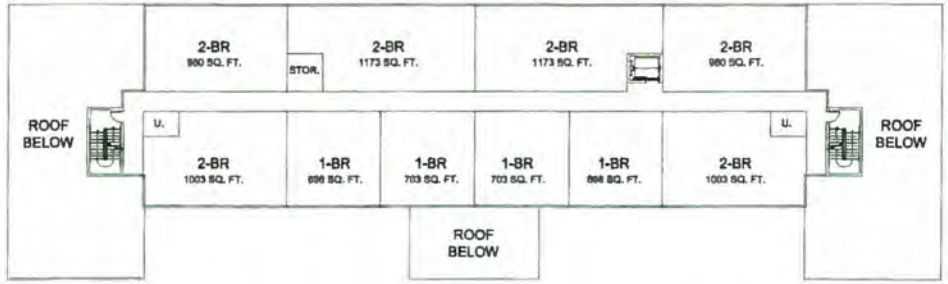

FOURTH FLOOR

TYPICAL FLOOR (2ND/3RD)

SCALE: 1/16" = 1'-0"

RAMSEY HOMES

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FLOOR PLANS

ALEXANDRIA, VA

KTGY # 15140447 14.JUN.2015

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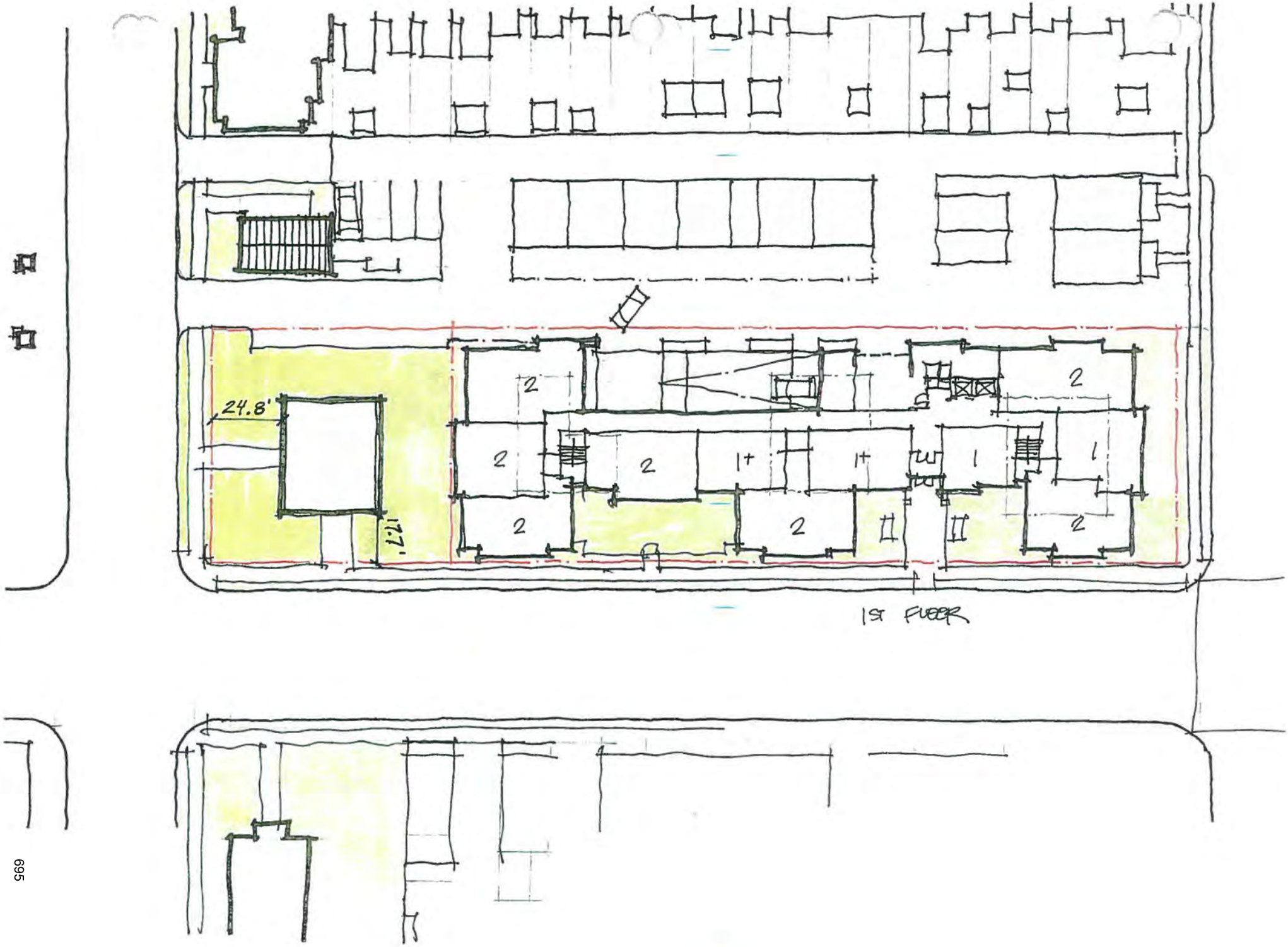
24.8'
12.1'
2
2
2
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1+
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1
1
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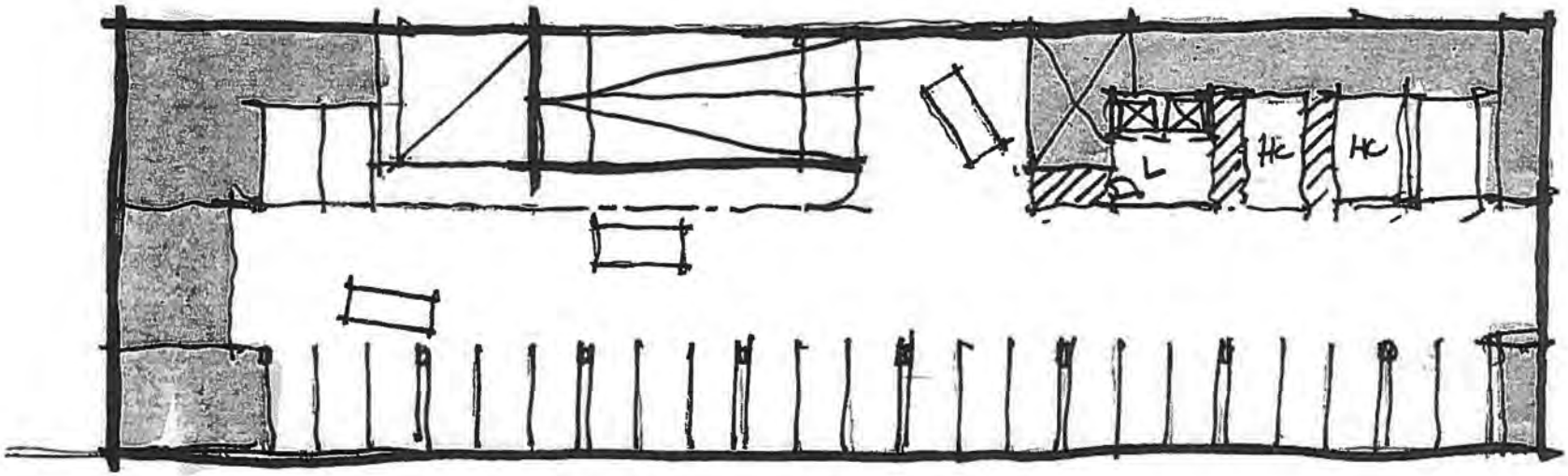
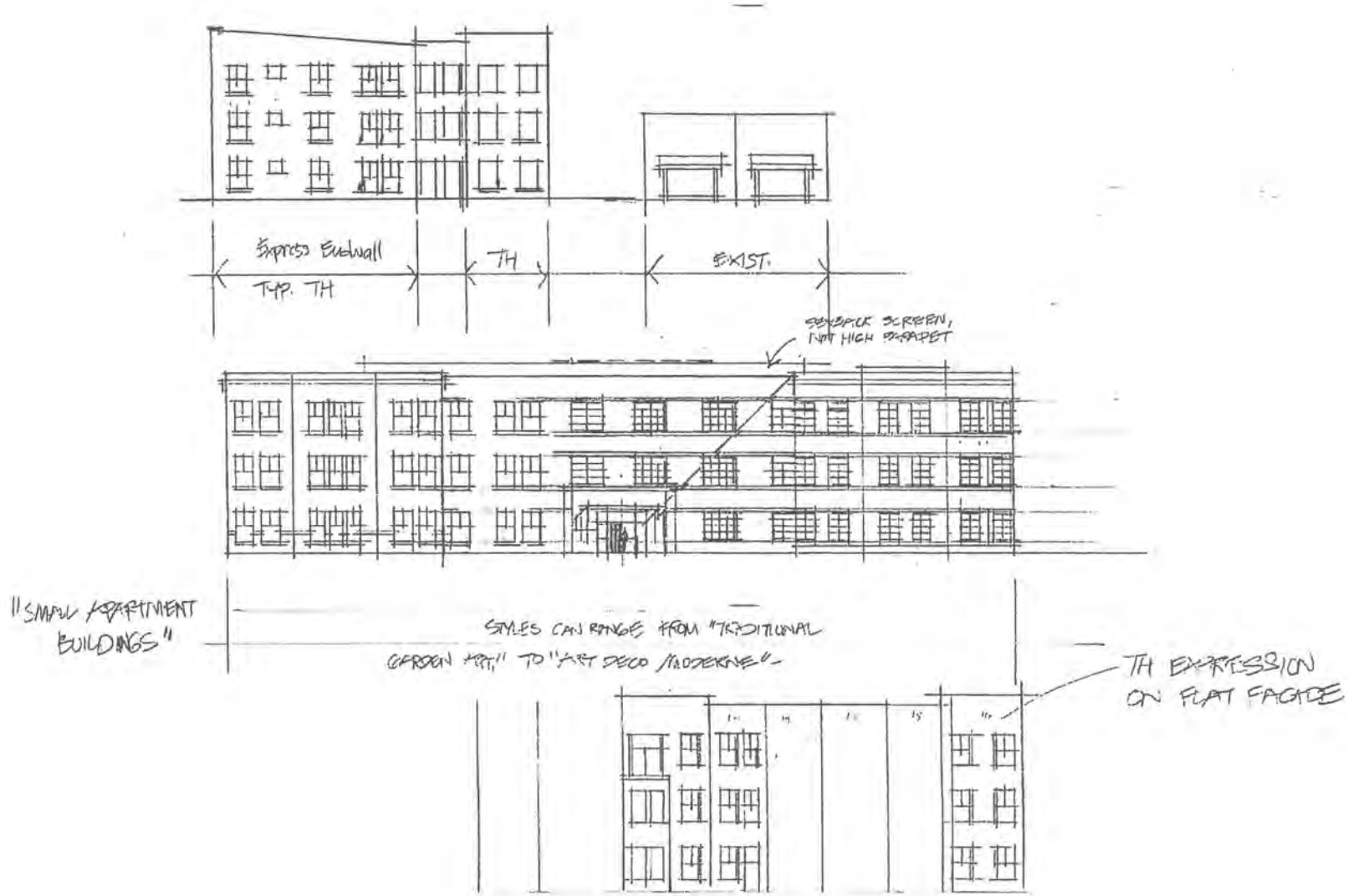
2
1st FLOOR



GARAGE - REVERSED N↔S

MAY REQUIRE 2ND EGRESS.

1" = 20'-0"


Express Endwall
TYP. TH
TH
EXIST.
SETBACK SCREEN, NOT HIGH PARAPET
"SMALL APARTMENT BUILDINGS"
STYLES CAN RANGE FROM "TRADITIONAL GARDEN APT." TO "ART DECO MODERNE"
TH EXPRESSION ON FLAT FACADE

OPTION 3

REHABILITATE ONE BUILDING AND INFILL WITH 49 NEW CONSTRUCTION UNITS

(4% TAX CREDIT/TAX EXEMPT BOND MORTGAGE MODEL)

E. Cash Flow (First Year)

1. Annual EGI Low-Income Units from (C1)		$690,726
2. Annual EGI Market Units (from C2)	+	$0
3. Total Effective Gross Income	=	$690,726
4. Total Expenses (from D)		$252,625
5. Net Operating Income	=	$438,101
6. Total Annual Debt Service (from Page 21 B2)	-	$532,365
7. Cash Flow Available for Distribution	=	($94,264)

F. Projections for Financial Feasibility - 15 Year Projections of Cash Flow

	Stabilized Year 1	Year 2	Year 3	Year 4	Year 5
Eff. Gross Income	690,726	704,540	718,631	733,004	747,664
Less Oper. Expenses	252,625	265,256	278,519	292,445	307,067
Net Income	438,101	439,284	440,112	440,559	440,597
Less Debt Service	532,365	532,365	532,365	532,365	532,365
Cash Flow	-94,264	-93,081	-92,253	-91,806	-91,768
Debt Coverage Ratio	0.82	0.83	0.83	0.83	0.83

	Year 6	Year 7	Year 8	Year 9	Year 10
Eff. Gross Income	762,617	777,870	793,427	809,295	825,481
Less Oper. Expenses	322,421	338,542	355,469	373,242	391,904
Net Income	440,197	439,328	437,958	436,053	433,577
Less Debt Service	532,365	532,365	532,365	532,365	532,365
Cash Flow	-92,168	-93,037	-94,407	-96,312	-98,788
Debt Coverage Ratio	0.83	0.83	0.82	0.82	0.81

	Year 11	Year 12	Year 13	Year 14	Year 15
Eff. Gross Income	841,991	858,831	876,007	893,528	911,398
Less Oper. Expenses	411,500	432,074	453,678	476,362	500,180
Net Income	430,491	426,756	422,329	417,165	411,218
Less Debt Service	532,365	532,365	532,365	532,365	532,365
Cash Flow	-101,874	-105,609	-110,036	-115,200	-121,147
Debt Coverage Ratio	0.81	0.80	0.79	0.78	0.77

Estimated Annual Percentage Increase in Revenue	2.00%	(Must be $\leq$ 2%)
Estimated Annual Percentage Increase in Expenses	5.00%	(Must be $\geq$ 3%)

OPTION 4

REHABILITATE ONE BUILDING AND INFILL WITH 39 NEW CONSTRUCTION UNITS

E. Cash Flow (First Year)

1. Annual EGI Low-Income Units from (C1)		$554,641
2. Annual EGI Market Units (from C2)	+	$0
3. Total Effective Gross Income	=	$554,641
4. Total Expenses (from D)		$252,625
5. Net Operating Income	=	$302,016
6. Total Annual Debt Service (from Page 21 B2)	-	$278,604
7. Cash Flow Available for Distribution	=	$23,412

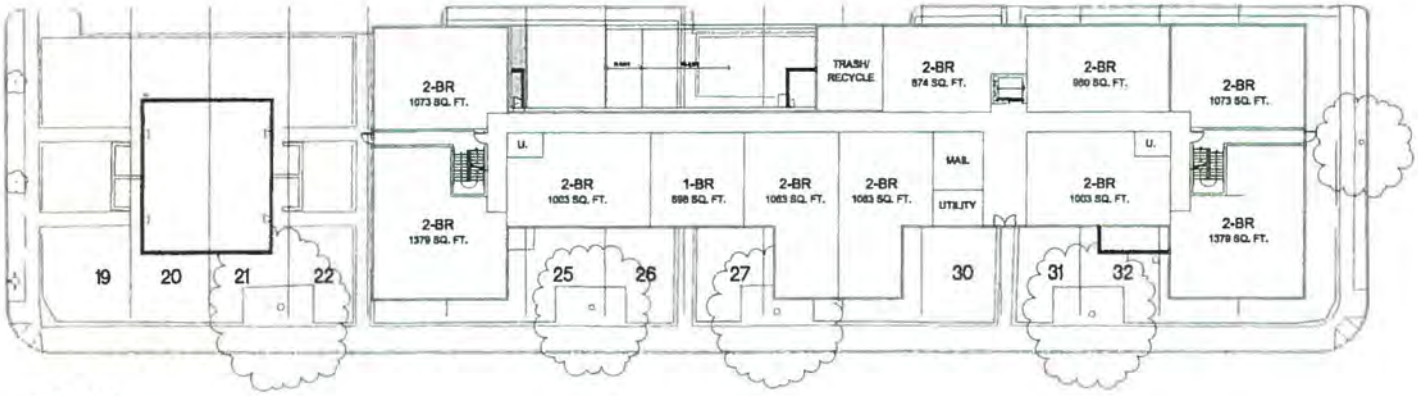
F. Projections for Financial Feasibility - 15 Year Projections of Cash Flow

	Stabilized Year 1	Year 2	Year 3	Year 4	Year 5
Eff. Gross Income	554,641	565,734	577,048	588,589	600,361
Less Oper. Expenses	252,625	265,256	278,519	292,445	307,067
Net Income	302,016	300,477	298,529	296,144	293,294
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	23,412	21,873	19,925	17,540	14,690
Debt Coverage Ratio	1.08	1.08	1.07	1.06	1.05

	Year 6	Year 7	Year 8	Year 9	Year 10
Eff. Gross Income	612,368	624,616	637,108	649,850	662,847
Less Oper. Expenses	322,421	338,542	355,469	373,242	391,904
Net Income	289,948	286,074	281,639	276,608	270,943
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	11,344	7,470	3,035	-1,996	-7,661
Debt Coverage Ratio	1.04	1.03	1.01	0.99	0.97

	Year 11	Year 12	Year 13	Year 14	Year 15
Eff. Gross Income	676,104	689,626	703,419	717,487	731,837
Less Oper. Expenses	411,500	432,074	453,678	476,362	500,180
Net Income	264,605	257,552	249,740	241,125	231,657
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	-13,999	-21,052	-28,864	-37,479	-46,947
Debt Coverage Ratio	0.95	0.92	0.90	0.87	0.83

Estimated Annual Percentage Increase in Revenue	2.00%	(Must be $\leq$ 2%)
Estimated Annual Percentage Increase in Expenses	5.00%	(Must be $\geq$ 3%)



FIRST FLOOR

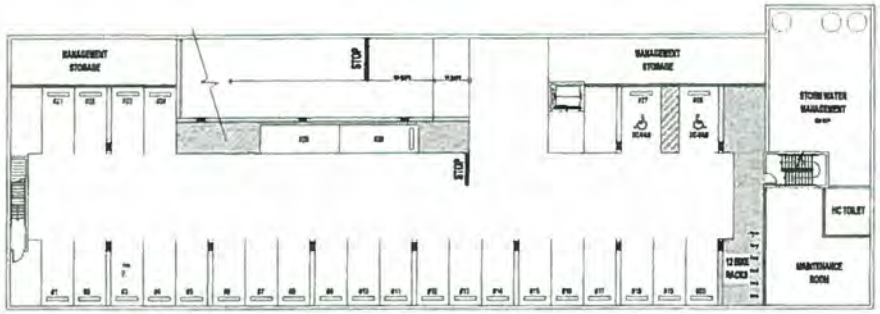
BUILDING SUMMARY
4-STORY WOOD FRAME, 5A STRUCTURES
w/ 1-STORY BELOW GRADE GARAGE, 1A STRUCTURE
BUILDING HEIGHT = 45'-8"

UNIT SUMMARY
1 BEDROOM = 9 UNITS
2 BEDROOM = 36 UNITS
3 BEDROOM = 4 UNITS
TOTAL UNITS = 49 UNITS

PARKING SUMMARY
PARKING REQUIRED (PER Z.O.) = 24 SPACES
- 60% AMI (25 UNITS x 0.5625 SP/UNIT) = 14 SPACES
- 50% AMI (10 UNITS x 0.4875 SP/UNIT) = 5 SPACES
- 30% AMI (14 UNITS x 0.3750 SP/UNIT) = 5 SPACES

PARKING PROVIDED (ON SITE) = 28 SPACES
- STANDARD SPACES = 26 SPACES
- ADA SPACES = 2 SPACES

TOTAL PARKING (ON STREET) = 5 SPACES



GARAGE FLOOR

SCALE: 1/16" = 1'-0"

RAMSEY HOMES

FLOOR PLANS

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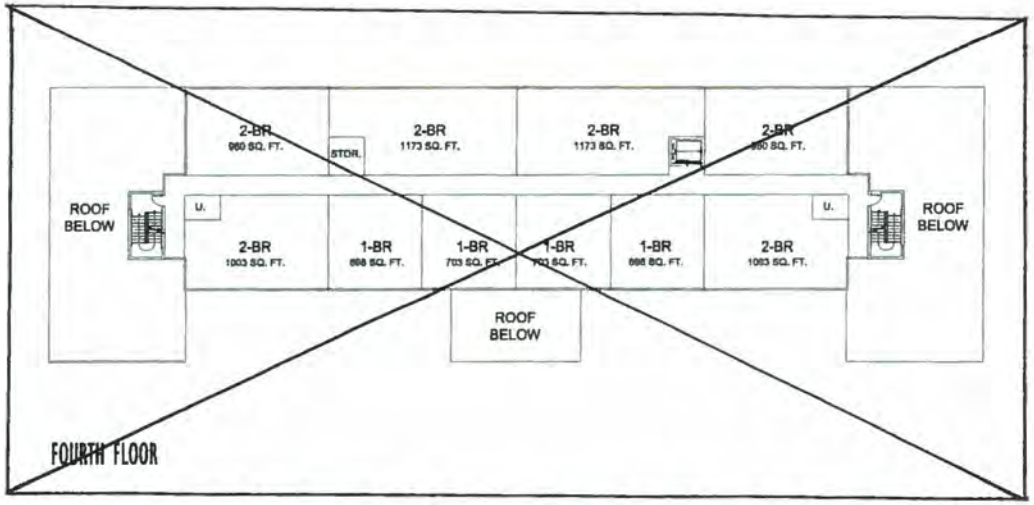

Eliminate fourth story for 39-unit new construction option

TYPICAL FLOOR (2ND/3RD)

SCALE: 1/16" = 1'-0"

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KTGY # 2314043 10.09.2015

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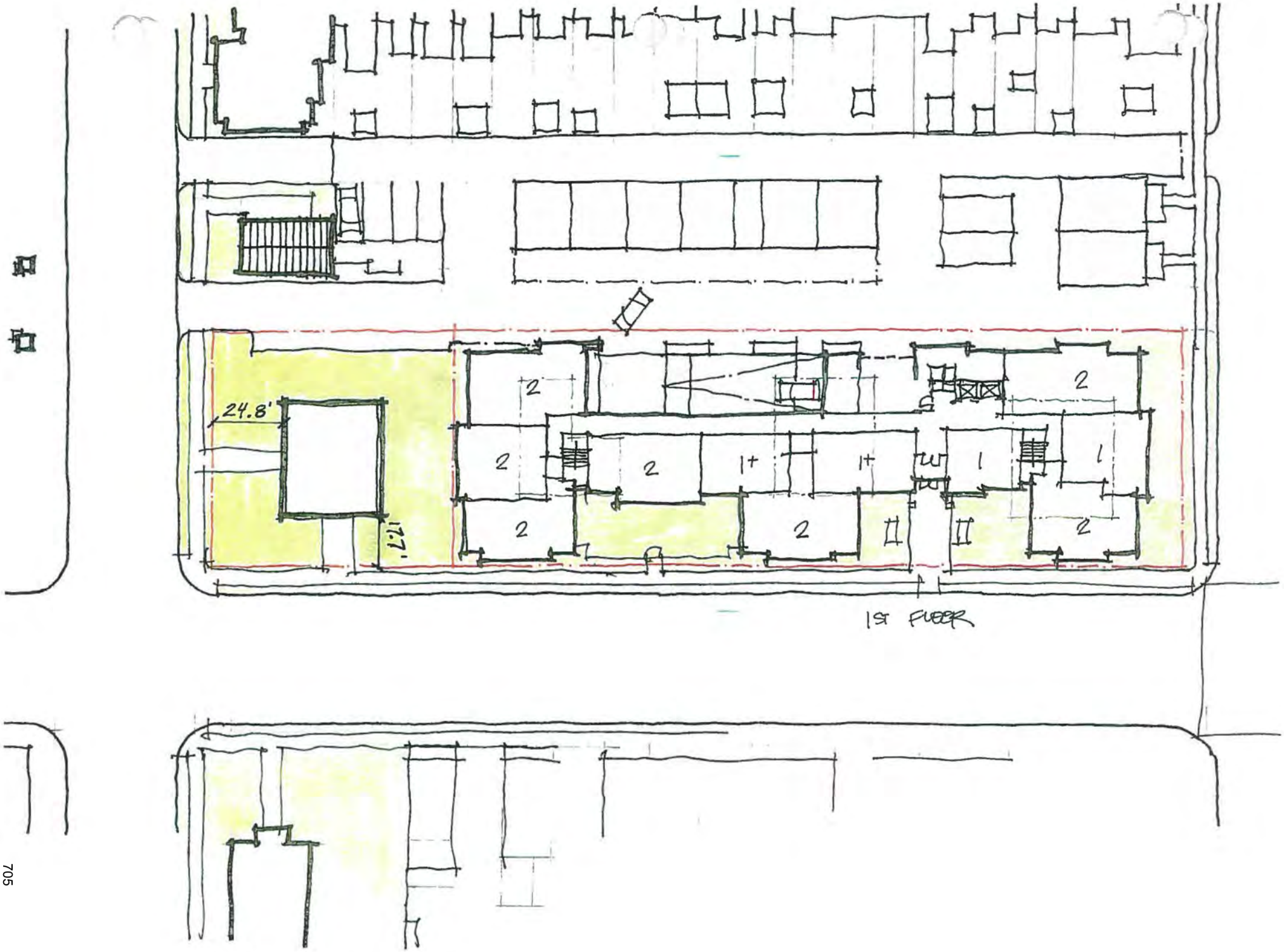
24.8'
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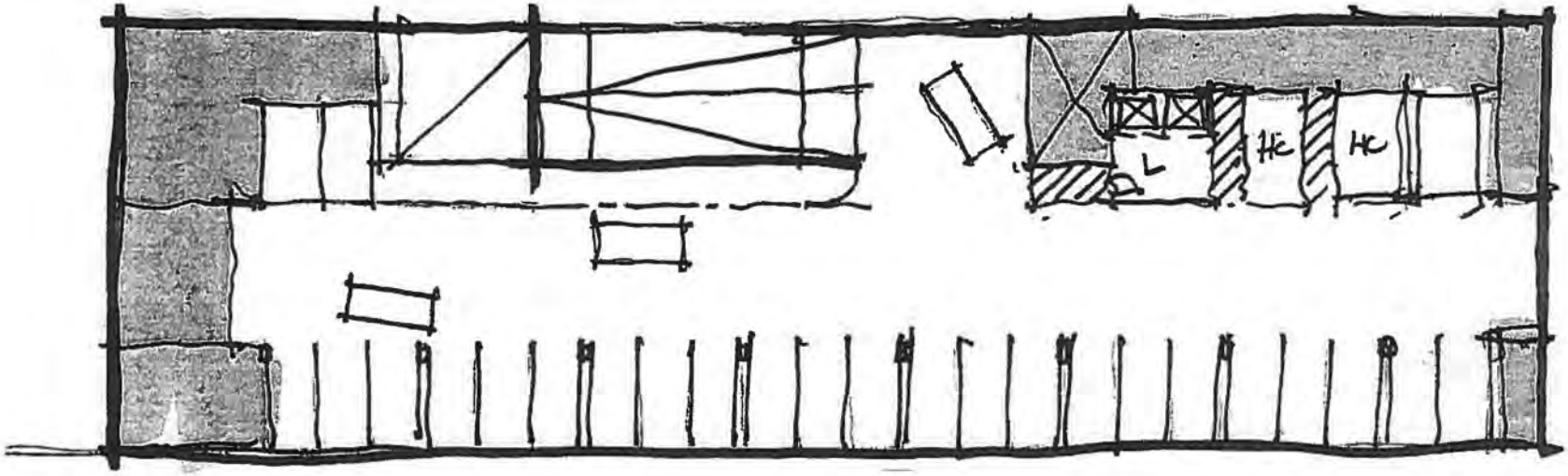
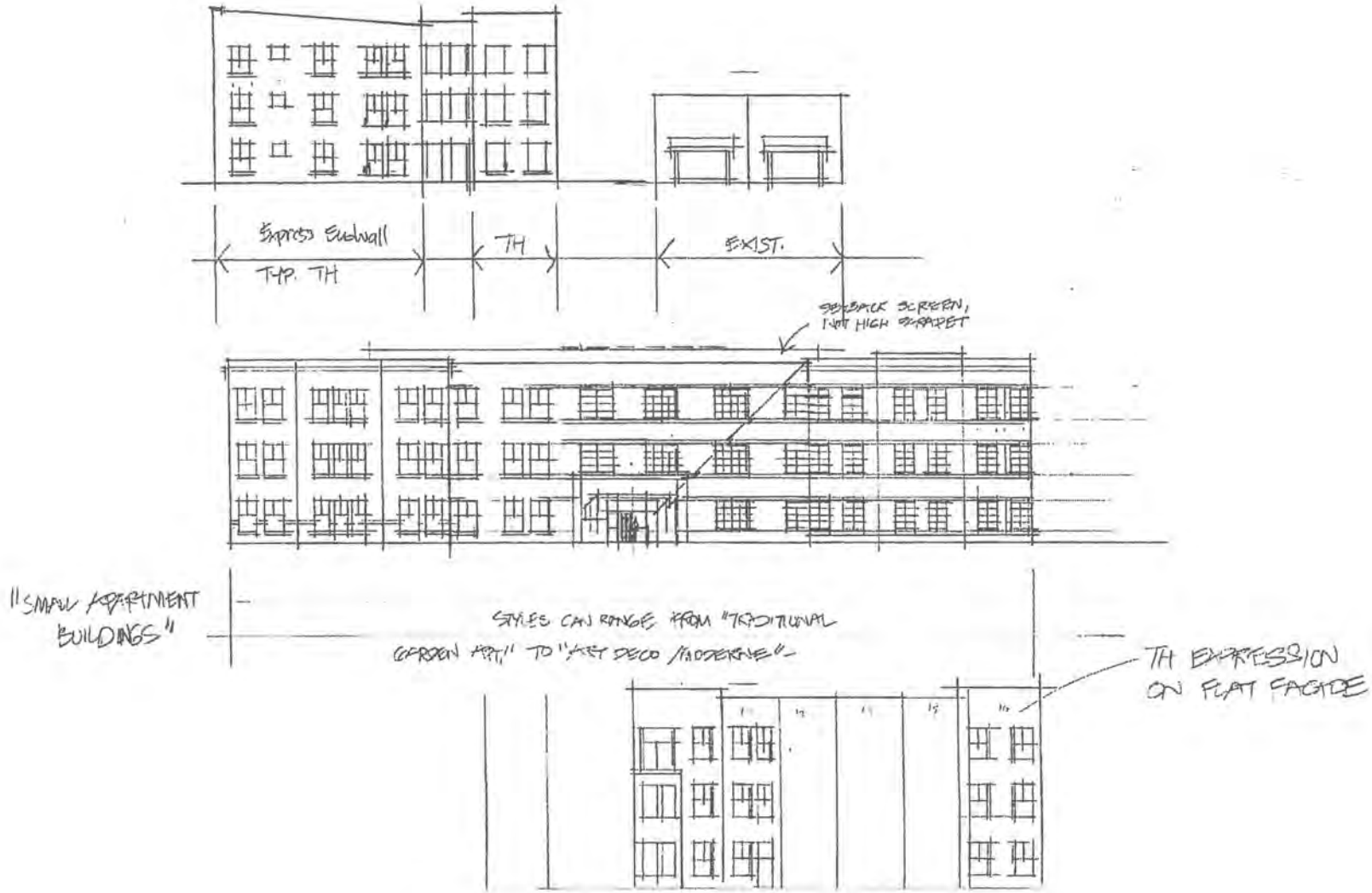
1ST FLOOR



GARAGE - REVERSED N<>S

MAY REQUIRE 2ND EGRESS.

1" = 20'-0"


Express Endwall
TYP. TH
TH
EXIST.
SETBACK SCREEN, 1½' HIGH PARAPET
"SMALL APARTMENT BUILDINGS"
STYLES CAN RANGE FROM "TRADITIONAL GARDEN APT." TO "ART DECO / MODERNE"
TH EXPRESSION ON FLAT FACADE

OPTION 5

REHABILITATE TWO BUILDINGS AND INFILL WITH 21 NEW CONSTRUCTION UNITS DRAWING ON THE BLAND TRI-PLEX DESIGN

E. Cash Flow (First Year)

1. Annual EGI Low-Income Units from (C1)		$374,552
2. Annual EGI Market Units (from C2)	+	$0
3. Total Effective Gross Income	=	$374,552
4. Total Expenses (from D)		$152,075
5. Net Operating Income	=	$222,477
6. Total Annual Debt Service (from Page 21 B2)	-	$278,604
7. Cash Flow Available for Distribution	=	($56,127)

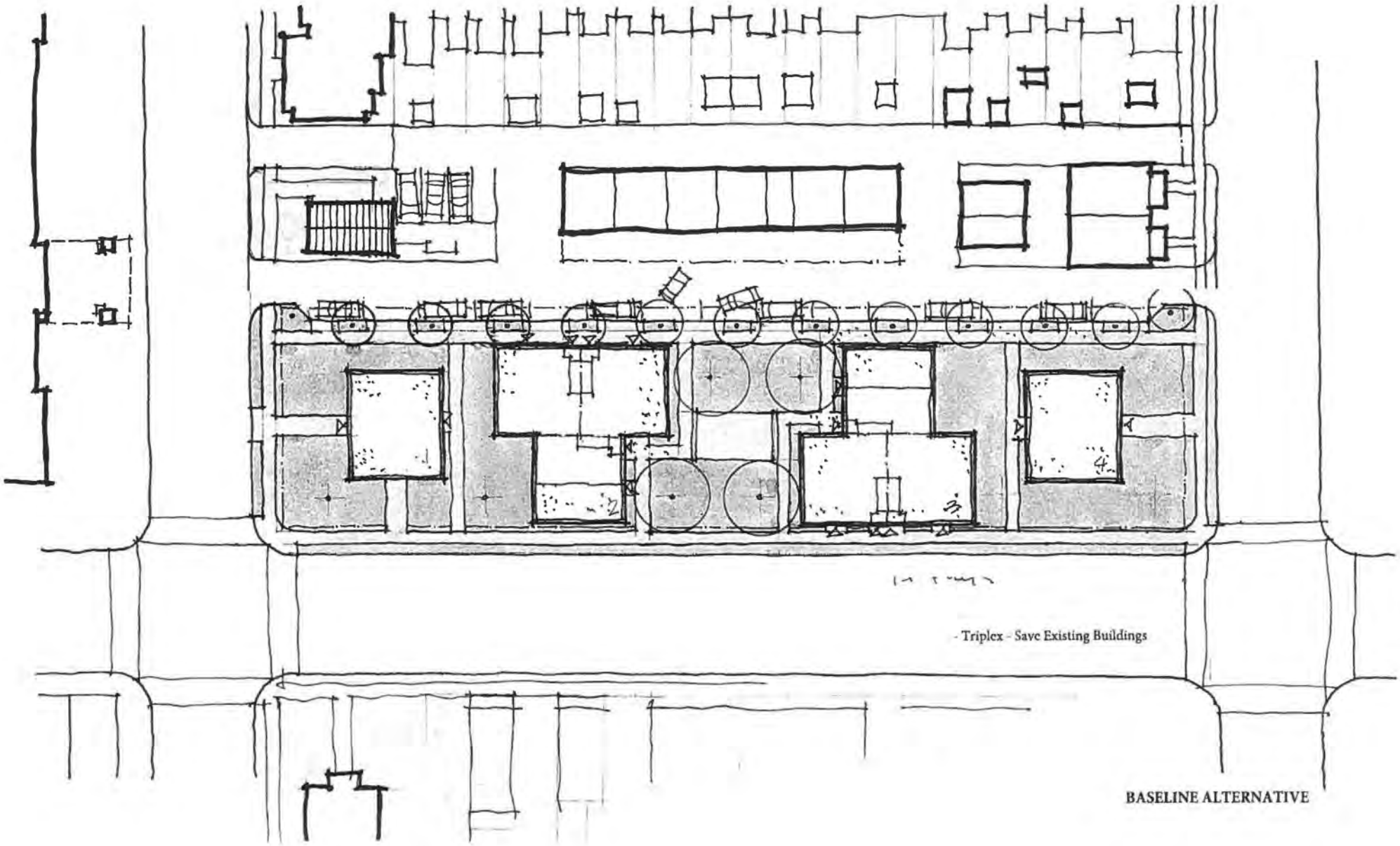
F. Projections for Financial Feasibility - 15 Year Projections of Cash Flow

	Stabilized Year 1	Year 2	Year 3	Year 4	Year 5
Eff. Gross Income	374,552	382,043	389,684	397,477	405,427
Less Oper. Expenses	152,075	159,679	167,663	176,046	184,848
Net Income	222,477	222,364	222,021	221,432	220,579
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	-56,127	-56,240	-56,583	-57,172	-58,025
Debt Coverage Ratio	0.80	0.80	0.80	0.79	0.79

	Year 6	Year 7	Year 8	Year 9	Year 10
Eff. Gross Income	413,536	421,806	430,242	438,847	447,624
Less Oper. Expenses	194,091	203,795	213,985	224,684	235,918
Net Income	219,445	218,011	216,258	214,163	211,706
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	-59,159	-60,593	-62,346	-64,441	-66,898
Debt Coverage Ratio	0.79	0.78	0.78	0.77	0.76

	Year 11	Year 12	Year 13	Year 14	Year 15
Eff. Gross Income	456,577	465,708	475,022	484,523	494,213
Less Oper. Expenses	247,714	260,100	273,105	286,760	301,098
Net Income	208,863	205,608	201,918	197,763	193,115
Less Debt Service	278,604	278,604	278,604	278,604	278,604
Cash Flow	-69,741	-72,996	-76,686	-80,841	-85,489
Debt Coverage Ratio	0.75	0.74	0.72	0.71	0.69

Estimated Annual Percentage Increase in Revenue	2.00%	(Must be $\leq$ 2%)
Estimated Annual Percentage Increase in Expenses	5.00%	(Must be $\geq$ 3%)

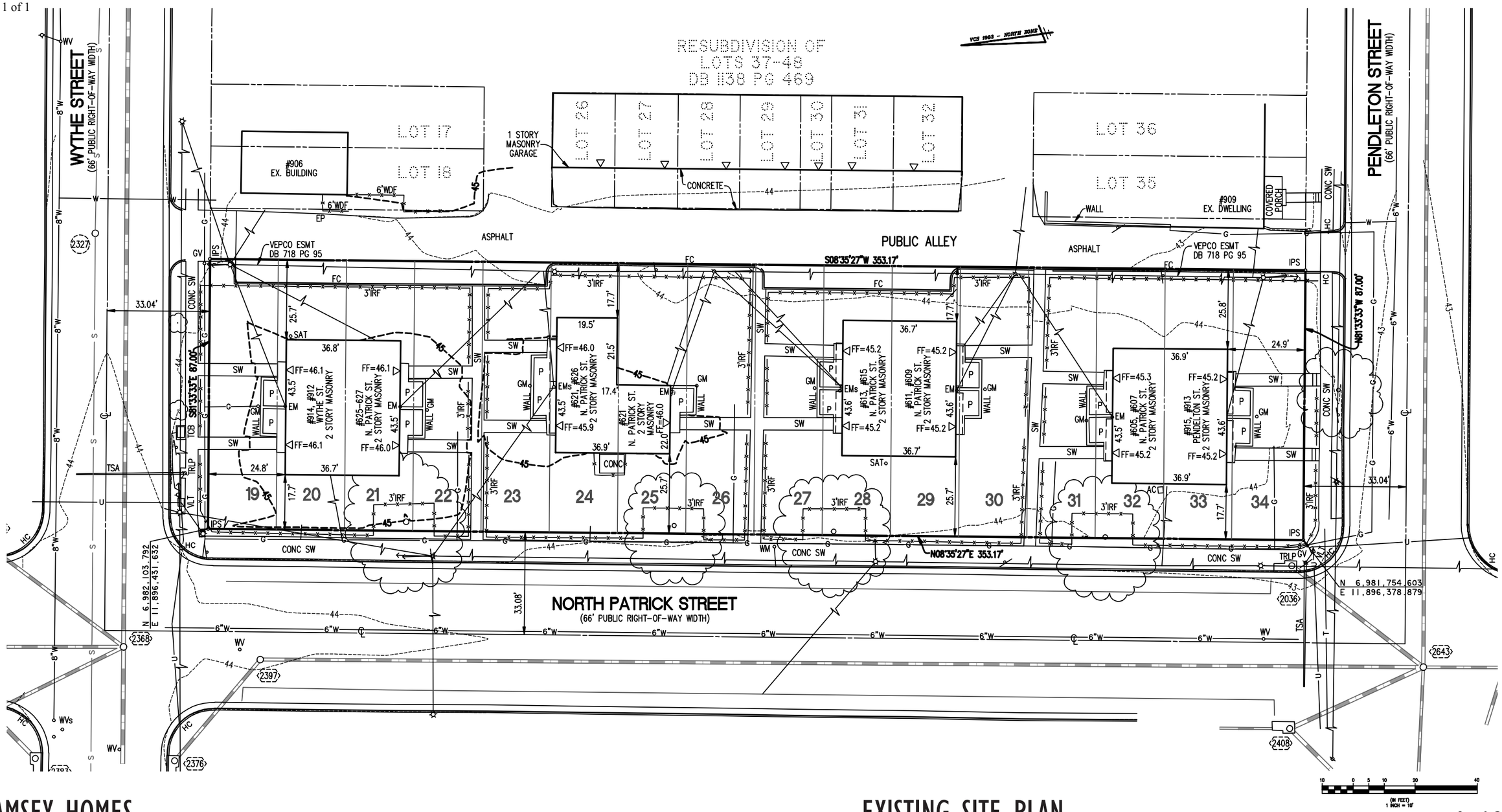


BASELINE ALTERNATIVE

ENCLOSURE 8

DHR Project No. 2015-0558

Existing Conditions Site Plan



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EXISTING SITE PLAN

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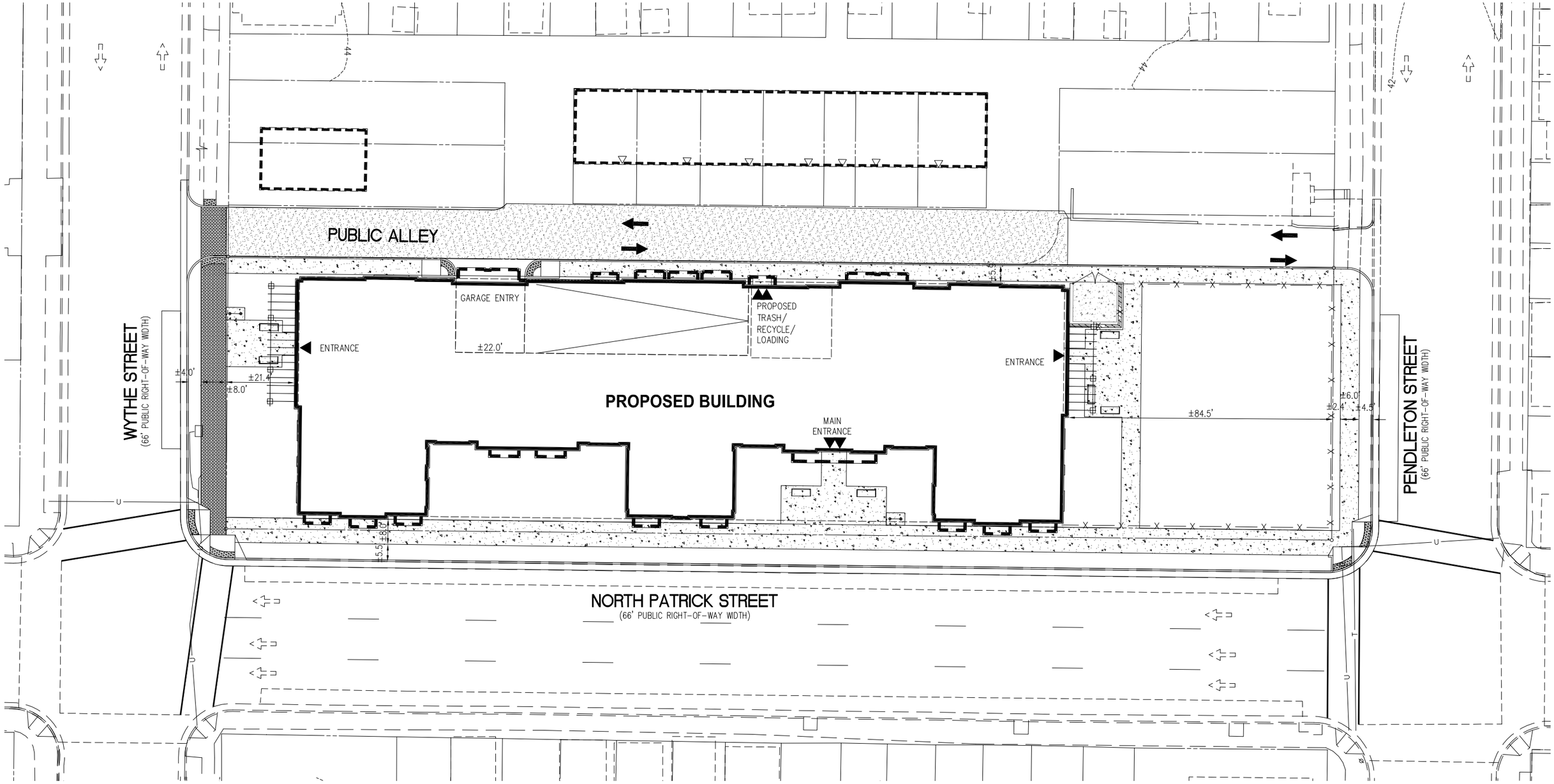
ENCLOSURE 9

DHR Project No. 2015-0558

Joint Work Group Preferred Concept Site Plans, Elevations, Perspectives, and Details



RAMSEY HOMES

PROPOSED CONCEPT PLAN

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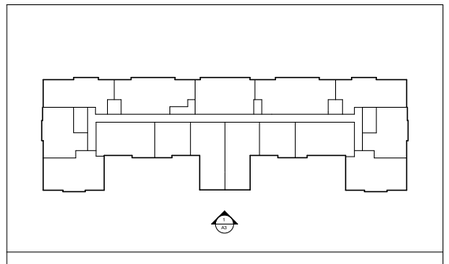
1
A3

NORTH PATRICK STREET ELEVATION

1/8" = 1'-0"



ELEVATION KEY PLAN

SCALE: 1/16" = 1' - 0"
0 8' 32' 16'

RAMSEY HOMES

PROPOSED ELEVATIONS

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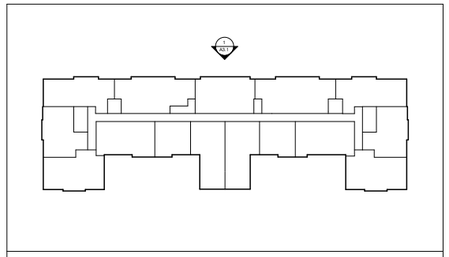
1 A4 PRIVATE STREET ELEVATION

1/8" = 1'-0"



ELEVATION KEY PLAN

SCALE: 1/16" = 1' - 0"

0 8' 32' 16'

RAMSEY HOMES

PROPOSED ELEVATIONS

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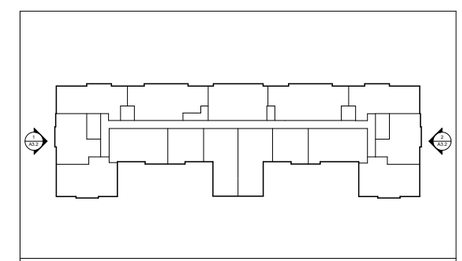
2 A5 PENDLETON STREET
1/8" = 1'-0"

1 A5 WYTHE STREET
1/8" = 1'-0"



ELEVATION KEY PLAN

SCALE: 1/16" = 1' - 0"
0 8' 32' 16'

RAMSEY HOMES

PROPOSED ELEVATIONS

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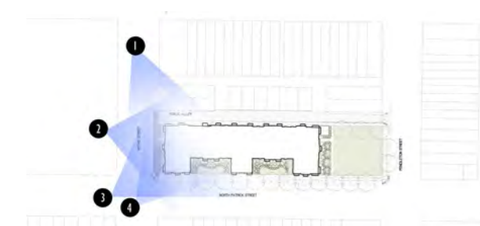
1 PERSPECTIVE - WYTHE STREET LOOKING WEST

3 PERSPECTIVE - WYTHE STREET LOOKING SOUTH

2 PERSPECTIVE - WYTHE STREET ENTRANCE

4 PERSPECTIVE - WYTHE STREET LOOKING EAST



RAMSEY HOMES

PERPSECTIVES

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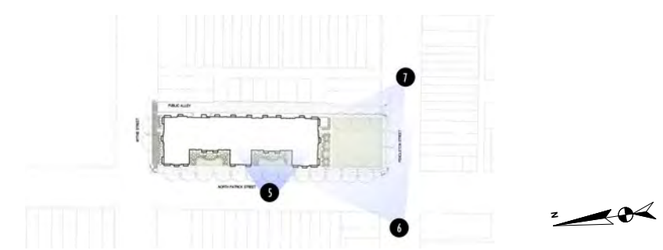
5 PERSPECTIVE - MAIN ENTRY

6 PERSPECTIVE - PENDLETON LOOKING EAST

7 PERSPECTIVE - PENDLETON LOOKING WEST



RAMSEY HOMES

PERPSECTIVES

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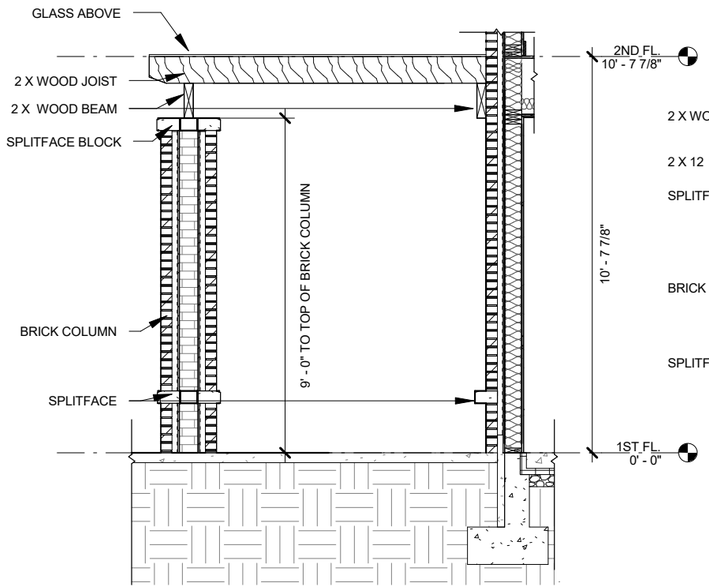
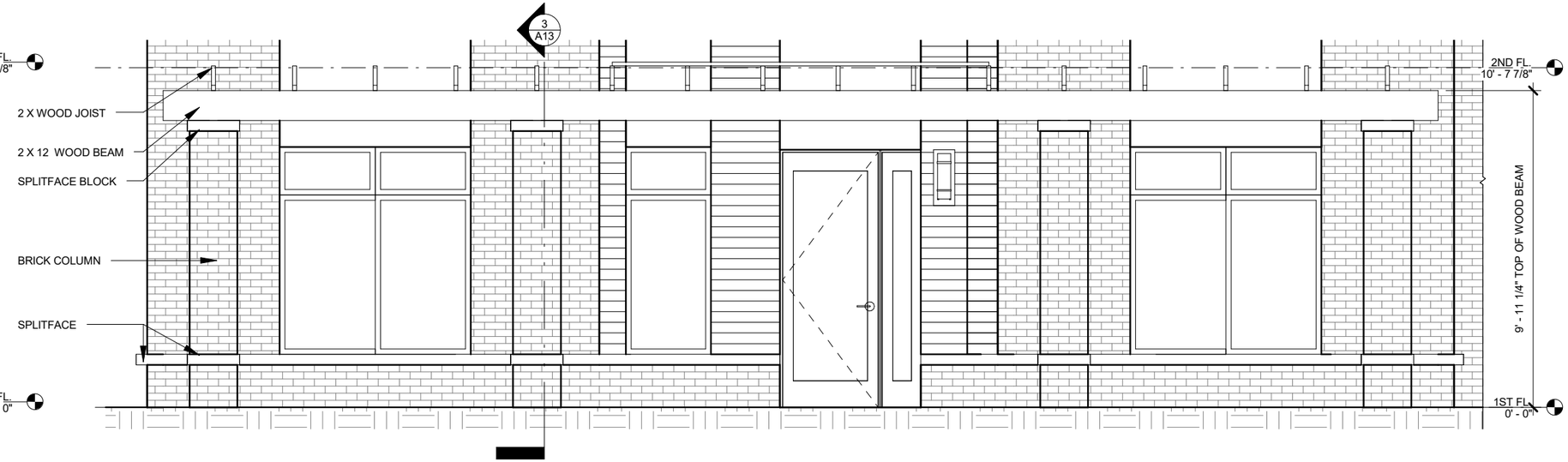


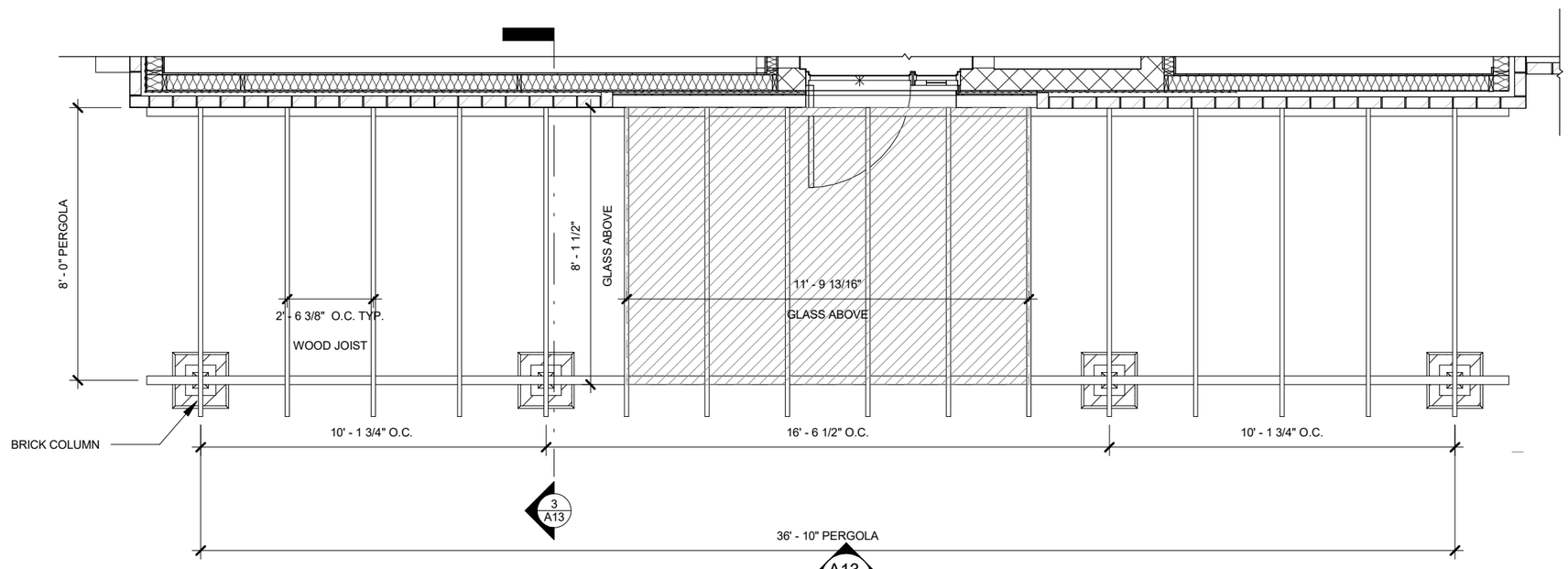
3 A13 PERGOLA
1/4" = 1'-0"

SECTION



2 A13 PERGOLA
1/4" = 1'-0"

ELEVATION



1 A13 PERGOLA
1/4" = 1'-0"

PLAN

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RAMSEY HOMES

PERGOLA DETAILS

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WALTER L. PHILLIPS
Engineers of record since 1945
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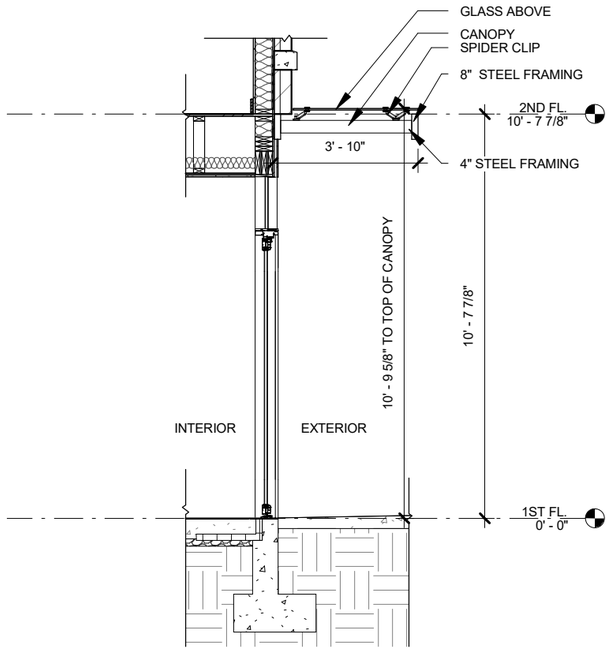
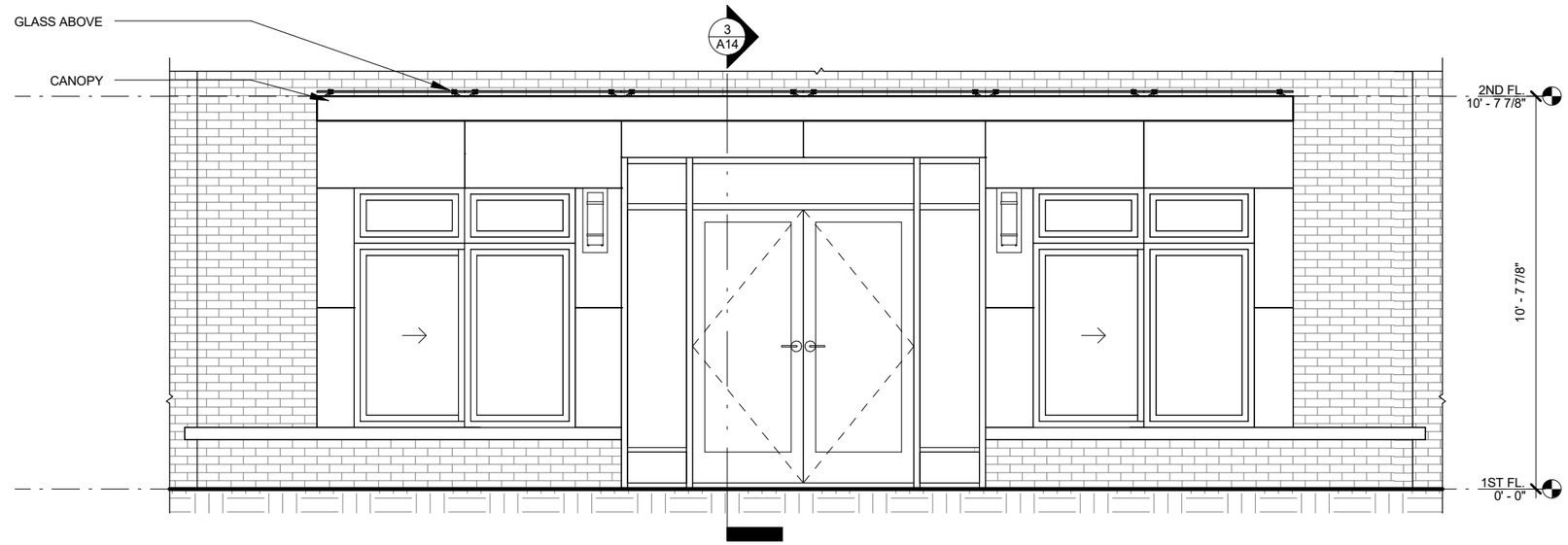
ATTORNEYS AT LAW, EST. 1978
Architecture+Planning
8605 Westwood Center Dr.
Suite 300
Vienna, VA 22182
703.992.6116
ktgy.com
ktgy



SECTION

3 / A14 MAIN ENTRY CANOPY

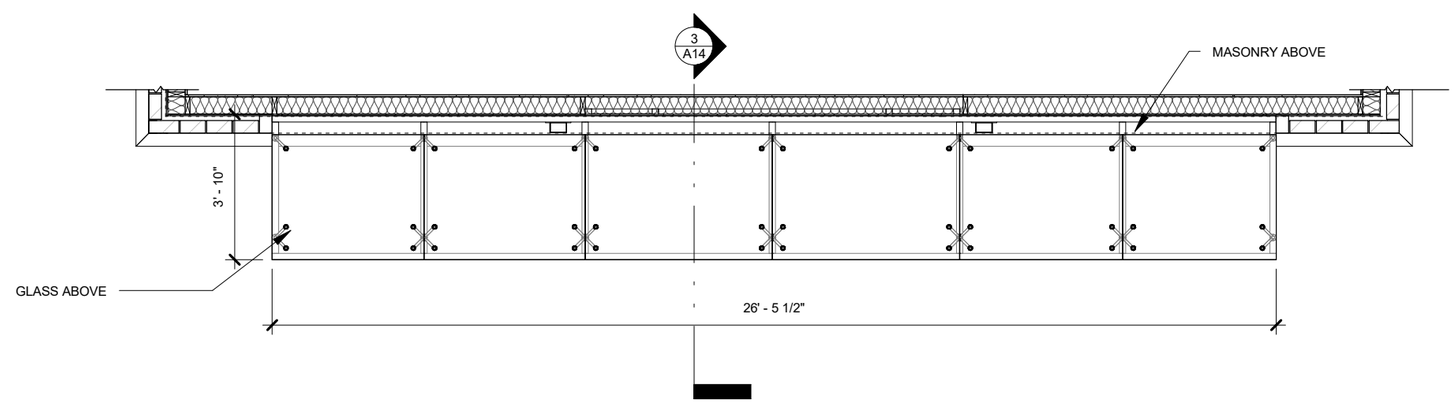
1/4" = 1'-0"



ELEVATION

1 / A14 MAIN ENTRY CANOPY.

1/4" = 1'-0"



2 / A14 MAIN ENTRY CANOPY

1/4" = 1'-0"

PLAN

Application & Materials
BAR2015-0029
699 N Patrick Street
8/30/2016

RAMSEY HOMES

MAIN ENTRY CANOPY DETAILS

ALEXANDRIA, VA
BOARD OF ARCHITECTURAL REVIEW
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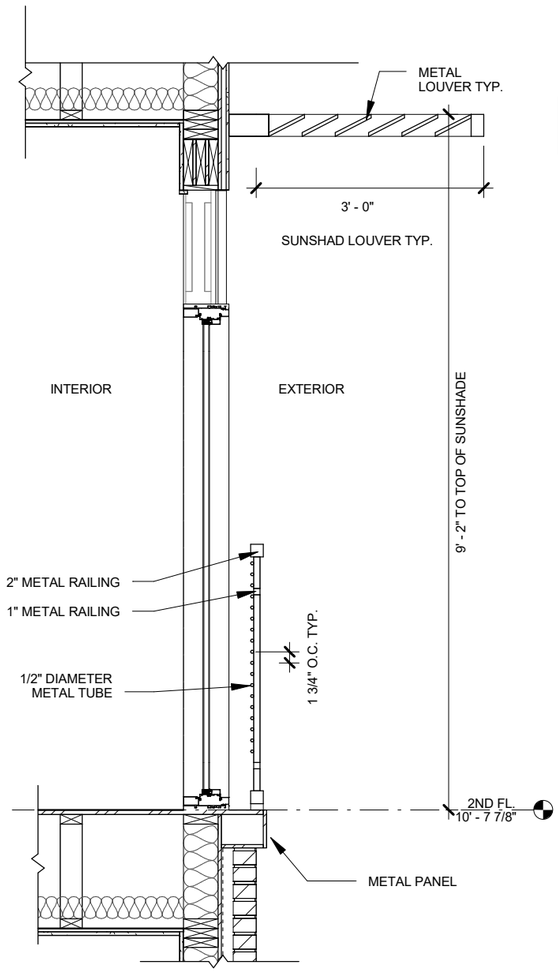
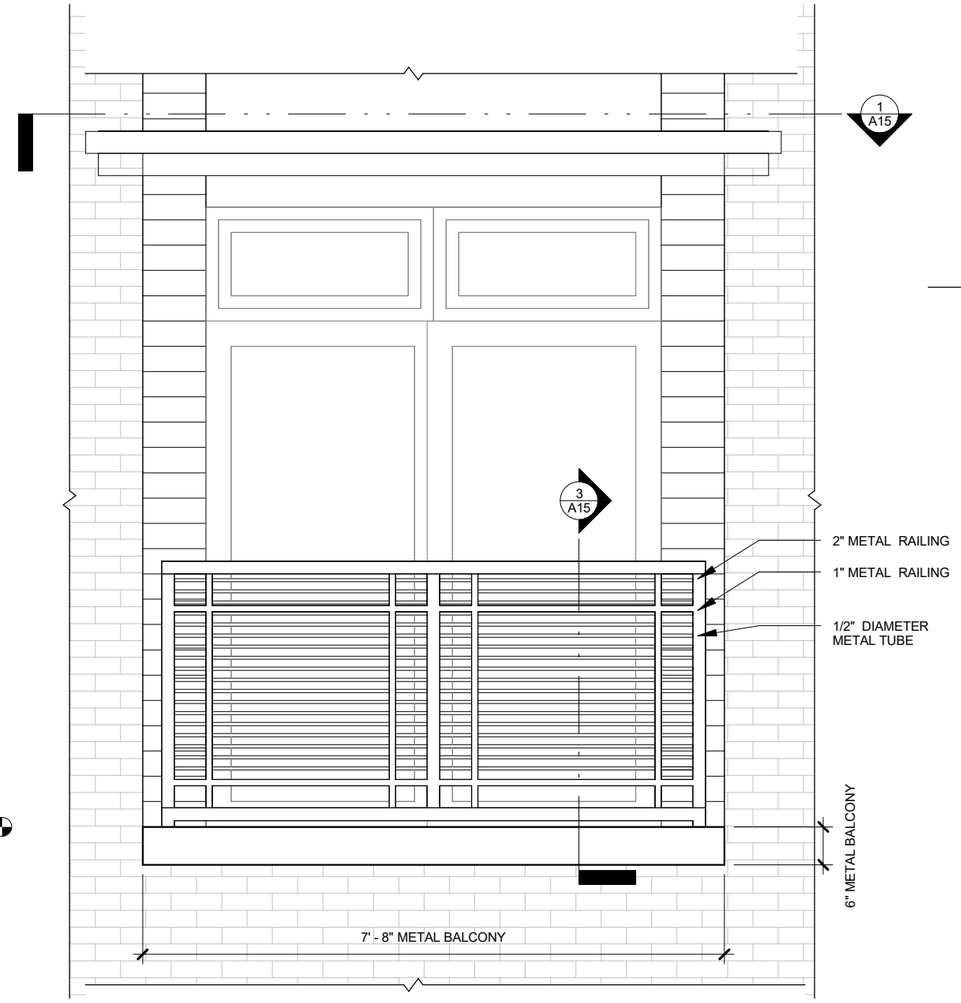
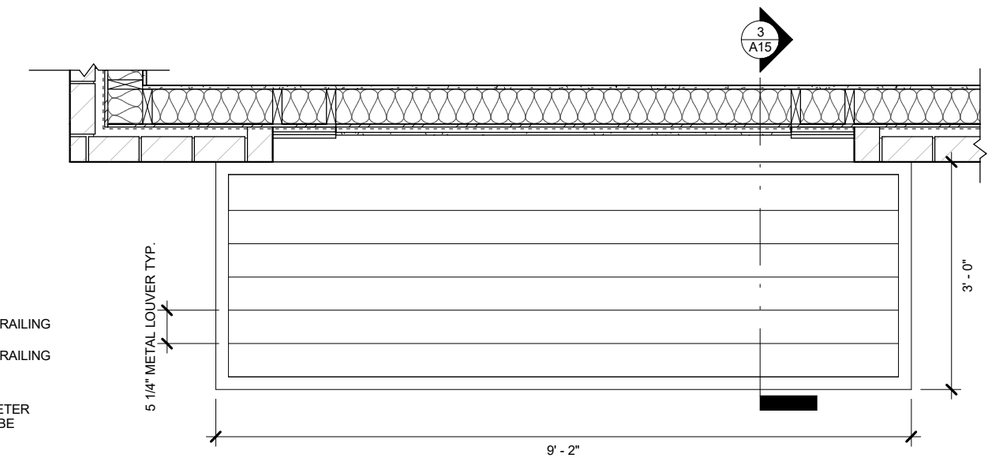
Application & Materials
BAR2015-0029
699 N Patrick Street
8/30/2016



3 A15 TYPICAL BALCONY
1/2" = 1'-0"
SECTION



2 A15 BALCONY RAILING - TYP.
1/2" = 1'-0"
ELEVATION



1 A15 SUNSHADE LOUVER - TYP.
1/2" = 1'-0"
PLAN

RAMSEY HOMES

BALCONY RAILING AND SUNSHADE DETAILS

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Name	Title	Organization	Address	Email	1st Attempt	Received & Signed	Consulting	2nd Attempt	Notes	Phone
Theresa del Ninno	Chair	Parker-Gray District Board of Architectural Review	2617 East Randolph Ave. Alexandria, VA 22310		3/18/2016	yes	unknown	n/a		
PAT O'CONNELL	TRANSITIONAL EXECUTIVE DIRECTOR	National Public Housing Museum	625 N KINGSBURY ST, CHICAGO, IL, 60654	POCONNELL@NPHM.ORG	3/18/2016	yes	unknown	n/a		
John M. Fowler	Executive Director	Advisory Council on Historic Preservation	401 F Street NW, Suite 308 Washington DC 20001-2637	jfowler@achp.gov	3/18/2016	yes	unknown	n/a		202-51
Michel Hicks	Principal Chief	Eastern Band of Cherokee Indians	P.O. Box 455, Cherokee, NC 28719	michhick@nc-cherokee.com	3/18/2016	yes	unknown	n/a		(828) 4
Russell Townsend	Tribal Historic Preservation Specialist	Eastern Band of Cherokee Indians	Qualla Boundary Reservation, P.O. Box 455, Cherokee, NC 28719	russtown@nc-cherokee.com	3/18/2016	yes	unknown	n/a		(828) 5
Mark Custalow	Chief	Mataponi Indian Tribe	122 Wee-A-Ya Lane, West Point , VA 23181	mcustalow@caservices.com	3/18/2016	yes	unknown	n/a		804-76
Robert Gray	Chief	Pamunkey Indian Nation	289 Pamumkey River Road, King William, VA 23086	rgray58@hughes.net	3/18/2016	yes	unknown	n/a		804-33
Leon Custalow	Secondary Contact	Mataponi Indian Tribe	1179 Mattaponi Reservation Circle, West Point, VA 23181	Mattaponitwofeathers@aol.com	3/18/2016	yes	unknown	n/a		804-76
Margaret Douglass		Ramsey Homes	615 N. Patrick St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Latonya Flynn		Ramsey Homes	914 Wythe St. Alexandria, VA 22314		3/18/2016	3/29/2016	unknown	n/a		
Linda Harris		Ramsey Homes	611 N. Patrick St. Alexandria, VA 22314		3/18/2016	Unclaimed	unknown	5/2/2016		
Teresa Jackson		Ramsey Homes	623 N. Patrick St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Rafaela Lara		Ramsey Homes	609 N. Patrick St. Alexandria, VA 22314		3/18/2016	Unclaimed	unknown	5/2/2016		
Mary Lewis		Ramsey Homes	913 Pendleton St. Alexandria, VA 22314		3/18/2016	unknown	unknown	5/2/2016		
Sylvia Lloyd		Ramsey Homes	915 Pendleton St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Marion Mealing		Ramsey Homes	625 N. Patrick St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Schemelia Parrish		Ramsey Homes	607 N. Patrick St. Alexandria, VA 22314		3/18/2016	Unclaimed	unknown	5/2/2016		
Elsie Pulliam		Ramsey Homes	613 N. Patrick St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Wanda Thrash		Ramsey Homes	627 N. Patrick St. Alexandria, VA 22314		3/18/2016	Unclaimed	unknown	5/2/2016		
Shanina Todd		Ramsey Homes	621 N. Patrick St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Bonita Valentine		Ramsey Homes	605 N. Patrick St. Alexandria, VA 22314		3/18/2016	yes	unknown	n/a		
Charkenia Walker		Ramsey Homes	619 N. Patrick St. Alexandria, VA 22314		3/18/2016	Unclaimed	unknown	5/2/2016		
Christina Winfield		Ramsey Homes	912 Wythe St. Alexandria, VA 22314		3/18/2016	Unclaimed	unknown	5/2/2016		

SARA F POINDEXTER CHARLETTE AND ROBERT W POINDEXTER	ADJACENT PROPERTY OWNER		912 PENDLETON ST ALEXANDRIA VA 22314	912 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	4/1/2016	unknown	n/a	064.02-01-08
NINETTE I SADUSKY	ADJACENT PROPERTY OWNER		PO BOX 416 ALEXANDRIA VA 22313	910 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	3/28/2016	YES	n/a	064.02-01-09
MEREDITH JOY OR NATHANIEL DAVID GEORGE	ADJACENT PROPERTY OWNER		908 PENDLETON STREET ALEXANDRIA VA 22314	908 PENDLETON STREET ALEXANDRIA VA 22314	3/18/2016	4/12/2016	YES	n/a	064.02-01-10
LARA B ANDRE	ADJACENT PROPERTY OWNER		906 PENDLETON STREET ALEXANDRIA VA 22314	906 PENDLETON STREET ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown		064.02-01-40
JENNIFER R ALLS OR JASON C TONGARM	ADJACENT PROPERTY OWNER		15027 BRADDOCK RD CENTREVILLE VA 20120	904 1/2 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	064.02-01-11
JAMES J SNARE	ADJACENT PROPERTY OWNER		904 PENDLETON STALEXANDRIA VA 22314	904 PENDLETON STALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown		064.02-01-41
SANDY N KILADA	ADJACENT PROPERTY OWNER		8702 LINTON LN ALEXANDRIA VA 22308	902 1/2 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	064.02-01-42
MICHELLE HAYNES	ADJACENT PROPERTY OWNER		902 PENDLETON ST ALEXANDRIA VA 22314	902 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	064.02-01-12
JAMES D WALSH JR OR ELSIE M MOSQUEDA	ADJACENT PROPERTY OWNER		900 PENDLETON ST ALEXANDRIA VA 22314	900 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	064.02-01-13
MYKHAYLO PANARIN	ADJACENT PROPERTY OWNER		909 PENDLETON ST ALEXANDRIA VA 22314	909 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown		054.04-12-25
DAVID B LAWRENCE OR DENISE M SINGLEY	ADJACENT PROPERTY OWNER		907 PENDLETON ST ALEXANDRIA VA 22314	907 PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	054.04-12-24
MARK ALAN MUELLER JR	ADJACENT PROPERTY OWNER		414 S ROYAL ST ALEXANDRIA VA 22314	911 A PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	054.04-12-26
	ADJACENT PROPERTY OWNER	LOCAL IT LLC	327 E MASON AVENUE ALEXANDRIA VA 22301	911 B, C, and D PENDLETON ST ALEXANDRIA VA 22314	3/18/2016	3/22/2016	unknown		054.04-12-27
	ADJACENT PROPERTY OWNER	THELITTLE THEATRE OF ALEXANDRIA	600 WOLFE ST ALEXANDRIA VA 22314	911 E, F, and G PENDLETON ST ALEXANDRIA VA 22314	3/18/2016		unknown	n/a	054.04-12-30
	ADJACENT PROPERTY OWNER	CITY OF ALEXANDRIA	PO BOX 178 ALEXANDRIA VA 22313	902 and 906 WYTHE ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	n/a	054.04-12-02
MARK R OR MARNEDA M MILHISER	ADJACENT PROPERTY OWNER		636 N ALFRED ST ALEXANDRIA VA 22314	636 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown		054.04-12-04
DEAN J FAJERSKI	ADJACENT PROPERTY OWNER		634 N ALFRED ST ALEXANDRIA VA 22314		3/18/2016	4/1/2016	unknown		054.04-12-05
PATRICIA A MOORE	ADJACENT PROPERTY OWNER		632 N ALFRED ST ALEXANDRIA VA 22314	632 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown		054.04-12-06
SCOTT BRADFORD WEAVER	ADJACENT PROPERTY OWNER		630 N ALFRED ST ALEXANDRIA VA 22314	630 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Returned	unknown		054.04-12-07
CYNTHIA HARMAN	ADJACENT PROPERTY OWNER		516 W QUEEN LN APT 1 PHILADELPHIA PA 191444096	628 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016		unknown		054.04-12-08
BERTELL E OR PRIMROSE E KNOX	ADJACENT PROPERTY OWNER		3419 20TH ST NE WASHINGTON DC 200182725	626 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Returned	unknown		054.04-12-0
ZACHARY R BAILEY OR KATIE L JACOBS	ADJACENT PROPERTY OWNER		624 N ALFRED ST ALEXANDRIA VA 22314	624 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Returned	unknown		054.04-12-10
SCOTT WEAVER	ADJACENT PROPERTY OWNER		622 1/2 N ALFRED ST ALEXANDRIA VA 22314	622 1/2 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown		054.04-12-11

HOWARD F DISHMAN SR	ADJACENT PROPERTY OWNER	315 N PATRICK ST ALEXANDRIA VA 22314	622 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	3/22/2016	unknown	054.04-12-12
BRANDON DALE SWEET	ADJACENT PROPERTY OWNER	618 N ALFRED ST ALEXANDRIA VA 22314	618 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown	054.04-12-14
JOSEPH OR SUSIE L SMITH	ADJACENT PROPERTY OWNER	4548 LANTERN PL ALEXANDRIA VA 22306	616 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	3/22/2016	unknown	054.04-12-15
GAYLA B GORDON TR OR RICHARD GORDON TR	ADJACENT PROPERTY OWNER	8604 WEST BOULEVARD DR ALEXANDRIA VA 22308	614 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	054.04-12-16
CHRISTINE M OR DENNIS L MALLOY	ADJACENT PROPERTY OWNER	612 N ALFRED ST ALEXANDRIA VA 22314	612 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown	054.04-12-17
KRISTEN A NESPOLI	ADJACENT PROPERTY OWNER	610 N ALFRED ST ALEXANDRIA VA 22314	610 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown	054.04-12-18
ALISON C BRODY	ADJACENT PROPERTY OWNER	608 N ALFRED ST ALEXANDRIA VA 22314	608 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	054.04-12-19
MICHAEL HEANEY	ADJACENT PROPERTY OWNER	606 N ALFRED ST ALEXANDRIA VA 22314	606 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	yes	unknown	054.04-12-20
SUZANNE M SHUTTY	ADJACENT PROPERTY OWNER	604 N ALFRED ST ALEXANDRIA VA 22314	604 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown	054.04-12-21
MELVYN A WILLIAMS	ADJACENT PROPERTY OWNER	3529 COURTLAND DR FALLS CHURCH VA 22041	602 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	3/28/2016	unknown	054.04-12-22
DAVID J SPRENGER	ADJACENT PROPERTY OWNER	600 N ALFRED ST ALEXANDRIA VA 22314	600 N ALFRED ST ALEXANDRIA VA 22314	3/18/2016	Unclaimed	unknown	054.04-12-23

TAB 12

NOISE ABATEMENT AND CONTROL

ARHA
BUILDING COMMUNITY PARTNERSHIPS

ALEXANDRIA REDEVELOPMENT AND HOUSING AUTHORITY

Roy O. Priest, *Chief Executive Officer*

March 31, 2017

Tell CSX Service Center

Re: Request for Railway Traffic Information

Dear Sir/Madam:

The Alexandria Redevelopment and Housing Authority (ARHA), owns operates, and manages affordable housing development funded, in part, through annual contributions contracts through the U.S. Department of Housing and Urban Development (HUD). ARHA seeks to demolish an existing 15 unit multi-family housing complex located within four buildings and construct new, 52 units of multi-family housing on a .71 acre site situated in Alexandria VA and bounded by Wythe, Pendleton, and N. Patrick Streets.

Under Chapter 24 CFR, Part 51.103, a noise assessment must be conducted to determine the interior and exterior noise levels for each proposed project utilizing the following funds: tax credits, replacement Housing Factor Funds, a seller's note, and surplus proceeds from the redevelopment of another public housing site.

In order to complete the noise assessments, ARHA needs to obtain information concerning the railway traffic on the CSX owned tracks in the vicinity of 699 North Patrick Street, Alexandria, VA. Rail lines nearest to the property appear to be those tracks running South of Potomac Yards parallel to the Metrorail line between the Braddock and King Street Stations. The subject site is approximately 5 blocks east from the Braddock Road Metrorail Station. In order to meet the requirements for an Environmental Review, we request your assistance in providing responses to the following questions:

Electric Trains

Do Electric trains use this track?
What is the average train speed or the railway speed limit on this section of track for electric trains?
What is the average number of electric locomotives per train?
What is the average number of railway cars per electric train?
What is the total yearly railway traffic volume for electric trains in both directions?
What is the night percentage (10 p.m. to 7 a.m.) of electric train operations on this section of track?
Do the trains sound whistles or horns in this location?
Are these tracks bolted or welded?

Diesel Trains

Do diesel trains use this track?
What is the average train speed or the railway speed limit on this section of track for diesel trains?

401 Wythe Street • Alexandria, VA 22314 • Office: (703) 549-7115 • Fax: (703) 838-2825

An Equal Opportunity Employer
Equal Housing Opportunity

What is the average number of diesel locomotives per train?
What is the average number of railway cars per diesel train?
What is the total yearly railway traffic volume for diesel trains in both directions?
What is the night percentage (10 p.m. to 7 a.m.) of diesel train operations on this section of track?
Do the trains sound whistles or horns in this location?
Are these tracks bolted or welded?

In compliance with the applicable federal regulations, your responses will be included in our Environmental Review Records. Should you have any questions, please contact me at (703) 749-7115 extension 150 or by email at lbattle@arha.us or Connie Staudinger at cstaudinger@arha.us. Thank you for your cooperation and assistance.

Sincerely,

Leroy W. Battle, AICP, CCIM
Project Manager

Cc: Connie Staudinger, COO

Leroy Battle

From: TellCSX Service Center (imailagent) <TellCSXWebServiceIQ@csx.com>
Sent: Thursday, April 13, 2017 9:51 AM
To: Leroy Battle
Subject: Thank you for Contacting TellCSX (Intranet Quorum IMA00142839)
Attachments: IQFormatFile.txt

1-877-TellCSX
TellCSX@csx.com
www.csx.com/ContactUs

Dear Mr. Battle:

In response to your inquiries about CSXT train traffic in the vicinity of Braddock Road, we have provided the following information:

- An average of 62 trains per day pass through the area on the CSXT line in Alexandria, VA. Train count is subject to change depending on customer demand.
- Trains operate 24 hours a day, seven days a week, 365 days a year.
- About half operate during day light hours and about half operate after 10:00 p.m.
- The trains have diesel locomotive engines with approximately 2 locomotives per train.
- Car count per train can vary widely; generally trains have between 40 and 100 cars.
- The track is welded.
- The maximum track speed is approximately 65 MPH for freight trains.
- According to the Federal Railroad Administration's Train Horn Rule, enacted June 24, 2005, all crossings require four whistles, 2 long, 1 short, and 1 long. Train horns must be between 96 and 110 decibels as prescribed by the FRA. Please visit the FRA's web site for more rules on train horns at www.fra.dot.gov and click on the "Train Horn Rule" link.

Thank you for contacting CSX.

Sincerely,

TellCSX Team

KB

Ref: 899334

When responding to this email, please do not change the subject line.

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DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the **Day/Night Noise Level Calculator Electronic Assessment Tool Overview (/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/)**.

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID	Ramsey Homes - 699 N. Patrick Street, Alexandria, VA 22314
Record Date	5-4-2017
User's Name	LBattle

Road # 1 Name:	**N. Patrick Street**

Road #1

Vehicle Type	**Cars** ☑	**Medium Trucks** ☑	**Heavy Trucks** ☑
Effective Distance	31	31	31
Distance to Stop Sign	35	35	35
Average Speed	25	25	25
Average Daily Trips (ADT)	23000	450	20
Night Fraction of ADT	15	7	7
Road Gradient (%)			1
Vehicle DNL	63.1	51.3	61.4
Calculate Road #1 DNL	65.5	Reset	

Road # 2 Name:	**N. Washington**

Road #2

Vehicle Type	**Cars** ☑	**Medium Trucks** ☐	**Heavy Trucks** ☐

Effective Distance	371		
Distance to Stop Sign	300		
Average Speed	25		
Average Daily Trips (ADT)	32000		
Night Fraction of ADT	15		
Road Gradient (%)			
Vehicle DNL	45.2		
Calculate Road #2 DNL	45.2	Reset	

Road # 3 Name: **N. Henry Street**

Road #3

Vehicle Type	**Cars** ☑	**Medium Trucks** ☑	**Heavy Trucks** ☑
Effective Distance	371	371	371
Distance to Stop Sign	346	346	346
Average Speed	25	25	25
Average Daily Trips (ADT)	21000	260	50
Night Fraction of ADT	15	7	7
Road Gradient (%)			2
Vehicle DNL	49.5	38.8	49.6
Calculate Road #3 DNL	52.7	Reset	

Road # 4 Name:

Road #4

Vehicle Type	**Cars** ☐	**Medium Trucks** ☐	**Heavy Trucks** ☐
Effective Distance			
Distance to Stop Sign			
Average Speed			
Average Daily Trips (ADT)			
Night Fraction of ADT			
Road Gradient (%)			
Vehicle DNL			
Calculate Road #4 DNL		Reset	

Railroad #1 Track Identifier: **CSX Railway**

Rail # 1

Train Type	**Electric** ☐	**Diesel** ☑
Effective Distance		1742
Average Train Speed		65
Engines per Train		1
Railway cars per Train		62
Average Train Operations (ATO)		1
Night Fraction of ATO		1

Railway whistles or horns?	Yes: ☐ No: ☐	Yes: ☑ No: ☐
Bolted Tracks?	Yes: ☐ No: ☐	Yes: ☑ No: ☐
Train DNL		38
Calculate Rail #1 DNL	38	Reset

Add Road Source | Add Rail Source

Airport Noise Level	57.1
Loud Impulse Sounds?	○ **Yes** ◉ **No**

Combined DNL for all Road and Rail sources	**38**
Combined DNL including Airport	**57.1**
Site DNL with Loud Impulse Sound	

Calculate

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

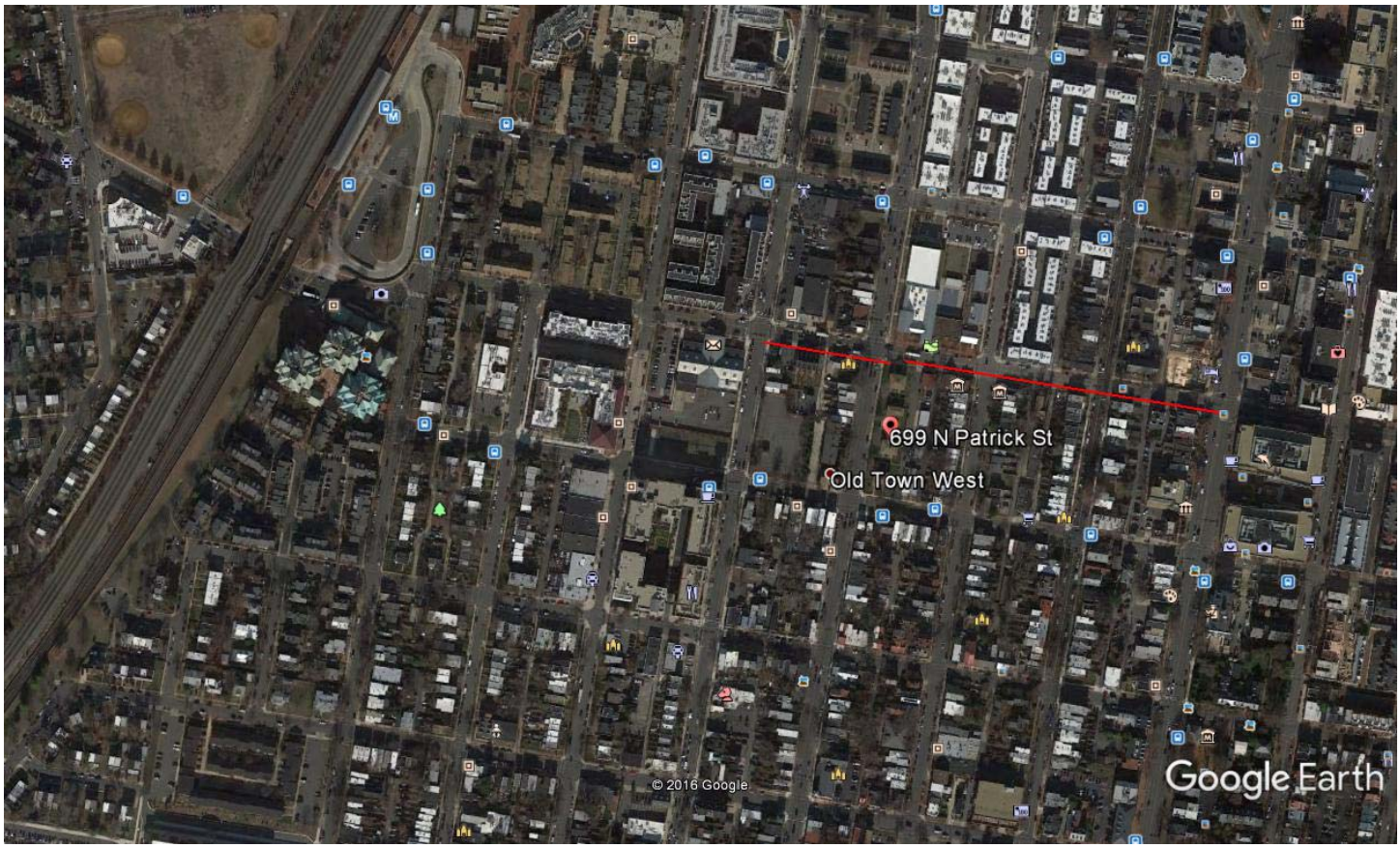
- **No Action Alternative**: Cancel the project at this location
- **Other Reasonable Alternatives**: Choose an alternate site
- **Mitigation**
  - **Contact your Field or Regional Environmental Officer (/programs/environmental-review/hud-environmental-staff-contacts/)**
  - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)

noise-sensitive uses
- Incorporate natural or man-made barriers. See ***The Noise Guidebook (/resource/313/hud-noise-guidebook/)***
- Construct noise barrier. See the **Barrier Performance Module (/programs/environmental-review/bpm-calculator/)**

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (/resource/3822/day-night-noise-level-assessment-tool-user-guide/)

Day/Night Noise Level Assessment Tool Flowcharts (/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)



Google Earth

feet 1000

meters 600

TAB 13

SOLE SOURCE AQUIFERS

Sole Source Aquifers (CEST and EA)

General requirements	Legislation	Regulation
The Safe Drinking Water Act of 1974 protects drinking water systems which are the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.	Safe Drinking Water Act of 1974 (42 U.S.C. 201, 300f et seq., and 21 U.S.C. 349)	40 CFR Part 149
Reference		
https://www.hudexchange.info/environmental-review/sole-source-aquifers		

1. **Is the project located on a sole source aquifer (SSA)[1]?**

   ☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination, such as a map of your project (or jurisdiction, if appropriate) in relation to the nearest SSA and its source area.*

   ☐Yes → *Continue to Question 2.*

2. **Does your project consist solely of acquisition, leasing, or rehabilitation of an existing building(s)?**

   ☐Yes → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☐No → *Continue to Question 3.*

3. **Does your region have a memorandum of understanding (MOU) or other working agreement with EPA for HUD projects impacting a sole source aquifer?**

   Contact your Field or Regional Environmental Officer or visit the HUD webpage at the link above to determine if an MOU or agreement exists in your area.

   ☐Yes → *Provide the MOU or agreement as part of your supporting documentation. Continue to Question 4.*

   ☐No → *Continue to Question 5.*

4. **Does your MOU or working agreement exclude your project from further review?**

   ☐Yes → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination and document where your project fits within the MOU or agreement.*

[1] A sole source aquifer is defined as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. This includes streamflow source areas, which are upstream areas of losing streams that flow into the recharge area.

☐No → *Continue to Question 5.*

5. **Will the proposed project contaminate the aquifer and create a significant hazard to public health?**
   Consult with your Regional EPA Office. Your consultation request should include detailed information about your proposed project and its relationship to the aquifer and associated streamflow source area. EPA will also want to know about water, storm water and waste water at the proposed project. Follow your MOU or working agreement or contact your Regional EPA office for specific information you may need to provide. EPA may request additional information if impacts to the aquifer are questionable after this information is submitted for review.

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide your correspondence with the EPA and all documents used to make your determination*.

   ☐Yes → *Work with EPA to develop mitigation measures. If mitigation measures are approved, attach correspondence with EPA and include the mitigation measures in your environmental review documents and project contracts. <u>If EPA determines that the project continues to pose a significant risk to the aquifer, federal financial assistance must be denied.</u> Continue to Question 6.*

6. **In order to continue with the project, any threat must be mitigated, and all mitigation must be approved by the EPA. Explain in detail the proposed measures that can be implemented to mitigate for the impact or effect, including the timeline for implementation.**

→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

<u>Worksheet Summary</u>

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

TAB 14

WETLAND PROTECTION

Wetlands (CEST and EA)

General requirements	Legislation	Regulation
Executive Order 11990 discourages that direct or indirect support of new construction impacting wetlands wherever there is a practicable alternative. The Fish and Wildlife Service's National Wetlands Inventory can be used as a primary screening tool, but observed or known wetlands not indicated on NWI maps must also be processed. Off-site impacts that result in draining, impounding, or destroying wetlands must also be processed.	Executive Order 11990	24 CFR 55.20 can be used for general guidance regarding the 8 Step Process.
References		
https://www.hudexchange.info/environmental-review/wetlands-protection		

1. **Does this project involve new construction as defined in Executive Order 11990, expansion of a building's footprint, or ground disturbance?**
   The term "new construction" shall include draining, dredging, channelizing, filling, diking, impounding, and related activities and any structures or facilities begun or authorized after the effective date of the Order.

   ☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒ Yes → *Continue to Question 2.*

2. **Will the new construction or other ground disturbance impact an on- or off-site wetland?**
   The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. Wetlands under E.O. 11990 include isolated and non-jurisdictional wetlands.

   ☒ No, a wetland will not be impacted in terms of E.O. 11990's definition of new construction.
   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map or any other relevant documentation to explain your determination.*

   ☐ Yes, there is a wetland that be impacted in terms of E.O. 11990's definition of new construction.

→*You must determine that there are no practicable alternatives to wetlands development by completing the 8-Step Process.*
Provide a completed 8-Step Process as well as all documents used to make your determination, including a map. Be sure to include the early public notice and the final notice with your documentation.
Continue to Question 3.

3. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**

Which of the following mitigation actions have been or will be taken? Select all that apply:

- ☐ Permeable surfaces
- ☐ Natural landscape enhancements that maintain or restore natural hydrology through infiltration
- ☐ Native plant species
- ☐ Bioswales
- ☐ Evapotranspiration
- ☐ Stormwater capture and reuse
- ☐ Green or vegetative roofs with drainage provisions
- ☐ Natural Resources Conservation Service conservation easements
- ☐ Compensatory mitigation

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

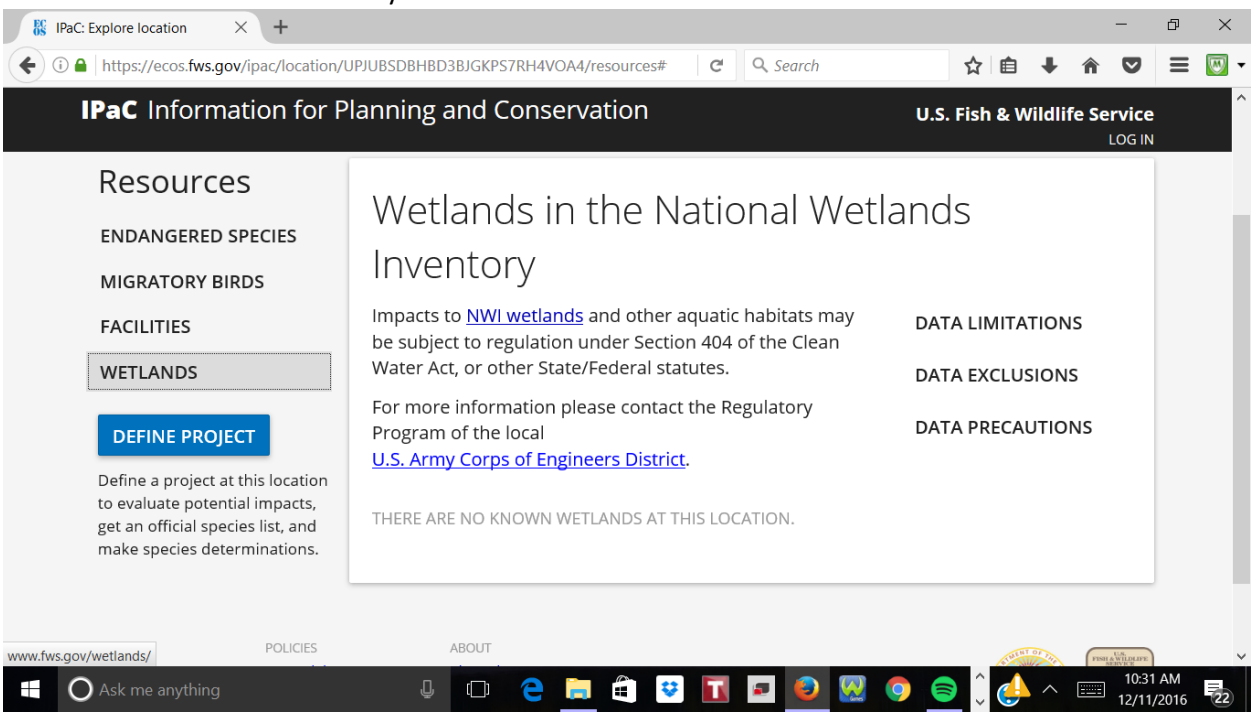
In accordance to the National Wetland Inventory map, which is attached, there are no wetlands shown on the subject site.

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

699 N. Patrick Wetland Inventory



TAB 15

WILD AND SCENIC RIVERS

Wild and Scenic Rivers (CEST and EA)

General requirements	Legislation	Regulation
The Wild and Scenic Rivers Act provides federal protection for certain free-flowing, wild, scenic and recreational rivers designated as components or potential components of the National Wild and Scenic Rivers System (NWSRS) from the effects of construction or development.	The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287), particularly section 7(b) and (c) (16 U.S.C. 1278(b) and (c))	36 CFR Part 297
References		
https://www.hudexchange.info/environmental-review/wild-and-scenic-rivers		

1. **Is your project within proximity of a NWSRS river as defined below?**
   Wild & Scenic Rivers: These rivers or river segments have been designated by Congress or by states (with the concurrence of the Secretary of the Interior) as wild, scenic, or recreational
   Study Rivers: These rivers or river segments are being studied as a potential component of the Wild & Scenic River system.
   Nationwide Rivers Inventory (NRI): The National Park Service has compiled and maintains the NRI, a register of river segments that potentially qualify as national wild, scenic, or recreational river areas

   ☒ No
   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination, such as a map identifying the project site and its surrounding area or a list of rivers in your region in the Screen Summary at the conclusion of this screen.*

   ☐ Yes, the project is in proximity of a Nationwide Rivers Inventory (NRI) River.
   → *Continue to Question 2.*

2. **Could the project do *any* of the following?**
   - Have a direct and adverse effect within Wild and Scenic River Boundaries,
   - Invade the area or unreasonably diminish the river outside Wild and Scenic River Boundaries, or
   - Have an adverse effect on the natural, cultural, and/or recreational values of a NRI segment.

Consultation with the appropriate federal/state/local/tribal Managing Agency(s) is required, pursuant to Section 7 of the Act, to determine if the proposed project may have an adverse effect on a Wild & Scenic River or a Study River and, if so, to determine the appropriate avoidance or mitigation measures.
Note: Concurrence may be assumed if the Managing Agency does not respond within 30 days; however, you are still obligated to avoid or mitigate adverse effects on the rivers identified in the NWSRS

☐ No, the Managing Agency has concurred that the proposed project will not alter, directly, or indirectly, any of the characteristics that qualifies or potentially qualifies the river for inclusion in the NWSRS.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

☐ Yes, the Managing Agency was consulted and the proposed project may alter, directly, or indirectly, any of the characteristics that qualifies or potentially qualifies the river for inclusion in the NWSRS.

→ *Continue to Question 3.*

3. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

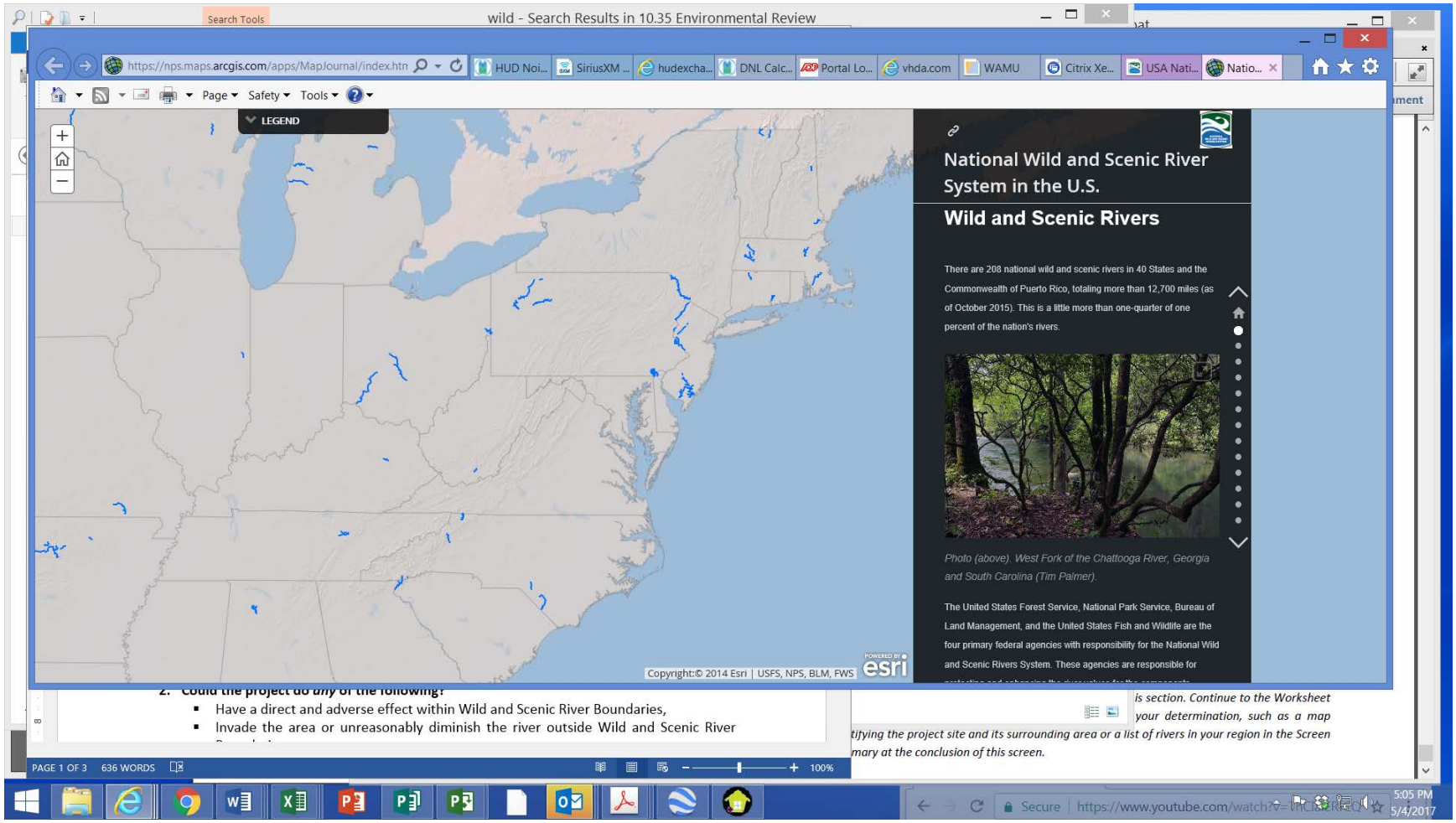
- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Please see the attached map providing evidence that there are no scenic rivers in Virginia.

Are formal compliance steps or mitigation required?

☐ Yes

☐ No



As shown above, there are no designated wild and scenic rivers in the State of Virginia.

TAB 16

ENVIRONMENTAL JUSTICE

Environmental Justice (CEST and EA)

General requirements	Legislation	Regulation
Determine if the project creates adverse environmental impacts upon a low-income or minority community. If it does, engage the community in meaningful participation about mitigating the impacts or move the project.	Executive Order 12898	
References		
https://www.hudexchange.info/environmental-review/environmental-justice		

HUD strongly encourages starting the Environmental Justice analysis only after all other laws and authorities, including Environmental Assessment factors if necessary, have been completed.

1. **Were any adverse environmental impacts identified in any other compliance review portion of this project's total environmental review?**

   ☐Yes → *Continue to Question 2.*

   ☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

2. **Were these adverse environmental impacts disproportionately high for low-income and/or minority communities?**

   ☐Yes

   Explain:

   → *Continue to Question 3. Provide any supporting documentation.*

   ☐No

   Explain:

   → *Continue to the Worksheet Summary and provide any supporting documentation.*

3. **All adverse impacts should be mitigated. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**

☐Mitigation as follows will be implemented:

→ *Continue to Question 4.*

☐No mitigation is necessary.

Explain why mitigation will not be made here:

→ *Continue to Question 4.*

4. **Describe how the affected low-income or minority community was engaged or meaningfully involved in the decision on what mitigation actions, if any, will be taken.**

→ *Continue to the Worksheet Summary and provide any supporting documentation.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

The Ramsey Homes site has been used as affordable housing since 1953. As the existing development is obsolete and in need of modernization, the proposed development will allow the site to continue to be used as an affordable housing alternative serving residents between 30% and 60% of area median income. In addition, the proposed Ramsey Homes Project is consistent with the ARHA 2012-2022 Strategic Plan, the City's Housing Master Plan and the Braddock East Master Plan (BEMP).

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

TAB 17

CONFORMANCE WITH PLANS/ ZONING

Introduction and first reading:
Public hearing:
Second reading and enactment:

INFORMATION ON PROPOSED ORDINANCE

Title

AN ORDINANCE to amend and reordain the Master Plan of the City of Alexandria, Virginia, by adopting and incorporating therein the amendment approved by city council on March 12, 2016 to the Braddock East Small Area Plan chapter of such master plan as Master Plan Amendment No. 2015-0003 to amend the land use and development framework tables pertaining to the Ramsey Homes property and no other amendments, and to repeal all provisions of the said master plan as may be inconsistent with such amendment.

Summary

The proposed ordinance accomplishes the final adoption of Master Plan Amendment No. 2015-0003 to amend the Braddock East Master Plan as it pertains to the Ramsey Homes Property approved by the City Council on March 12, 2016.

Sponsor

Department of Planning and Zoning

Staff

Karl Moritz, Director of Planning and Zoning
James L. Banks, Jr., City Attorney
Joanna C. Anderson, Deputy City Attorney

Authority

§ 9.01, Alexandria City Charter
§ 11-900, City of Alexandria Zoning Ordinance

Estimated Costs of Implementation

None

Attachments in Addition to Proposed Ordinance and its Attachment (if any)

None

ORDINANCE NO. _____

AN ORDINANCE to amend and reordain the Master Plan of the City of Alexandria, Virginia, by adopting and incorporating therein the amendment approved by city council on March 12, 2016 to the Braddock East Small Area Plan chapter of such master plan as Master Plan Amendment No. 2015-0003 to amend the land use and development framework tables pertaining to the Ramsey Homes property and no other amendments, and to repeal all provisions of the said master plan as may be inconsistent with such amendment.

WHEREAS, the City Council of the City of Alexandria finds and determines that:

1. In Master Plan Amendment No. 2015-0003 the Planning Commission, having found that the public necessity, convenience, general welfare and good zoning practice so require, recommended approval to the City Council on February 4, 2016 of an amendment to the Braddock East Chapter of the Master Plan of the City of Alexandria to amend the land use and development framework tables pertaining to the Ramsey Homes property which recommendation was approved by the City Council at public hearing on March 12, 2016;

2. The said amendment has heretofore been approved by the planning commission and city council after full opportunity for comment and public hearing.

3. All requirements of law precedent to the adoption of this ordinance have been complied with; now, therefore,

THE CITY COUNCIL OF ALEXANDRIA HEREBY ORDAINS:

Section 1. That the Braddock East Chapter of the Master Plan of the City of Alexandria, be, and the same hereby is, amended by amending Table 3 on Page 37 and Table 5 on Page 47 as shown on the document labeled Attachment 1 attached hereto and incorporated fully herein by reference.

Section 2. That the director of planning and zoning be, and hereby is, directed to record the foregoing master plan amendment as part of the Master Plan of the City of Alexandria, Virginia.

Section 3. That all provisions of the Master Plan of the City of Alexandria, Virginia, as may be inconsistent with the provisions of this ordinance be, and same hereby are, repealed.

Section 4. That the Master Plan of the City of Alexandria, as amended by this ordinance, be, and the same hereby is, reordained as the Master Plan of the City of Alexandria, Virginia.

Section 5. That the city clerk shall transmit a duly certified copy of this ordinance to the Clerk of the Circuit Court of the City of Alexandria, Virginia, and that the said Clerk of the Circuit Court shall file same among the court records.

Section 6. That this ordinance shall become effective upon the date and at the time of its final passage.

ALLISON SILBERBERG
Mayor

Introduction:
First Reading:
Publication:
Public Hearing:
Second Reading:
Final Passage:

Introduction and first reading: May 10
Public hearing: May 14
Second reading and enactment: May 14

INFORMATION ON PROPOSED ORDINANCE

Title

AN ORDINANCE to amend and reordain Sheet No. 054.04 of the "Official Zoning Map, Alexandria, Virginia," adopted by Section 1-300 (OFFICIAL ZONING MAP AND DISTRICT BOUNDARIES), of the City of Alexandria Zoning Ordinance, by rezoning the property at 699 North Patrick Street from, RB/Townhouse Zone to CRMU-M/Commercial Residential Mixed Use (Medium) Zone in accordance with the said zoning map amendment approved by city council on March 12, 2016 as Rezoning No. 2015-0003.

Summary

The proposed ordinance accomplishes the final adoption of Rezoning No. 2015-0003, to rezone the ARHA Ramsey Homes at 699 North Patrick Street from, RB/Townhouse Zone to CRMU-M/Commercial Residential Mixed Use (Medium) Zone.

Sponsor

Department of Planning and Zoning

Staff

Karl Moritz, Director of Planning and Zoning
James L. Banks, Jr., City Attorney
Joanna C. Anderson, Deputy City Attorney

Authority

§§ 2.04(w), 9.12, Alexandria City Charter
§ 11-800, City of Alexandria Zoning Ordinance

Estimated Costs of Implementation

None

Attachments in Addition to Proposed Ordinance and its Attachments (if any)

None

ORDINANCE NO. _____

AN ORDINANCE to amend and reordain Sheet No. 054.04 of the "Official Zoning Map, Alexandria, Virginia," adopted by Section 1-300 (OFFICIAL ZONING MAP AND DISTRICT BOUNDARIES), of the City of Alexandria Zoning Ordinance, by rezoning the property at 699 North Patrick Street from, RB/Townhouse Zone to CRMU-M/Commercial Residential Mixed Use (Medium) Zone in accordance with the said zoning map amendment approved by city council on March 12, 2016 as Rezoning No. 2015-0003. (ARHA Ramsey Homes)

WHEREAS, the City Council finds and determines that:

1. In Rezoning No. 2015-0003, the Planning Commission, having found that the public necessity, convenience, general welfare and good zoning practice so require, recommended approval to the City Council on February 4, 2016 of a rezoning of the property at 699 North Patrick Street from RB/Townhouse Zone to CRMU-M/Commercial Residential Mixed Use (Medium) Zone, which recommendation was approved by the City Council at public hearing on March 12, 2016;

2. The said rezoning is in conformity with the Master Plan of the City of Alexandria, Virginia, as amended;

3. All requirements of law precedent to the adoption of this ordinance have been complied with; now, therefore,

THE CITY COUNCIL OF ALEXANDRIA HEREBY ORDAINS:

Section 1. That Sheet No. 054.04 of the "Official Zoning Map, Alexandria, Virginia," adopted by Section 1-300 of the City of Alexandria Zoning Ordinance, be, and the same hereby is, amended by changing, in the manner set forth below, the zoning classification of the property hereinafter described:

LAND DESCRIPTION: 699 North Patrick Street, Tax Map #054.04-12-01

From: RB/Townhouse Zone
To: CRMU-M/Commercial Residential Mixed Use (Medium) Zone

Section 2. That the director of planning and zoning be, and hereby is, directed to record the foregoing amendment on the said map.

Section 3. That Sheet No. 054.04 of the "Official Zoning Map, Alexandria, Virginia," as so amended, be, and the same hereby is, reordained as part of the City of Alexandria Zoning Ordinance.

Section 4. That this ordinance shall become effective on the date and at the time of its final passage.

ALLISON SILBERBERG
Mayor

Introduction: May 10, 2016
First Reading: May 10, 2016
Publication:
Public Hearing: May 16, 2016
Second Reading: May 16, 2016
Final Passage: May 16, 2016

TAB 18

SOIL SUITABLITY/ DRAINANGE/ STORM WATER RUNOFF

GEOTECHNICAL ENGINEERING REPORT

Ramsey Homes Redevelopment

Alexandria, Virginia

(KEI Project No.: G16061)

KIM ENGINEERING

November 3, 2016

Mr. Mohammad Mohib Siddiqi
Procurement Manager
Alexandria Redevelopment & Housing Authority
401 Wyte Street
Alexandria, Virginia 22314

Project: **Geotechnical Services Report**
Ramsey Homes Redevelopment
699 North Patrick Street, Alexandria, VA
KEI Project Number: G16061

Dear Mr. Siddiqi,

Kim Engineering Inc. (KEI) is pleased to submit a copy of our report for the above referenced project. This investigation was conducted in accordance with our proposal dated August 12th, 2016 and your subsequent approval.

Services performed include the drilling of ten (10) SPT soil test borings, performing four (4) field infiltration tests, laboratory testing, and preparation of a geotechnical service report.

Our geotechnical services report includes the following:

- An evaluation of the estimated subsurface soil conditions and groundwater conditions at the project site.
- Recommendations for building foundations including soil bearing pressure and settlement.
- Stormwater management infiltration rate information and associated testing depth information, if feasible, for the stormwater management areas.
- Seismic site classification information.
- Comments on geotechnical aspects of construction that was readily apparent at the time of, in the area of, and to the depth of the investigation.
- Comments on excavation and construction related information for the substrate conditions encountered in the specified test borings.

Services with respect to surveying for line and grade, specific dewatering recommendations, environmental matters, temporary slopes, pavement design, seepage analysis, slope stability, erosion control, cost or quantity estimates, plans, specifications, and construction observation and testing were not included in the scope of services.

Soil samples will be held for a period of thirty (30) days after the date of this report and then disposed of, unless an alternate disposition is requested.

We appreciate the opportunity to be of service to you for this project. If you have any questions regarding this project, please do not hesitate to contact either of the undersigned.

Very truly yours,
KIM ENGINEERING, INC.

Andre Browne
Project Manager

Sunny Kim, P.E.
Principal

COMMONWEALTH OF VIRGINIA
MYUNSUN SUNNY KIM
No. 024617
PROFESSIONAL ENGINEER

GEOTECHNICAL SERVICES REPORT
RAMSEY HOMES REDEVELOPMENT
ALEXANDRIA, VA

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ATTACHMENTS

Drawing No. 1 Site Location
Drawing No. 2 Boring Location Plan

APPENDIX A **Records of Field Testing**

- Record of Soil / Rock Exploration Logs
- Field Infiltration Test Results

APPENDIX B **Laboratory Test Results**

- Moisture Content
- Atterberg Limits
- Gradation Analysis
- USDA Textural Classification Charts

1.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The following is a summary of our conclusions and recommendations:

a Subsurface conditions in the proposed construction area generally indicate existing fill consisting of silty clayey SAND (SC-SM) in stratum A. Naturally occurring soils consisting of clayey SAND (SC), silty SAND (SM) and layers of sandy lean CLAY (CL) in stratum B.

b The naturally occurring soils of Stratum B are suitable for support of foundations. We recommend a design soil bearing pressure of **3,000** psf for footings founded on approved natural soil or on new compacted fill placed over approved natural soil.

c Infiltration may be feasible at the test depth and at the location of SWM-1, SWM-2, SWM-3 and SWM-4 based on the flow rates obtained and also based on groundwater or weathered rock not encountered.

d Compacted fill in structural areas should typically be classified sandy silt (ML) or more granular per ASTM D 2487, and compacted to at least 95 percent of maximum dry density per ASTM D 698. The on-site clayey SAND (SC) of stratum B may be considered suitable for reuse as fill and backfill; however, some importing or substitution may be necessary.

e Variations in soil conditions may be encountered during construction. Determination of such variations will permit correlation between the subsurface exploration data of this report and actual conditions encountered during construction and verification of conformance with the plans and specifications. We recommend that Kim Engineering, Inc. be retained to perform professional observations of foundation subgrades.

This report is based on information available to us on the proposed construction. If the project characteristics are changed from those indicated herein, our recommendations may require some modifications. Please advise us of any changes in the proposed construction.

We recommend that the project specifications include the following statement:

> "A geotechnical report has been prepared for this project by Kim Engineering, Inc. and is available to prospective bidders and/or contractors for informational purposes only. The report has been prepared for design purposes only and may not be sufficient to prepare an accurate bid for construction. Contractors wishing copies of this report may secure them from Kim Engineering Inc. at a nominal charge with the understanding that its scope is limited solely to generalized design considerations."

We have prepared this report in accordance with contemporary geotechnical engineering practices and make no warranties, either expressed or implied, as to the professional services provided under the terms of our agreement and included in this report.

2.0 SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The site is located at 699 North Patrick Street, Alexandria VA and is bordered by Wythe Street to the north, Pendleton Street to the south and North Patrick Street to the west. Drawing Number 1, Site Location, shows the location of the project site. The existing site is generally flat and consists of four (4) existing residential buildings surrounded by landscape, walkways, sidewalks, trees and grass areas. The entire fieldwork was done in readily accessible areas working within the proposed construction area. The soil test borings were located in the field by Kim Engineering, Inc (KEI). Accurate drawings of the site and surrounding areas were provided by our Client.

Based on review of project drawings and on information provided to us, the construction will consist of a new four story multifamily residential building and associated stormwater management (SWM) facilities at several locations.

The new building would consist of 52 units and 20 parking spaces in an underground garage. The wooden frame structure will be constructed on a concrete podium. The maximum column load will be 365 kips and the maximum wall load will be 15 kips/foot.

To accommodate the new construction, stormwater management (SWM) detention facilities will be incorporated into the design. The stormwater management (SWM) detention facilities will consist of an underground storage vault with an infiltration system in accordance with the Virginia DEQ Stormwater Design Specification No. 8. Four (4) locations have been identified for SWM development. The base of the facilities will be situated at a depth of about 12 +/- feet beneath the existing grades.

3.0 SUBSURFACE EXPLORATION

3.1 Test Boring

In order to approximate the subsurface conditions of the site for the study, a total of ten (10) standard penetration tests (SPT) borings (B-1 to B-6 and SWM-1 to SWM-4) were drilled in the accessible areas of the site. The approximate locations of the test borings are depicted on the attached Drawing Number 2 - Boring Location Plan.

The standard penetration tests (SPT) borings for the proposed construction were drilled to depths ranging from 15.0 to 40.0 feet below-grade. The table below summarizes the test boring schedule.

Table 1: Summary of Test Borings

Proposed Structure/Facility	Boring Identification	Estimated Ground Surface Elevation (ft)	Depth of Boring (ft)
New Multifamily Building	B-1	44.00±	35
	B-2	44.00±	35
	B-3	44.00±	40
	B-4	44.00±	30
	B-5	44.00±	40
	B-6	44.00±	40
Stormwater Management SWM	SWM-1	44.00±	15
	SWM-2	43.00±	15
	SWM-3	44.00±	15
	SWM-4	43.00±	15

The estimated surface elevations that are referenced in this report are based on "Google Earth".

The test borings were accomplished using a truck mounted drill rig. The exploration program was performed in the field from October 3rd to October 5th 2016. Hollow-stem augers were advanced to pre-selected depths and representative soil samples were recovered with a standard split-spoon sampler in general accordance with ASTM D-1586. Disturbed representative soil samples were recovered while performing the Standard Penetration Test (SPT). This test (ASTM D-1586) consists of a 140 pound (lb) hammer falling a distance of 30 inches. The number of blows required to drive the standard split spoon sampler (2 inch O.D., 1-3/8 inch I.D.) a distance of 12 inches after an initial set of 6 inches to ensure the sampler is in undisturbed material, is recorded as the Standard Penetration Resistance (N-Value) of the soil.

The N-value, for the majority of subsurface situations, provides a generalized indication of in-situ soil conditions when reviewed by individuals with established geotechnical backgrounds. Various individuals and institutions have correlated the N-values with approximations of certain engineering properties of the soils.

The test borings were advanced using auger techniques to depths indicated in table 1 above. Subsurface water level readings were taken in each of the test borings during drilling and at the completion of the drilling process. Upon completion, the boreholes were backfilled with auger cuttings (soil). The backfill material was compacted to the extent feasible; however, some subsidence of the backfill could occur at a future date. As a result, it is recommended that the boreholes be monitored periodically.

Representative portions of the split-spoon soil samples obtained throughout the exploration program were placed in glass jars and transported to our laboratory. In the laboratory, the soil samples were evaluated by a member of our professional staff in general accordance with techniques outlined in the visual-manual identification procedure (ASTM D-2488) and the Unified Soil Classification System. The soil descriptions and classifications discussed in this report and shown on the attached boring logs are based on visual observation and, as previously noted, should be considered approximate.

Soil samples recovered on this project will be stored at Kim Engineering, Inc. for a period of thirty (30) days from the date of this report. After thirty (30) days, the samples will be discarded unless prior notification for an alternate disposition is provided to us in writing.

3.2 Infiltration Tests

Four (4) field infiltration tests were performed adjacent to the test borings (SWM-1 to SWM-4) on October 4, 2016. The tests were performed at depths ranging from 10 feet to 11 feet below-grade at the locations. At each location, continuous flight auger boring was offset 5 feet of the test boring and extended to the required test depth. Then, the center plug was removed, and PVC pipe was installed in the borehole. The pipe was gently tapped to seat it into the base of the boring. The annular space was backfilled with soil material. Subsequent to the installation, a minimum 24-inch head of water was added to the PVC pipe at completion of the installation to satisfy the presoak.

After a 24-hour presoak period, our project engineer returned to the site to conduct in-situ infiltration testing at the location. The field infiltration tests were performed in general accordance with the stipulations of the Virginia DEQ Stormwater Design Specification No. 8. The infiltration test result for the locations tested are included in Appendix A.

Infiltration boreholes were backfilled immediately after completion of field infiltration tests and surfaces were restored in kind.

4.0 GEOLOGY

Based on the Geologic Map of the City of Alexandria, this project site is underlain by the Old Town Terrace (late Pleistocene) formation. The Old Town Terrace (late Pleistocene) formation consists of Quaternary aged sediments that includes sand, gravel and silty clay, with organic layers. The terrace consists of repetitive, broadly fining-up sequences, gravelly in their lower parts, grading up through sand and muddy sand into mud and locally separated by prominent organic horizons. The modern surface of the terrace above an elevation of about 30 to 35 feet is composed chiefly of stratified silt and clay. This formation ranges in thickness of up to 125 feet.

5.0 SUBSURFACE CONDITION

5.1 General Stratification

The subsurface conditions discussed below and those shown on the boring logs represent an estimate of the subsurface conditions based on an interpretation of the boring data using geotechnical engineering judgment. In most instances the relatively small sample obtained in the field may be insufficient to definitively describe the possible origin of the subsurface material. Transitions between different soil strata are usually less distinct than those shown on the boring logs. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates shown, they are not necessarily indicative of subsurface conditions at other locations or at other times.

More comprehensive descriptions of the materials encountered are included on the attached test boring logs. The subsurface investigation indicated that the following generalized strata underlie the site in the areas and to the depths investigated.

Ground Cover: Topsoil was encountered at the surface at the test borings locations. The topsoil thickness was approximately 4 inches to 7 inches thick.

Stratum A (Existing FILL)
Existing Fill was encountered below the ground cover at all the test boring locations. The fill material extended to a depth of about 2 feet and generally consisted of silty clayey Sand. The Standard Penetration Test (SPT) N-values in the granular fill material ranged from 3 to 13 blows per foot (bpf), indicating very loose to medium dense relative densities.

Stratum B (Natural Soils): Natural soil was encountered below the existing fill at the test boring locations. The soil generally consisted of clayey Sand and silty Sand. The SPT N-Values obtained

in the granular soils ranged from 5 bpf to 43 bpf, indicating loose to dense relative densities. A layer of sandy lean Clay was encountered at test borings B-1 to B-6 at depths ranging from 23 feet to 25 feet below ground and extended to depths ranging from 28 feet to 30 feet. The SPT N-Values obtained in the cohesive sandy lean Clay layer ranged from 6 bpf to 16 bpf, indicating medium stiff to stiff consistencies.

The soil symbols indicated in the stratum descriptions and on the boring logs represent the Unified Soil Classification (ASTM D-2488) group symbols and are based primarily on visual observation of the specimens recovered. Criteria for visual-manual classification of soil samples are given in Appendix A of this report.

5.2 Groundwater

Groundwater was encountered during drilling at an approximate depth of 18.0 feet (El. 26.00±). No groundwater was observed at completion or 24 hours after completion of drilling. Water levels are for the times noted on the boring logs only. These levels do not reflect flood, tidal or seasonal fluctuations in groundwater levels. Fluctuations of groundwater levels, as well as perched water, may be expected with variations in precipitation, evaporation, surface runoff, and related factors.

6.0 LABORATORY TESTING

Geotechnical laboratory testing was performed on jar samples obtained from selected test borings for soil classification and moisture content. Tests were performed in accordance with their associated ASTM Standards. The test results are presented in Appendix B.

The associated ASTM methods are presented below:

ASTM Method	Description
D-2216	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
D-422	Standard Test Method for Particle-Analysis (Grain Size Distribution)
D-4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

The table below summarizes the laboratory test results:

Table 2: Summary of Laboratory Test Results

Boring No.	Sample No.	Depths (ft)	USCS	Percent Fines (-#200)	Liquid Limit (LL)	Plasticity Index (PI)	Natural Moisture (%)
B-1	S-3	5.0-6.5	SC	47.8	38	17	20.2
B-2	S-6	13.5-15.0	SM	36.0	NV	NP	14.6
B-4	S-6	13.5-15.0	SM	18.5	NV	NP	5.8
B-5	S-3	5.0-6.5	SC	29.4	35	14	18.6
SWM-1	S-6	13.5-15.0	SC	41.6	33	11	19.8
SWM-2	S-6	13.5-15.0	SC	47.9	32	11	13.0
SWM-3	S-6	13.5-15.0	SC	33.4	35	15	14.6
SWM-4	S-6	13.5-15.0	SC	36.3	32	12	12.7

7.0 CONCLUSIONS AND RECOMMENDATIONS

The geotechnical conclusion and recommendations provided in this report are based on the project information provided to us and the subsurface conditions encountered at the site. The following sections provide recommendations for proposed construction.

7.1 Proposed Construction

Based on review of project drawings and on information provided to us, the construction will consist of a new four story multifamily residential building and associated stormwater management (SWM) facilities at several locations.

The new building would consist of 52 units and 20 parking spaces in an underground garage. The wooden frame structure will be constructed on a concrete podium. The maximum column load will be 365 kips and the maximum wall load will be 15 kips/foot.

To accommodate the new construction, stormwater management (SWM) detention facilities will be incorporated into the design. The stormwater management (SWM) detention facilities will

consist of an underground storage vault with an infiltration system in accordance with the Virginia DEQ Stormwater Design Specification No. 8. Four (4) locations have been identified for SWM development. The base of the facilities will be situated at a depth of about 12 +/- feet beneath the existing grades.

7.2 Foundation Design Consideration

The site is typically underlain by what appears to be naturally occurring deposits of clayey Sand (SC) and silty Sand (SM) material all of which, based upon the results of our test borings, are currently judged to have sufficient strength to support conventional spread footing foundations for moderately loaded structures similar to the configuration of the proposed construction. Accordingly, it is the opinion of Kim Engineering that the proposed construction may be supported on a spread footing foundation system bearing on approved naturally occurring materials or, if necessary, on very limited quantities of structural fill placed over approved natural soils.

7.3 Allowable Soil Design Bearing Capacity

Our current study, incorporating the SPT N-values and the soil classifications, indicates that conventional spread footing foundations should be designed using a maximum net allowable soil design bearing pressure not in excess of **3,000** pounds per square foot for foundations bearing on approved naturally occurring soil deposits of stratum B or denser materials. To reduce the possibility of localized shear failures, strip footings should be a minimum of 18 inches wide, while column footings should be a minimum of 30 inches square. Perimeter footing subgrade foundation should be at least 30 inches below the final exterior grade for frost protection. Variable bearing conditions may occur at the project site; therefore, we recommend that the footings be properly reinforced to provide them with greater bending capacity.

7.4 Settlement

Based on the boring data and the anticipated structural loads, we estimate that total settlements for the foundations should not exceed one inch with differential settlement expected to be less than half the total settlement. The magnitude of differential settlements will be influenced by the distribution of loads and the variability of underlying materials. These settlement values are based on our engineering experience of the soil and the anticipated structural loading, and are to guide the structural engineer with his design. Quality control during construction is considered

to be extreme importance to ensure that subsequent settlements, following the construction process, are kept to a minimum.

7.5 Ground Bearing Floor Slab

Based on the subsurface conditions, floor slab-on-grade for the new building can be supported by approved compacted existing site soils. We recommend a modulus of subgrade reaction (k) of 100 pounds per cubic inch (pci) for approved subgrades (k value considers a 1-ft by 1-ft square plate). A minimum 6-inch thick layer of free draining aggregate is recommended to be placed below the floor slab to serve as a capillary moisture barrier. A polyethylene membrane or similar vapor barrier should be placed over the aggregate to prevent concrete contamination.

Slab subgrades are often disturbed after final grading due to ongoing construction activities, utility installations, and weather conditions. We recommend that subgrades that become saturated or lose their support capabilities be removed and replaced with new selected compacted engineered fill.

7.6 Lateral Earth Pressure

An underground garage is planned. The walls of this garage will be subjected to lateral soil loading. As a result, the walls will have to be designed to resist lateral earth pressure. The following information is provided to aid in the analysis of loading conditions on the sections of the walls.

Earth pressures on walls below grade are influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction, and the strength of the materials being restrained. The most common conditions for earth retaining wall design are the active and at-rest conditions. Active conditions apply to relatively flexible earth retention structures where some movement and rotation may occur to mobilize internal soil shear strength.

The walls will most likely be subjected to exterior surcharge loading conditions. As a result, surcharge loads for the walls should be evaluated using the appropriate earth pressure coefficients. The effect of surcharge loads should then be added to the recommended earth pressures to determine total lateral stresses against the walls. The various drainage considerations as included in the subsequent Drainage Provisions section should be properly implemented to avoid the buildup of hydrostatic pressure on the walls.

The recommended lateral earth pressure coefficient and equivalent fluid pressure parameter for the design of the walls for horizontal surface grades behind the walls are provided in the following table:

Table 3: Design Parameters for Retaining Wall

Material Description	Earth Pressure Condition	Coefficient	Equivalent Fluid Pressure (pounds per square foot per foot)
Clayey SAND and Silty SAND	At Rest (K_0)	0.50	60
	Active (K_a)	0.33	40

A soil moist unit weight of 120 pounds per cubic foot is considered appropriate for design calculations. Resistance to sliding can be calculated using a value of 0.30 for the coefficient of friction between concrete surfaces and approved underlying subgrade soils. A factor of safety of 1.5 should be used for design. An adequate drainage system should be constructed on the exterior of all the walls (see subsequent Drainage Provision section). Use of heavy compaction equipment should not be allowed within 10 feet of the walls during backfilling operations.

7.7 Drainage Provisions

It is anticipated that the below grade walls may be subjected to groundwater that is perched/trapped over the dense soil layer. To avoid producing hydrostatic pressures on the walls, it is recommended that an approved vertical drain be constructed along the entire exterior of the sublevel walls. The drain would most likely be a commercial product such as Enka Drain or Geotech DrainBoard. The commercial product would have filter fabric on its outer face. The system would incorporate drain tile to route the water to a gravity drain.

7.8 Groundwater Considerations

Groundwater is unlikely to be encountered during construction of the foundations. However, groundwater levels are subject to seasonal and long term variation in response to climatic condition and man-made influences. Sumps and pumps should be adequate to handle any precipitation and possibly perched groundwater conditions. Measures should be implemented to ensure excavations are maintained dry at all times.

7.9 Seismic Site Coefficient

We are providing a Seismic Site Class Definition per the 2015 International Building Code (IBC). Our scope of services did not include a seismic conditions survey to determine site-specific (accurate) shear wave velocity information. IBC 2015 provides a methodology for interpretation of Standard Penetration Test resistance values (N-values) to determine a Site Class Definition. However, this method requires averaging N- values over the top 100 feet of the subsurface profile, a depth well in excess of the depths of the test borings.

Based on the subsurface data presently obtained and in general accordance with the 2015 IBC, we are currently of the opinion that a Site Classification "D" can be used for further evaluations relative to Earthquake Load design.

7.10 Stormwater Management Considerations

Estimated infiltration rates and test depths are presented in Table 4 below.

Table 4: Estimated Infiltration Rate

Boring Identification	Depth of Test (ft) / Elevation of Test (ft)	Infiltration Rate (inch/hour)	USDA Textural Classification	Minimum USDA Infiltration Rate (in./hr)
SWM-1	11ft/33.00ft	4.23	SANDY LOAM	1.02
SWM-2	10ft/33.00ft	12.51	SANDY LOAM	1.02
SWM-3	11ft/33.00ft	4.47	SANDY LOAM	1.02
SWM-4	10ft/33.00ft	4.50	SANDY LOAM	1.02

Based on the Virginia DEQ Stormwater Design Specification No. 8, a minimum field infiltration rate of 0.50 inches per hour is required for infiltration practices. Lower infiltration rates preclude the use of infiltration practices. Infiltration practices are also precluded if groundwater or bedrock are encountered within 2 feet of the bottom of the proposed facility.

For design purposes, we recommend using the lower value of the average field infiltration rate and minimum USDA infiltration rate associated with the textural classification. The field and laboratory test results indicate that infiltration may be feasible at the test depth and at the location of SWM-1, SWM-2, SWM-3 and SWM-4 based on the flow rates obtained and also based on groundwater or weathered rock not encountered.

7.11 Site Preparation

7.11.1 Clearing and Stripping

Vegetation, topsoil, roots and all deleterious material must be removed in the project area prior to construction. Clearing and stripping should extend several feet beyond the development area if possible, and should be performed in a manner as to minimize disruption of the subgrade soils. Depressions made by clearing operations shall be filled with suitable material and compacted to conform to the adjacent surface. Grades shall be sloped at no steeper than 1 horizontal to 1 vertical (1:1). All cleared and grubbed material shall be disposed of outside and below the limits of the project area.

7.11.2 Inspection of Subgrades

We recommend that all subgrades be inspected by a Geotechnical Engineer or an experienced engineering technician. Subgrades should be tested to check whether any unstable areas exist. Any unstable zones that are identified that cannot be re-compacted should be undercut to a depth, within the area marked by the inspecting Engineer. The depths and extent of undercuts shall be determined by the inspecting Geotechnical Engineer. Deeper undercuts should be avoided, and it is requested that KEI be extended an opportunity to review the conditions warranting any deeper undercuts before undercutting commences. Undercut volume shall be backfilled to grade with compacted engineered fill in accordance with the requirements in this report.

Exposed subgrades must be sloped to facilitate surface runoff away from construction area and to prevent ponding of surface water. If ponding of surface water does occur, it should be removed by pumping, ditching or as otherwise directed by the inspecting geotechnical engineer. During periods of anticipated inclement weather, exposed surfaces shall be graded and sealed to preclude infiltration of surface water. Subgrades, which become disturbed due to inclement weather or construction traffic and require over-excavation, should be reworked at no additional cost to the project.

7.11.3 Fill Material and Compaction

The project near surface soils generally consisted of clayey Sand. The on-site clayey Sand that is free of organics and debris is considered to be suitable for reuse as compacted engineered fill. Sorting to remove oversized material (larger than 3 inches in diameter) may be required.

If imported fill is required at the site, we recommend that the material have low expansive characteristics. The material should have less than 50 percent passing the No. 200 sieve, Liquid Limit of 30 or less and Plasticity Index less than 10.

We recommend that the fill material be placed in lifts having a maximum loose lift thickness commensurate with the equipment being utilized to perform the compaction. In no case, should those lifts exceed eight (8) inches. Each lift should be uniformly compacted to at least 95% of the laboratory maximum dry density as determined by ASTM D698.

8.0 LIMITATIONS

This report has been prepared for the exclusive use by our Client for specific application to the proposed construction as presented herein. Our services were performed in accordance with contemporary geotechnical engineering practices. No warranty, either expressed or implied, is made. Our conclusions and recommendations are based on the preliminary design information furnished to us, the data obtained from the subsurface exploration program, and/or current geotechnical engineering practices. The findings and recommendations do not reflect variations in subsurface conditions that could exist between the boring locations or in unexplored areas of the site. Should such variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon on-site observations of the conditions.

Regardless of the thoroughness of a subsurface exploration, there is the possibility that conditions in other areas will differ from those at the boring locations and the conditions may not be as anticipated by the designers. Additionally, the construction process may alter the soil conditions. Therefore, experienced geotechnical engineers should evaluate earthwork and foundation construction to verify that the conditions anticipated in design actually exist in the field at the time of construction. Otherwise, we assume no responsibility for construction compliance with the design concepts, specifications, or recommendations.

In the event that changes are made in the design or location of the proposed facilities, the recommendations presented in the report shall not be considered valid unless the changes are reviewed by our firm and conclusions of this report modified and/or verified in writing. If this report is copied or transmitted to a third party, it must be copied or transmitted in its entirety, including text, attachments, and enclosures. Interpretations based on only a part of this report may not be valid.

It is important to note that our study was done in an effort to assist planning and design personnel in the preparation of generalized drawings and specifications for the project. As a result of this,

potential contractors should be encouraged to conduct their own individually tailored studies to assess soils conditions, rock levels, excavation slope gradients, temporary excavation support methods, and groundwater/perched water levels and conditions. Specifically, our report has been prepared for generalized purposes of planning and design and may not be sufficiently comprehensive for bid preparation purposes.

ATTACHMENTS

KIM ENGINEERING, INC.

11900 Baltimore Avenue Suite F, Beltsville, MD 20705

PROJECT NO.: G16061

SCALE: NTS

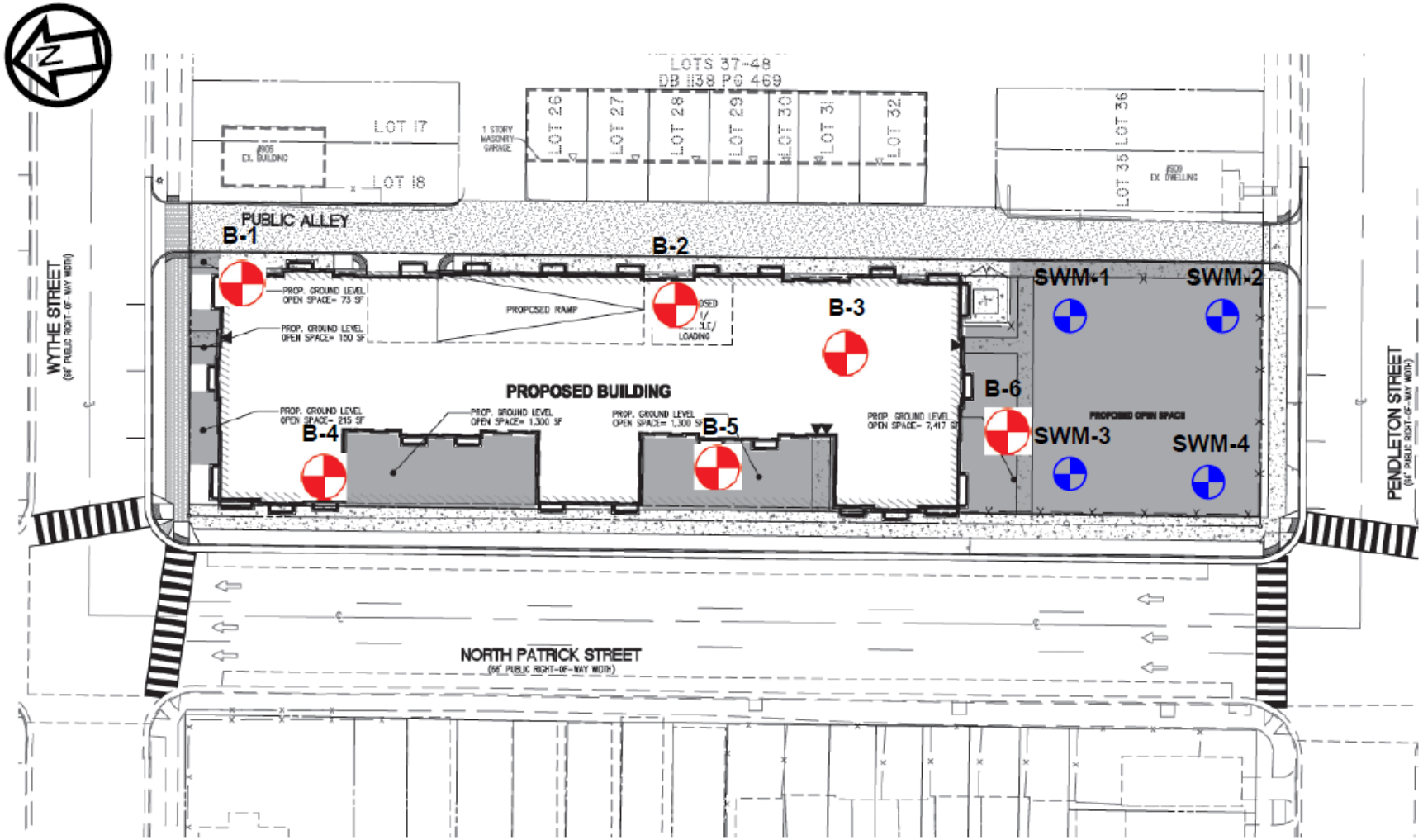
DATE: OCTOBER 3, 2016

SITE LOCATION PLAN

RAMSEY HOMES REDEVELOPMENT ALEXANDRIA, VA

DRAWING NO.

1



KIM ENGINEERING, INC.

11900 Baltimore Avenue Suite F, Beltsville, MD 20705

PROJECT NO.: G16061

SCALE: NTS

DATE: OCTOBER 3, 2016

BORING LOCATION PLAN

RAMSEY HOMES REDEVELOPMENT ALEXANDRIA, VA

DRAWING NO.

2

APPENDIX A

RESULTS OF FIELD TESTING

Records of Soil/Rock Exploration

KIM ENGINEERING

IDENTIFICATION OF SOIL

Soil Classification - ASTM D-2847

Coarse Grained Soils, More than 50% is retained on the No. 200 sieve	**Gravels** - More than 50% of the course fraction is retained on the No. 4 sieve. Coarse = 1" - 3" Medium = 1/2" - 1 " Fine = 1/4" to 1/2"	Clean Gravels <5% Passing No. 200 sieve	GW	Well Graded Gravel
			GP	Poorly Graded Gravel
		Gravels with fines >12% passing No. 200 sieve	GM	Silty Gravel
			GC	Clayey Gravel
	Sands - More than 50% of the coarse fraction passes the No.4 sieve Coarse = No. 10 to No. 4 Medium = No. 10 to No. 40 Fine = No. 40 to No. 200	Clean Sands <5% passing No. 200 sieve	SW	Well Graded Sand
			SP	Poorly Graded Sand
		Sands with fines >12% passing No. 200 sieve	SM	Silty Sand
			SC	Clayey Sand
Fine Grained Soils, More than 50% passes the No. 200 sieve	**Silts and Clays** Liquid Limit of 50 or less Low to medium plasticity	Inorganic	ML	Silt
			CL	Lean Clay
		Organic	OL	Organic silt
				Organin clay
	Silts and Clays Liquid limit of 50 or greater Medium to high plasticity	Inorganic	MH	Elastic silt
			CH	Fat clay
		Organic	OH	Organic silt
				Organic clay
Highly Organic	Primarily Organic matter, dark color, organic odor		PT	Peat

Terminology and Definitions

Portions of Soil Components		
Component Form	Description	Label
Noun	Gravel, Sand, Silt, Clay	50% or more
Adjective	Sandy, Silty, Clayey	35% to 49%
Some	some Sand, some Silt	12% to 34%
Trace	trace Sand, trace Clay	1% to 11%
With	with Sand, with Silt	presence only

Particle Size Identification	
Particle Size	Particle Dimension
Boulder	12" diamter or more
Cobble	3" to 12" diamter
Gravel	1/4" to 3" diamter
Sand	0.005" to 1/4" diamter
Silt/ Clay (fines)	Cannot See Particle

Cohesive Soils		
Field Description	N- Value	Consistency
Easily Molded in Hands	0-3	Very Soft
Easily Pentrated Several inches by thumb	4-5	Soft
Penetrated by thumb with Moderate Effort	6-10	Medium
Penetrated by Thumb with Great Effort	11-30	Stiff
Indented by Thumb with only Great Effort	> 30	Hard

Granular Soils	
N- Values	Relative Density
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
Greater than 50	Very Dense

Fill: Man made deposit of soils, rock and waste material.
Probable Fill: Soils which contain no visually detected foreign matter but which may be man made deposit.
Rock Fragments: Angular Pieces of rock, distinguished from transported gravel, which have seperated from orginal wein or strata and are present in soil matrix.
Disintregrated Rock: Residual rock material with SPT of more than 60 blows per ft. and less than refusal.
Karst: Descriptive term which denotes the potential for solutioning of limestone rock and the development of sink holes.
Alluvium: Recently depositied soils placed by water action, typically stream or river flood plain soils.
Ironite: Iron oxide deposited within a soil layer forming cemented deposits.
Quarts: A hard silica mineral often found in residual soils.
Mica: A soft plate of silica mineral found in many rocks. And in residual or transported soil derived there from.
Layers: 1/2 to 12 inch seam of minor soil component.
Lenses: 0 to 1/2 inch seam of minor soil component.
Pocket: Discontinuous body of minor soil component.

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	B-1
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/5/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/5/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.40	7" of **Topsoil**	0.6		I/D	1 2 5	1	10	(1) Groundwater encountered at 18.5 feet during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, loose to medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	7 9 11	2	16	(2) Drill Rig used: Simco
			5	I/D	5 6 9	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	6 7 6	4	18	
			10	I/D	4 3 4	5	18	
31.00		13.0						
	Light brown, grown, gray, black, red, moist to wet, medium dense to dense silty **SAND** with varying amounts of clay **(SM)**		15	I/D	10 19 22	6	16	
	Layer of medium stiff sandy lean **CLAY (CL)** 23' - 28'		20	I/D	7 7 7	7	16	
			25	I/D	3 3 3	8	18	
			30	I/D	7 7 8	9	18	
9.00			35	I/D	13 20 23	10	16	
	End of Boring at 35 feet		40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	18.0	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	18.0	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	B-2
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/5/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/5/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.40	7" of **Topsoil**	0.6		I/D	1 1 2	1	8	(1) Groundwater encountered at 18.5 feet during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	5 8 10	2	18	(2) Drill Rig used: Simco
			5	I/D	7 8 12	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	7 9 9	4	18	
34.00		10.0	10					
	Light brown, grown, gray, black, red, moist to wet, medium dense to dense silty **SAND** with varying amounts of clay **(SM)**			I/D	6 10 11	5	18	
				I/D	9 8 8	6	18	
			15					
	Layer of stiff sandy lean **CLAY (CL)** 25' - 30'			I/D	4 5 6	7	16	
			20					
				I/D	7 6 6	8	18	
			25					
				I/D	3 7 8	9	18	
			30					
				I/D	11 17 19	10	18	
9.00			35					
	End of Boring at 35 feet							
			40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	18.0	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	19.0	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	B-3
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/5/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/5/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.70	4" of **Topsoil**	0.3		I/D	2 5 8	1	12	(1) Groundwater encountered at 18.5 feet during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, loose to medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	9 13 15	2	18	(2) Drill Rig used: Simco
			5	I/D	8 11 15	3	16	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	6 8 9	4	18	
			10	I/D	4 4 4	5	18	
31.00		13.0						
	Light brown, grown, gray, black, red, moist to wet, loose to dense silty **SAND** with varying amounts of clay **(SM)**		15	I/D	9 9 10	6	18	
	Layer of medium stiff sandy lean **CLAY** **(CL)** 23' - 28'		20	I/D	3 4 6	7	16	
			25	I/D	2 4 3	8	16	
			30	I/D	4 4 3	9	18	
			35	I/D	12 15 18	10	18	
				I/D	13 15 19	11	18	
4.00	End of Boring at 40 feet		40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	18.0	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	18.3	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	B-4
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/4/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/4/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.40	7" of **Topsoil**	0.6		I/D	5 3 2	1	4	(1) Groundwater encountered at 18.5 feet during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, medium dense to dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	7 11 14	2	18	(2) Drill Rig used: Simco
			5	I/D	9 13 19	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	7 10 12	4	18	
34.00		10.0	10					
	Light brown, grown, gray, black, red, moist to wet, loose to medium dense silty **SAND** with varying amounts of clay **(SM)**			I/D	6 5 6	5	18	
				I/D	9 9 7	6	18	
			15					
	Layer of stiff sandy lean **CLAY (CL)** 23' - 28'			I/D	3 2 3	7	18	
			20					
				I/D	6 8 8	8	18	
			25					
				I/D	3 5 4	9	18	
14		30.0	30					
	End of Boring at 30 feet							
			35					
			40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	18.0	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	18.0	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	B-5
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/4/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/4/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.50	6" of **Topsoil**	0.5		I/D	1 1 3	1	10	(1) Groundwater encountered at 18.5 feet during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	7 11 12	2	16	(2) Drill Rig used: Simco
			5	I/D	6 9 12	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	7 9 11	4	18	
			10	I/D	7 6 9	5	18	
31.00		13.0						
	Light brown, grown, gray, black, red, moist to wet, loose to medium dense silty **SAND** with varying amounts of clay **(SM)**		15	I/D	6 8 10	6	16	
	Layer of medium stiff sandy lean **CLAY (CL)** 23' - 25'		20	I/D	6 5 6	7	18	
			25	I/D	5 4 5	8	16	
			30	I/D	2 3 4	9	18	
			35	I/D	7 8 7	10	18	
4.00	End of Boring at 40 feet		40	I/D	8 10 10	11	18	

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	18.0	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	19.0	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	B-6
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/4/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/4/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.50	6" of **Topsoil**	0.5		I/D	1 3 2	1	12	(1) Groundwater encountered at 18.5 feet during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, loose to medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	6 8 10	2	18	(2) Drill Rig used: Simco
			5	I/D	7 11 12	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	7 9 12	4	18	
			10	I/D	2 4 3	5	18	
31.00		13.0						
	Light brown, grown, gray, black, red, moist to wet, loose to medium dense silty **SAND** with varying amounts of clay **(SM)**		15	I/D	6 11 13	6	16	
	Layer of medium stiff sandy lean **CLAY (CL)** 23' - 28'		20	I/D	2 3 4	7	16	
			25	I/D	2 3 3	8	16	
			30	I/D	3 3 3	9	18	
			35	I/D	13 13 15	10	18	
4.00	End of Boring at 40 feet		40	I/D	10 10 13	11	18	

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	18.0	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT		FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	SWM-1
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/3/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/3/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE BLOWS / 6"	SAMPLE NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.60	5" of **Topsoil**	0.4		I/D	1 2 4	1	10	(1) No groundwater encountered during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	7 9 10	2	16	(2) Drill Rig used: Simco
			5	I/D	7 9 13	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	7 9 11	4	18	
			10	I/D	6 7 8	5	16	
				I/D	3 5 9	6	18	
29.00		15.0	15					
	End of Boring at 15 feet							
			20					
			25					
			30					
			35					
			40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	Dry	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	9.5	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	SWM-2
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	43 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/3/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/3/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE BLOWS / 6"	SAMPLE NO.	REC. in.	BORING & SAMPLING NOTES
43.00	SURFACE	0.0	0					
42.50	6" of **Topsoil**	0.5		I/D	1 2 7	1	10	(1) No groundwater encountered during drilling.
41.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	10 14 15	2	16	(2) Drill Rig used: Simco
			5	I/D	10 13 15	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	10 11 14	4	18	
			10	I/D	8 8 10	5	16	
				I/D	5 5 6	6	18	
28.00		15.0	15					
	End of Boring at 15 feet							
			20					
			25					
			30					
			35					
			40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	Dry	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	8.0	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	SWM-3
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	44 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/3/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/3/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
44.00	SURFACE	0.0	0					
43.60	5" of **Topsoil**	0.4		I/D	2 5 3	1	8	(1) No groundwater encountered during drilling.
42.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, loose to dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	7 7 8	2	10	(2) Drill Rig used: Simco
			5	I/D	8 14 19	3	16	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	12 14 18	4	18	
			10	I/D	10 10 11	5	12	
				I/D	4 4 6	6	16	
29.00		15.0	15					
	End of Boring at 15 feet							
			20					
			25					
			30					
			35					
			40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	Dry	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	8.8	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

KIM ENGINEERING

RECORD OF SOIL EXPLORATION

Project Name	Ramsey Homes Redevelopment	Boring #	SWM-4
Location	Alexandria, VA	Job #	G16061

SAMPLER

Datum	MSL	Hammer Wt.	140 Lbs.	Hole Diameter	8"	Foreman	WS
Surf. Elev.	43 ft ±	Hammer Drop	30 Inches	Rock Core Dia.	N.A.	Inspector	DS
Date Started	10/3/2016	Spoon Size	2 Inches	Boring Method	HSA	Date Complete	10/3/2016

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	BLOWS / 6"	NO.	REC. in.	BORING & SAMPLING NOTES
43.00	SURFACE	0.0	0					
42.50	6" of **Topsoil**	0.5		I/D	2 1 3	1	4	(1) No groundwater encountered during drilling.
41.00	**FILL** (Silty Clayey **SAND**)	2.0						
	Light brown, grown, gray, moist, medium dense clayey **SAND** with varying amounts of silt **(SC)**			I/D	5 7 9	2	18	(2) Drill Rig used: Simco
			5	I/D	7 8 11	3	18	(3) Test boring backfilled with auger cuttings and surface restored in kind.
				I/D	7 7 7	4	18	
			10	I/D	5 6 9	5	18	
				I/D	5 5 9	6	18	
28.00		15.0	15					
	End of Boring at 15 feet							
			20					
			25					
			30					
			35					
			40					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH			BORING METHOD
DRIVEN SPLIT SPOON UN-	D-DISINTEGRATED	AT Completion	Dry	FT.	HSA-HOLLOW STEM AUGERS
LESS OTHERWISE NOTED	I-INTACT	AFTER		HR.	CFA-CONT. FLIGHT AUGERS
PT - PRESSED SHELBY TUBE	U-UNDISTURBED			FT.	DC-DRIVING CASING
CA - CONT. FLIGHT AUGER	L-LOST	CAVED AT	8.3	FT.	MD-MUD DRILLING
RC - ROCK CORE					

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

FIELD INFILTRATION TEST RESULTS

FIELD INFILTRATION TEST RESULT

1st Hour Run		2nd Hour Run		3rd Hour Run		4th Hour Run	
Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)
0 min	9.00	0 min	9.00	0 min	9.00	0 min	9.00
10 mins		10 mins		10 mins		15 mins	
30 mins		30 mins		30 mins		30 mins	
45 mins		45 mins		45 mins		45 mins	
60 mins	9.42	60 mins	9.33	60 mins	9.33	60 mins	9.33

Rates (ft.)	0.42	0.33	0.33	0.33

Average Infiltration Rate **= 4.23 inch/hr**

Test Boring Number: SWM-1 Test Depth: 11.0 feet Test Elevation: 33.00 feet

KIM ENGINEERING, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Project No.: G16061

DATE: 10/4/2016

Ramsey Homes Redevelopment
Alexandria, VA

FIELD INFILTRATION TEST RESULT

1st Hour Run		2nd Hour Run		3rd Hour Run		4th Hour Run	
Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)
0 min	8.00	0 min	8.00	0 min	8.00	0 min	8.00
10 mins		10 mins		10 mins		15 mins	
30 mins		30 mins		30 mins		30 mins	
45 mins		45 mins		45 mins		45 mins	
60 mins	9.25	60 mins	9.08	60 mins	8.92	60 mins	8.92

Rates (ft.)	1.25	1.08	0.92	0.92

Average Infiltration Rate **= 12.51 inch/hr**

Test Boring Number: SWM-2 Test Depth: 10.0 feet Test Elevation: 33.00 feet

KIM ENGINEERING, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Project No.: G16061

DATE: 10/4/2016

Ramsey Homes Redevelopment
Alexandria, VA

FIELD INFILTRATION TEST RESULT

1st Hour Run		2nd Hour Run		3rd Hour Run		4th Hour Run	
Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)
0 min	9.00	0 min	9.00	0 min	9.00	0 min	9.00
10 mins		10 mins		10 mins		15 mins	
30 mins		30 mins		30 mins		30 mins	
45 mins		45 mins		45 mins		45 mins	
60 mins	9.50	60 mins	9.33	60 mins	9.33	60 mins	9.33

Rates (ft.)	0.50	0.33	0.33	0.33

Average Infiltration Rate **= 4.47 inch/hr**

Test Boring Number: SWM-3 Test Depth: 11.0 feet Test Elevation: 33.00 feet

KIM ENGINEERING, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Project No.: G16061

DATE: 10/4/2016

Ramsey Homes Redevelopment
Alexandria, VA

FIELD INFILTRATION TEST RESULT

1st Hour Run		2nd Hour Run		3rd Hour Run		4th Hour Run	
Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)	Time	Depth (ft)
0 min	8.00	0 min	8.00	0 min	8.00	0 min	8.00
10 mins		10 mins		10 mins		15 mins	
30 mins		30 mins		30 mins		30 mins	
45 mins		45 mins		45 mins		45 mins	
60 mins	8.83	60 mins	8.33	60 mins	8.17	60 mins	8.17

Rates (ft.)	0.83	0.33	0.17	0.17

Average Infiltration Rate **=** **4.50** **inch/hr**

Test Boring Number: SWM-4 Test Depth: 10.0 feet Test Elevation: 33.00 feet

KIM ENGINEERING, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Project No.: G16061

DATE: 10/4/2016

Ramsey Homes Redevelopment
Alexandria, VA

APPENDIX B

LABORATORY TEST RESULTS

Moisture Content

KIM ENGINEERING, INC.

Moisture Content Determination

Project Name:	Ramsey Homes Redevelopment	**Tested By:**	Marco & Vum
Project No.:	G16061	**Tested Date:**	10/17/2016

Boring No.	**B-1**		
Depth	**5.0-6.5**	**10.0-11.5**	**18.5-20.0**
Sample No.	**S-3**	**S-5**	**S-7**
Wt. (wet+tare)	34.23	36.08	37.29
Wt. (dry+tare)	30.68	32.75	32.41
Wt. (tare)	13.13	13.53	12.60
Wt. (water)	3.55	3.33	4.88
Wt. (dry)	17.55	19.22	19.81
Moisture Content	**20.2**	**17.3**	**24.6**

Boring No.	**B-2**		
Depth	**13.5-15.0**	**23.5-25.0**	**33.5-35.0**
Sample No.	**S-6**	**S-8**	**S-10**
Wt. (wet+tare)	38.11	35.44	38.30
Wt. (dry+tare)	34.83	32.16	34.12
Wt. (tare)	12.40	13.37	13.35
Wt. (water)	3.28	3.28	4.18
Wt. (dry)	22.43	18.79	20.77
Moisture Content	**14.6**	**17.5**	**20.1**

Boring No.	**B-3**	
Depth	**5.0-6.5**	**23.5-25.0**
Sample No.	**S-3**	**S-8**
Wt. (wet+tare)	39.45	33.37
Wt. (dry+tare)	34.77	30.48
Wt. (tare)	13.71	13.37
Wt. (water)	4.68	2.89
Wt. (dry)	21.06	17.11
Moisture Content	**22.2**	**16.9**

KIM ENGINEERING, INC.

Moisture Content Determination

Project Name:	Ramsey Homes Redevelopment	**Tested By:**	Marco & Vum
Project No.:	G16061	**Tested Date:**	10/17/2016

Boring No.	**B-4**		
Depth	**7.5-9.0**	**13.5-15.0**	**28.5-30.0**
Sample No.	**S-4**	**S-6**	**S-9**
Wt. (wet+tare)	35.31	36.01	35.81
Wt. (dry+tare)	31.44	34.72	31.81
Wt. (tare)	12.49	12.46	13.53
Wt. (water)	3.87	1.29	4.00
Wt. (dry)	18.95	22.26	18.28
Moisture Content	**20.4**	**5.8**	**21.9**

Boring No.	**B-5**	
Depth	**5.0-6.5**	**7.5-9.0**
Sample No.	**S-3**	**S-4**
Wt. (wet+tare)	33.65	32.16
Wt. (dry+tare)	30.51	28.94
Wt. (tare)	13.59	12.95
Wt. (water)	3.14	3.22
Wt. (dry)	16.92	15.99
Moisture Content	**18.6**	**20.1**

Boring No.	**B-6**	
Depth	**2.5-4.0**	**18.5-20.0**
Sample No.	**S-2**	**S-7**
Wt. (wet+tare)	36.59	35.98
Wt. (dry+tare)	32.45	31.59
Wt. (tare)	12.31	12.39
Wt. (water)	4.14	4.39
Wt. (dry)	20.14	19.20
Moisture Content	**20.6**	**22.9**

KIM ENGINEERING, INC.

Moisture Content Determination

Project Name:	Ramsey Homes Redevelopment	**Tested By:**	Marco & Vum
Project No.:	G16061	**Tested Date:**	10/17/2016

Boring No.	**SWM-1**
Depth	**13.5-15.0**
Sample No.	**S-6**
Wt. (wet+tare)	39.94
Wt. (dry+tare)	35.55
Wt. (tare)	13.38
Wt. (water)	4.39
Wt. (dry)	22.17
Moisture Content	**19.8**

Boring No.	**SWM-2**
Depth	**13.5-15.0**
Sample No.	**S-6**
Wt. (wet+tare)	39.81
Wt. (dry+tare)	36.66
Wt. (tare)	12.41
Wt. (water)	3.15
Wt. (dry)	24.25
Moisture Content	**13.0**

Boring No.	**SWM-3**
Depth	**13.5-15.0**
Sample No.	**S-6**
Wt. (wet+tare)	36.46
Wt. (dry+tare)	33.44
Wt. (tare)	12.81
Wt. (water)	3.02
Wt. (dry)	20.63
Moisture Content	**14.6**

KIM ENGINEERING, INC.

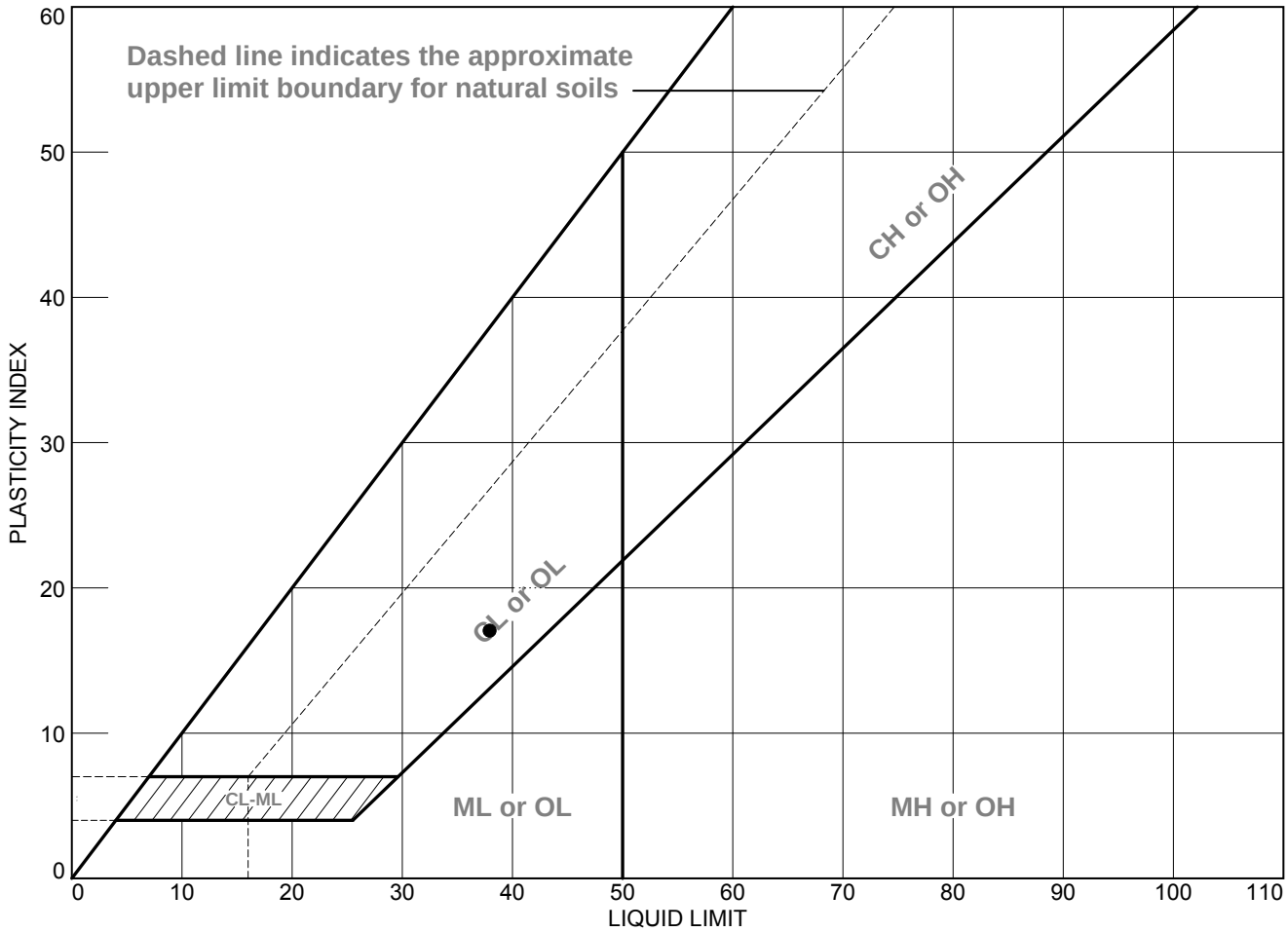
Moisture Content Determination

Project Name:	Ramsey Homes Redevelopment	**Tested By:**	Marco & Vum
Project No.:	G16061	**Tested Date:**	10/17/2016

Boring No.	**SWM-4**
Depth	**13.5-15.0**
Sample No.	**S-6**
Wt. (wet+tare)	35.43
Wt. (dry+tare)	32.95
Wt. (tare)	13.36
Wt. (water)	2.48
Wt. (dry)	19.59
Moisture Content	**12.7**

Atterberg Limits

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-1	S-3	5.0 - 6.5 ft	20.2	21	38	17	SC

KIM ENGINEERING, INC.

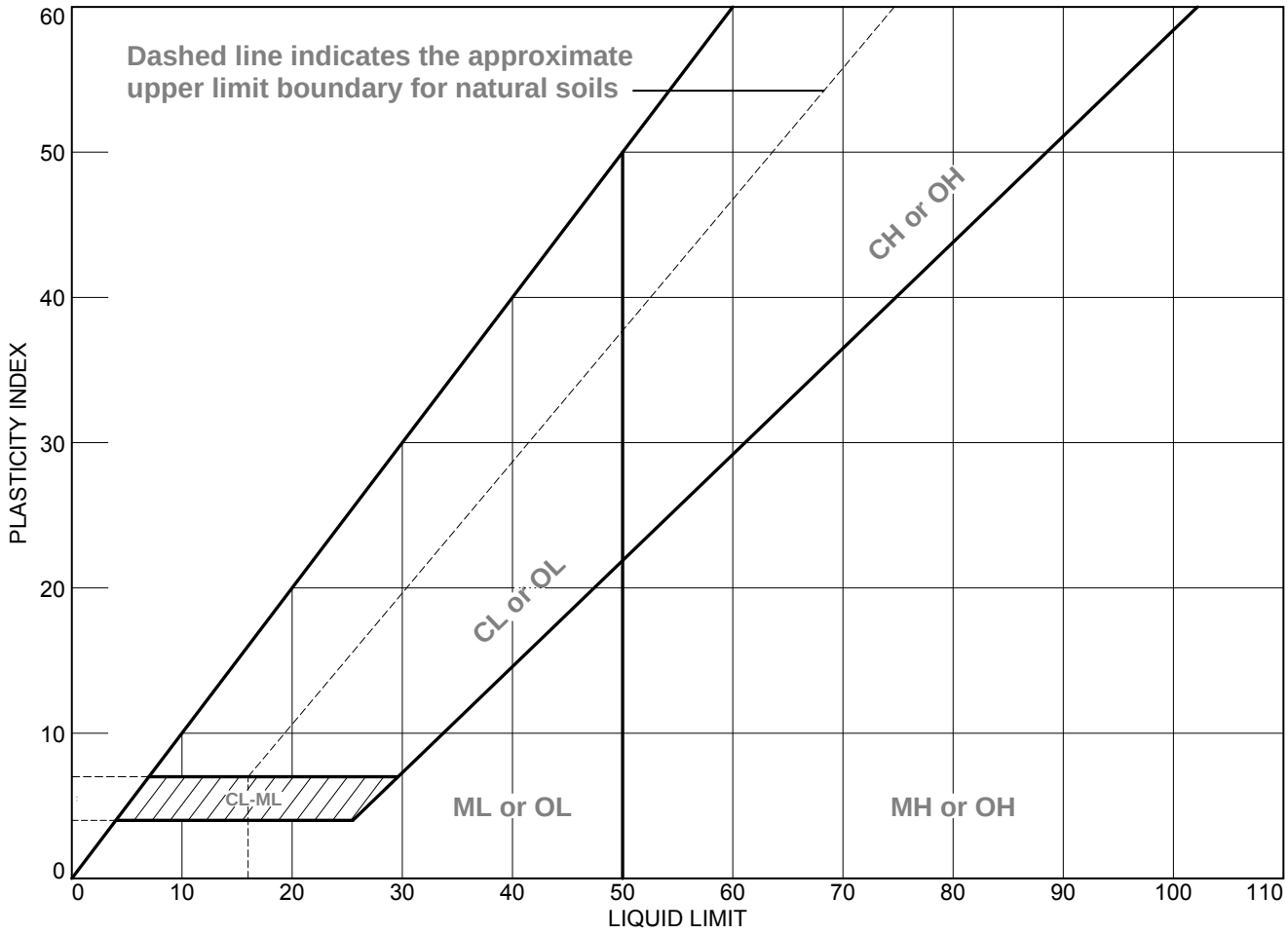
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2	S-6	13.5 - 15.0 ft	14.6	NP	NV	NP	SM

KIM ENGINEERING, INC.

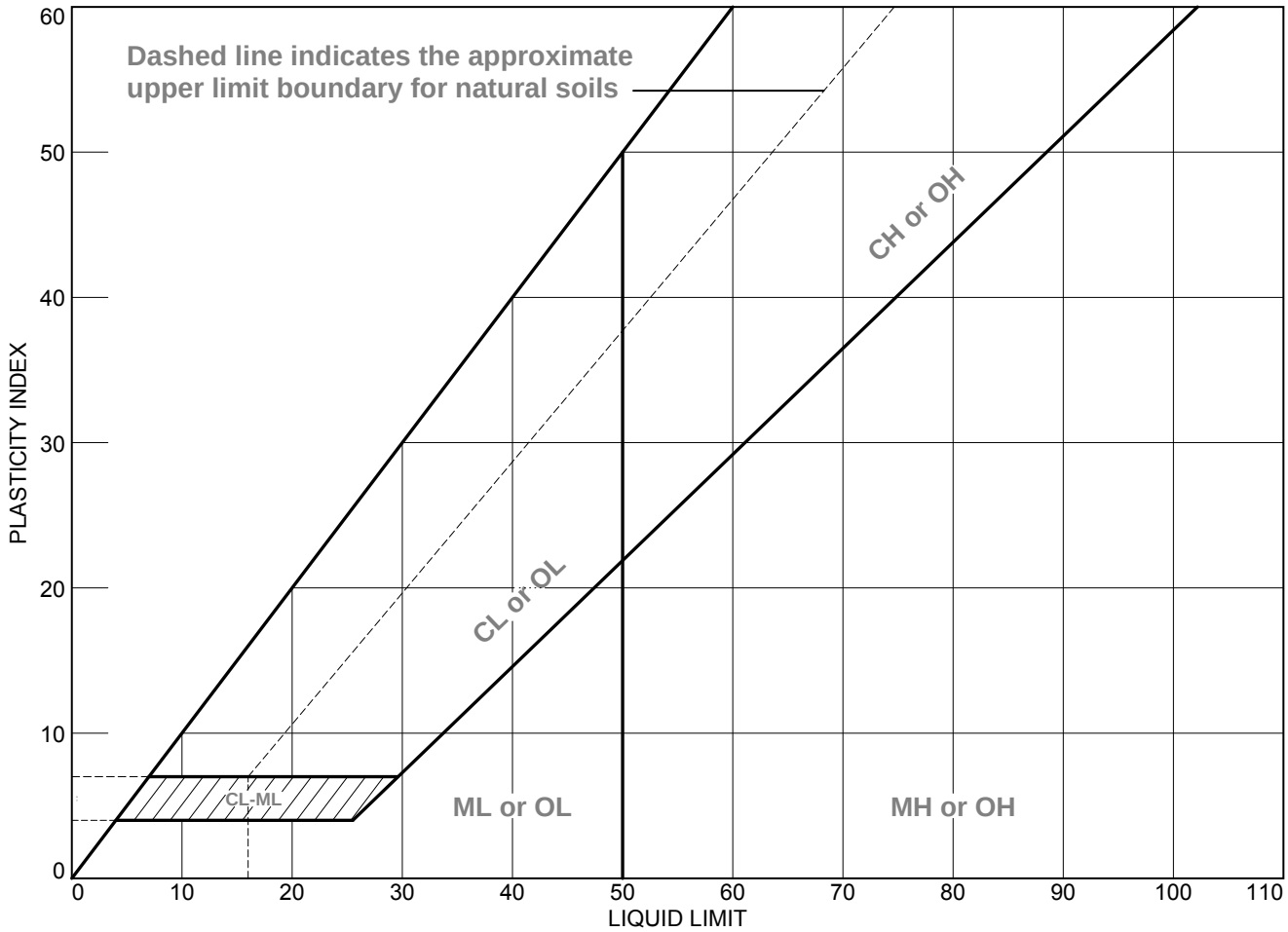
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-4	S-6	13.5 - 15.0 ft	5.8	NP	NV	NP	SM

KIM ENGINEERING, INC.

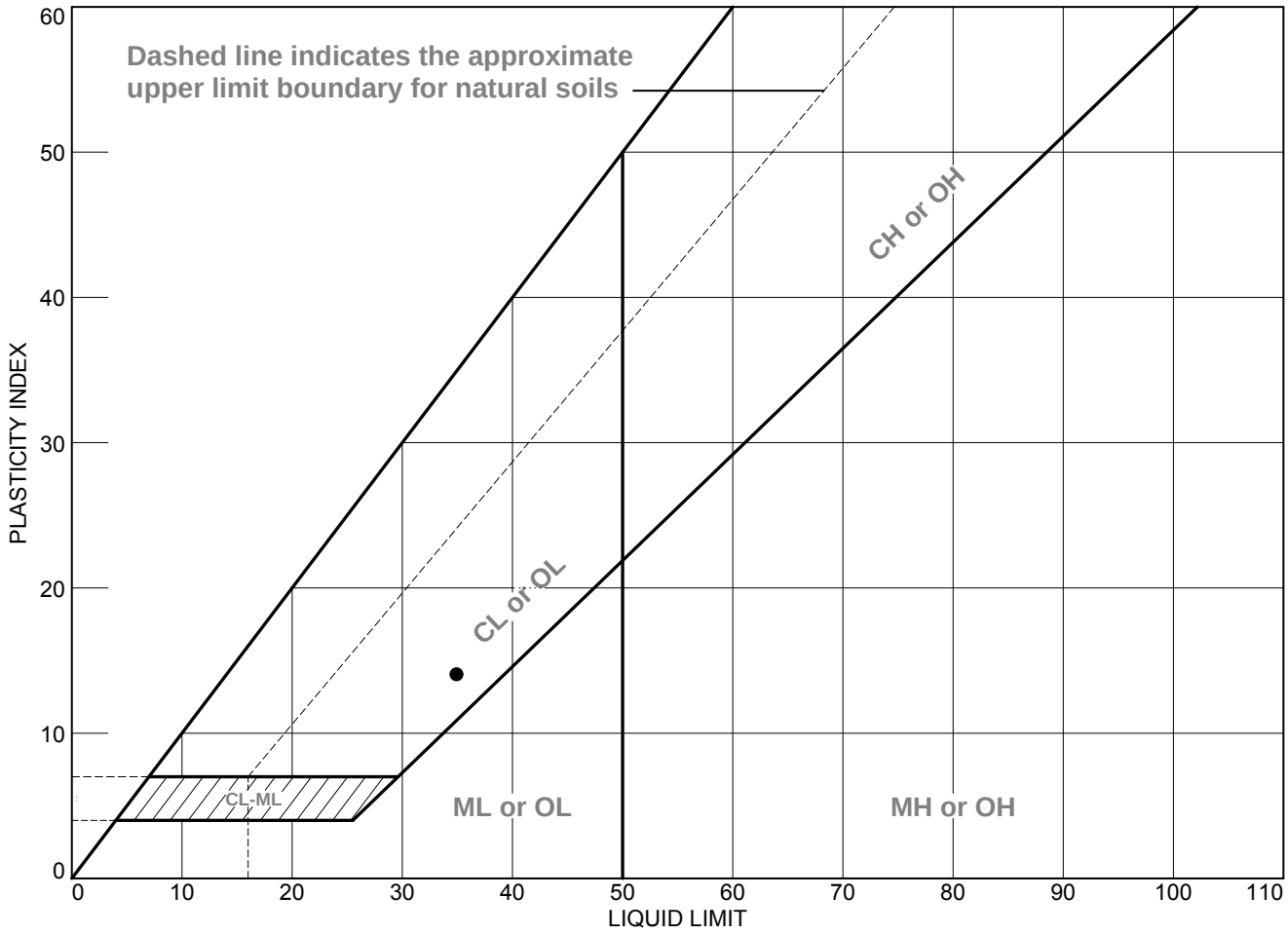
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-5	S-3	5.0 - 6.5 ft	18.6	21	35	14	SC

KIM ENGINEERING, INC.

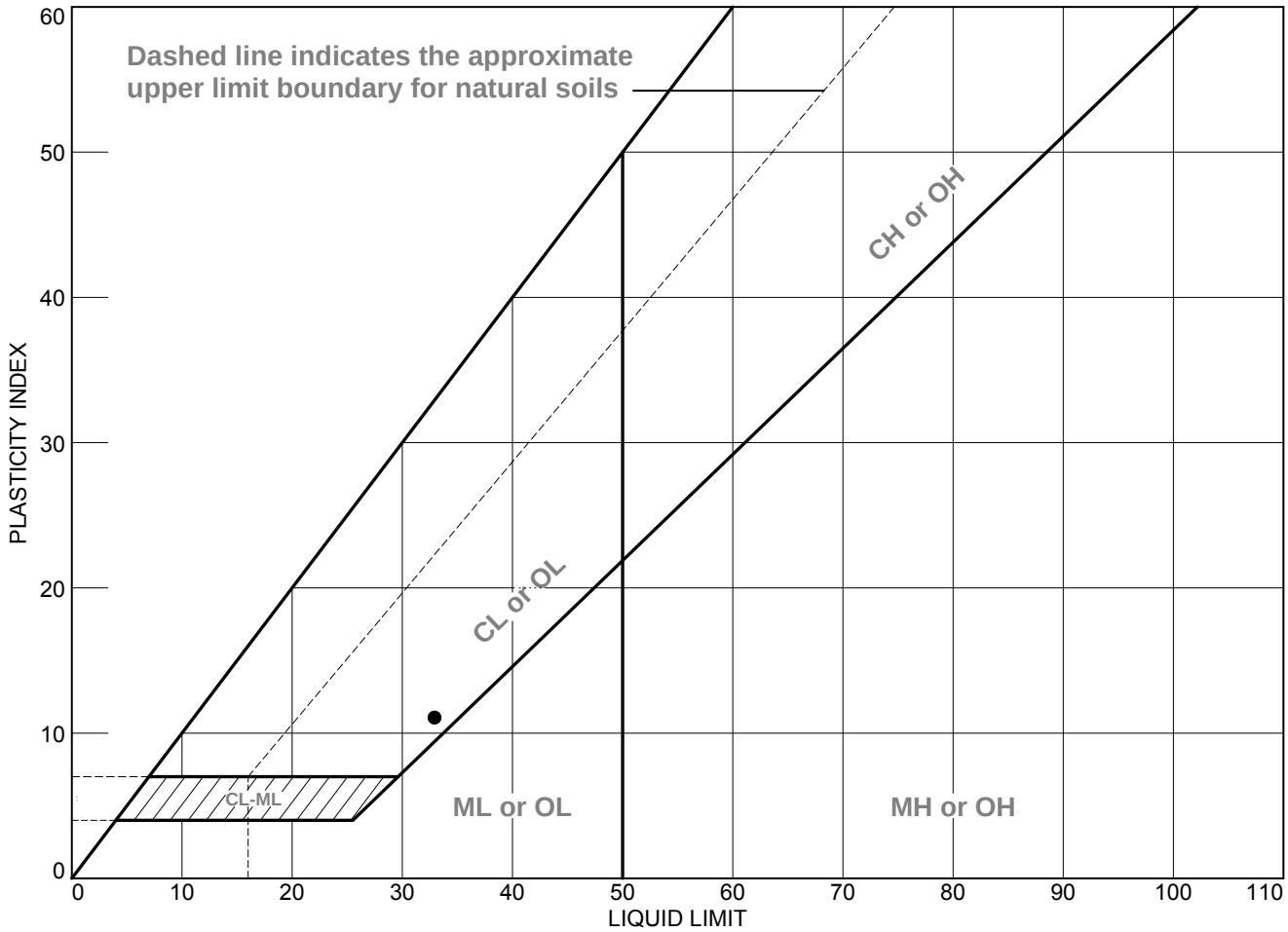
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	SWM-1	S-6	13.5 - 15.0 ft	19.8	22	33	11	SC

KIM ENGINEERING, INC.

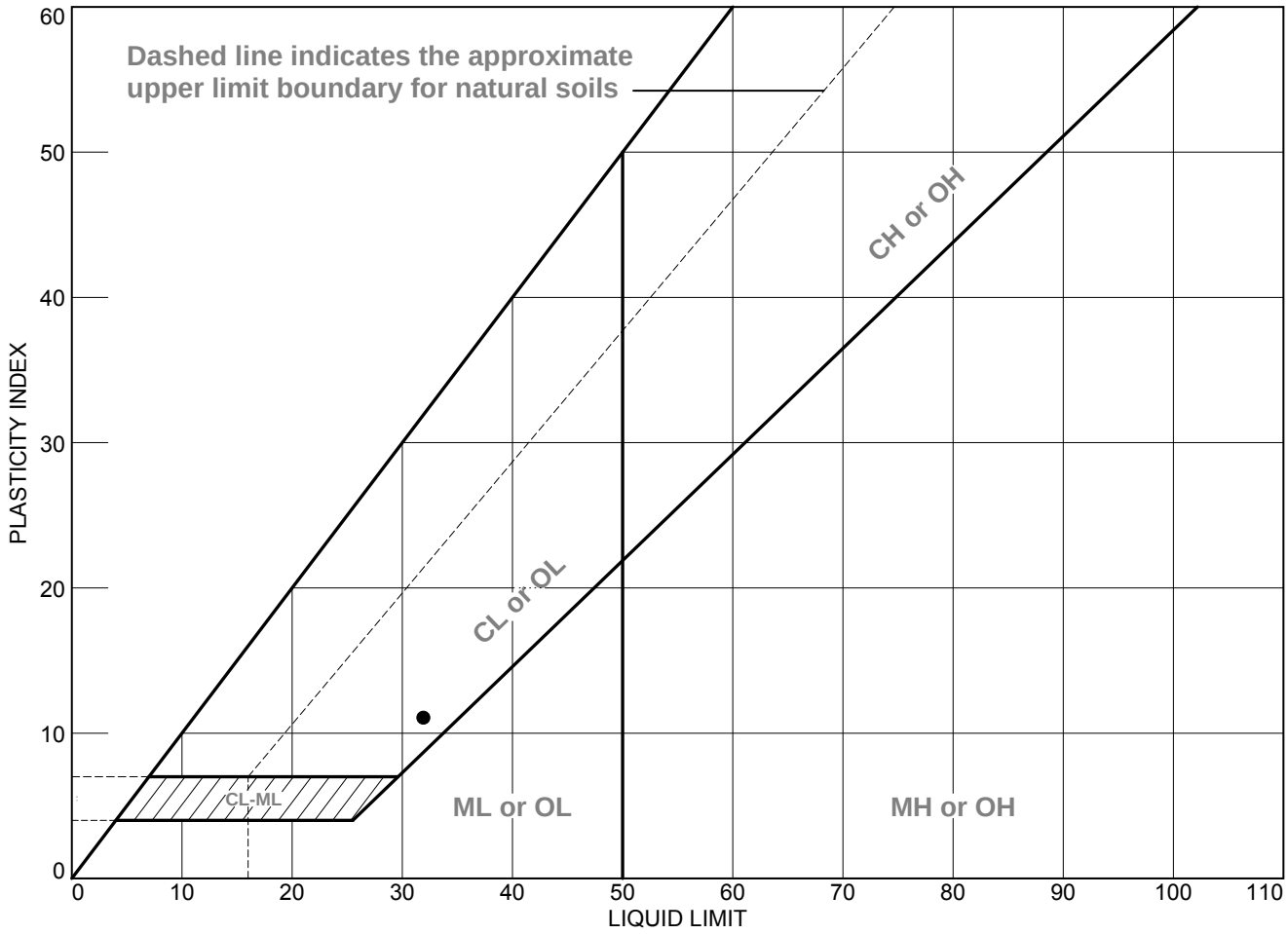
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	SWM-2	S-6	13.5 - 15.0 ft	13.0	21	32	11	SC

KIM ENGINEERING, INC.

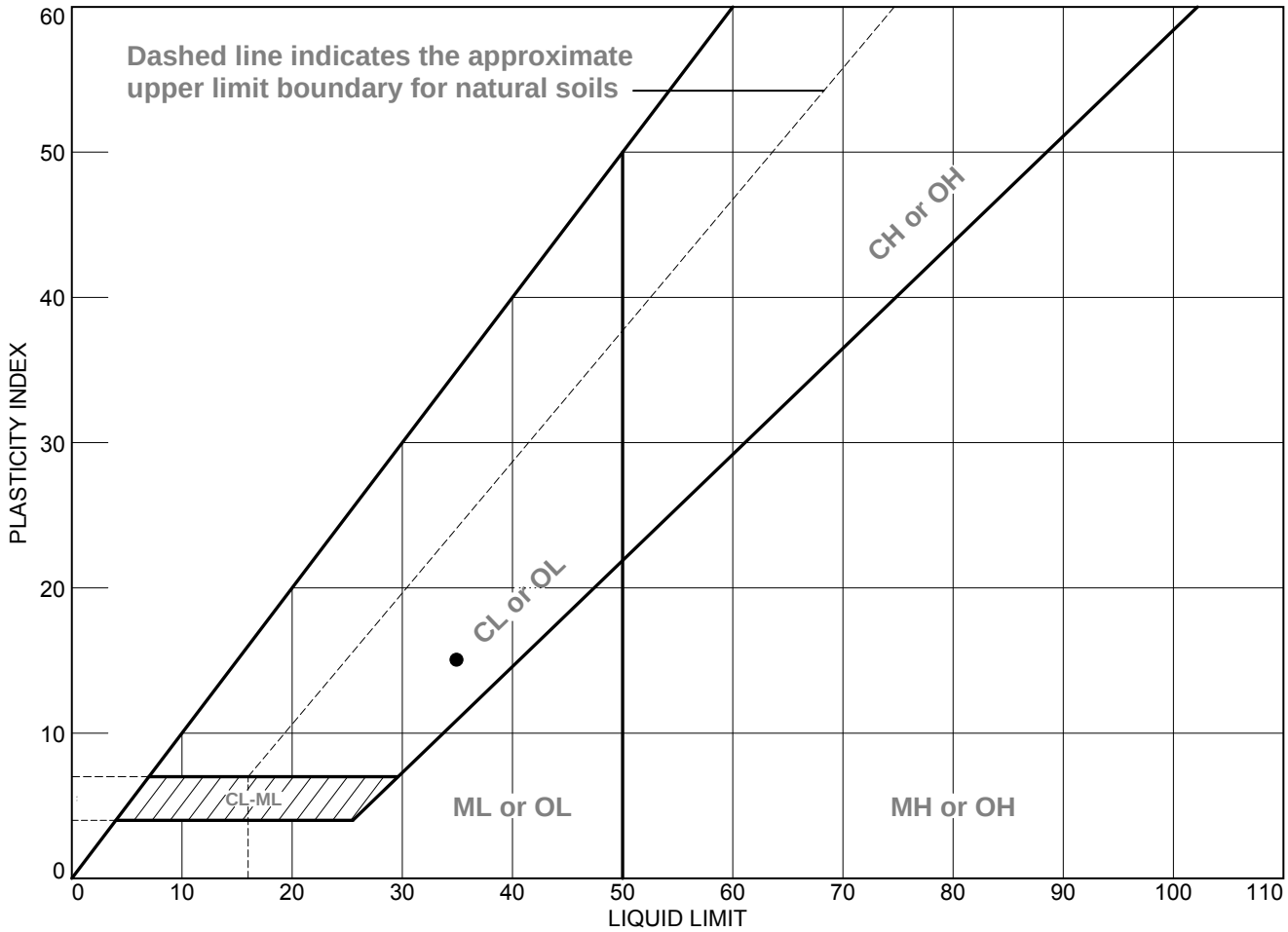
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	SWM-3	S-6	13.5 - 15.0 ft	14.6	20	35	15	SC

KIM ENGINEERING, INC.

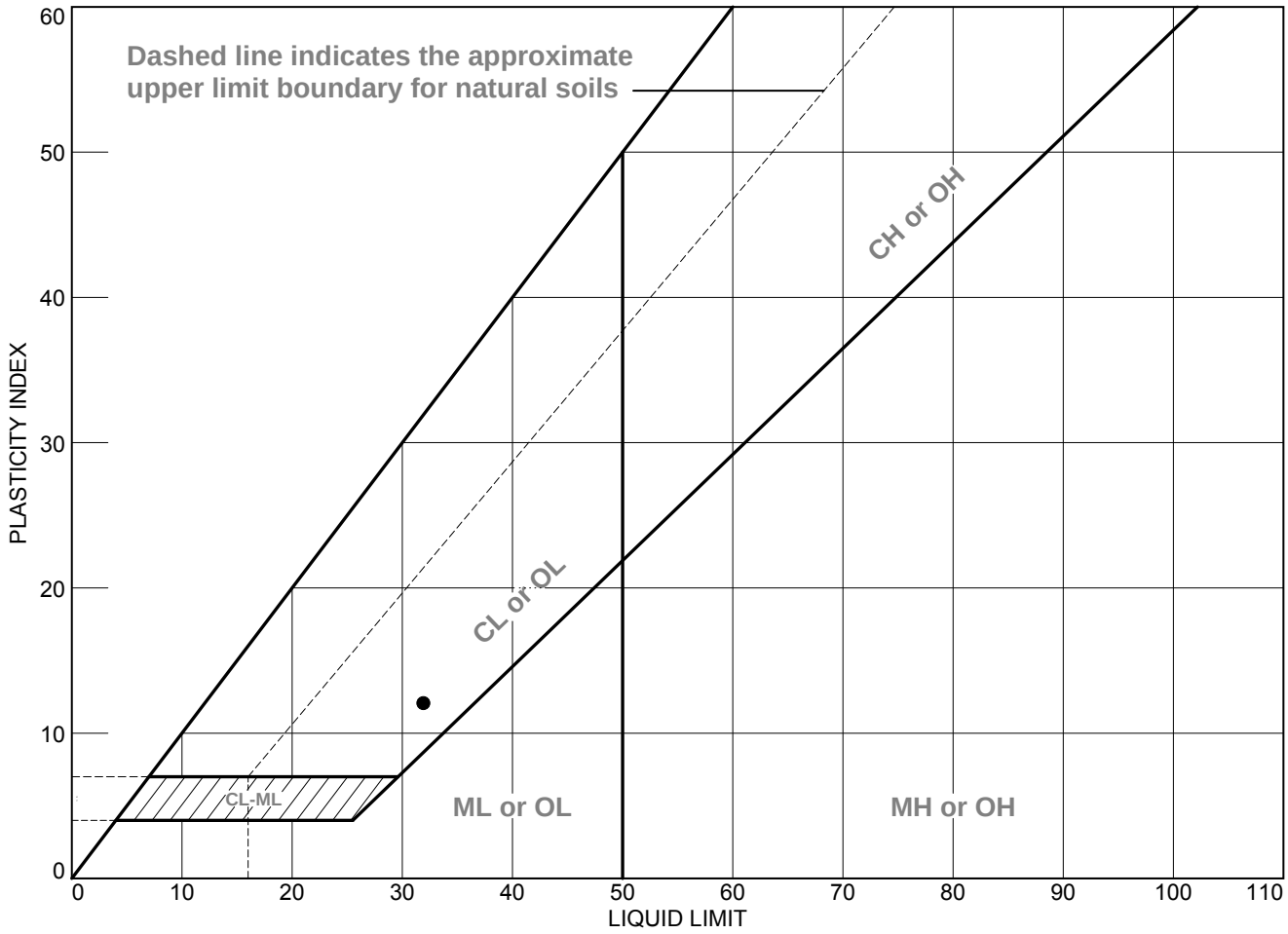
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	SWM-4	S-6	13.5 - 15.0 ft	12.7	20	32	12	SC

KIM ENGINEERING, INC.

Gaithersburg, MD

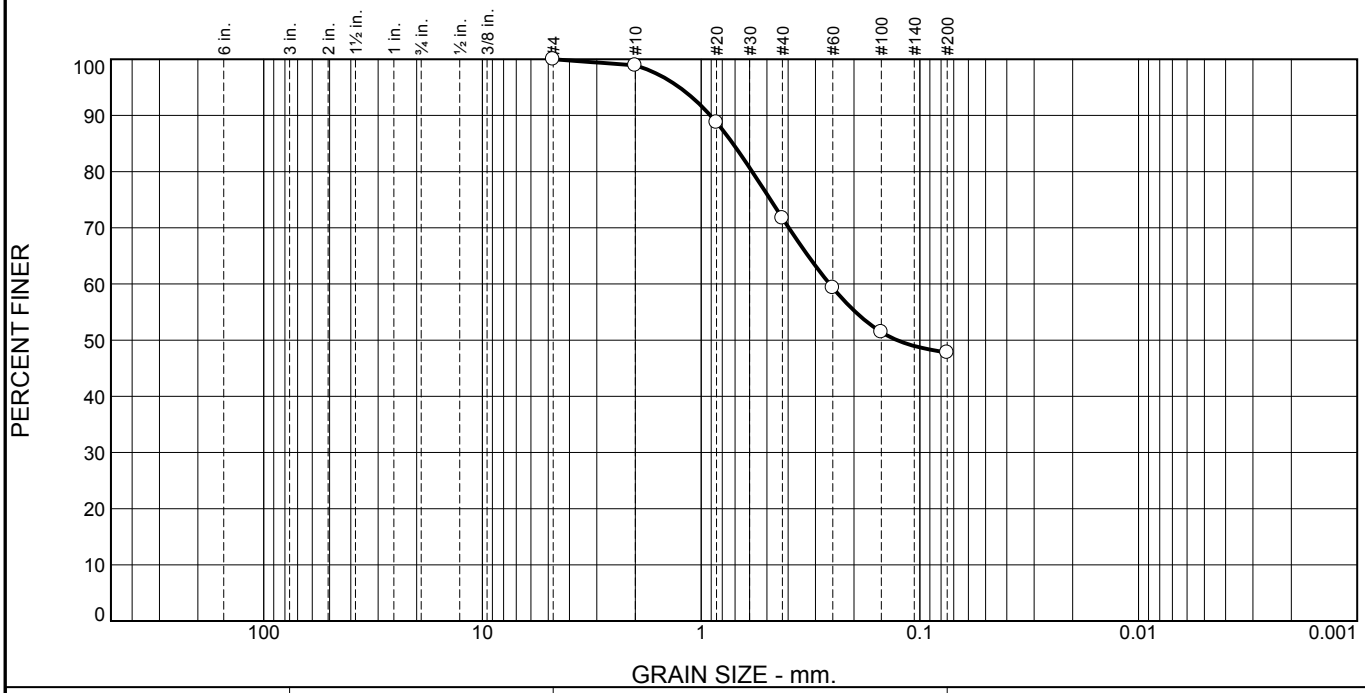
Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No.: G16061 **Figure**

Tested By: MH

Grain Size Distribution Analysis Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	27.2	23.9	47.8	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	98.9		
#20	88.7		
#40	71.7		
#60	59.3		
#100	51.4		
#200	47.8		

* (no specification provided)

Material Description

clayey sand (SC)

Atterberg Limits (ASTM D 4318)

PL= 21 **LL=** 38 **PI=** 17

Classification

USCS (D 2487)= SC **AASHTO (M 145)=** A-6(5)

Coefficients

D_{90}= 0.9068 D_{85}= 0.7157 D_{60}= 0.2585
D_{50}= 0.1270 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Tested on 10-17-16

Date Received: 10-5-16 **Date Tested:** 10-17-16
Tested By: MH
Checked By: CH
Title:

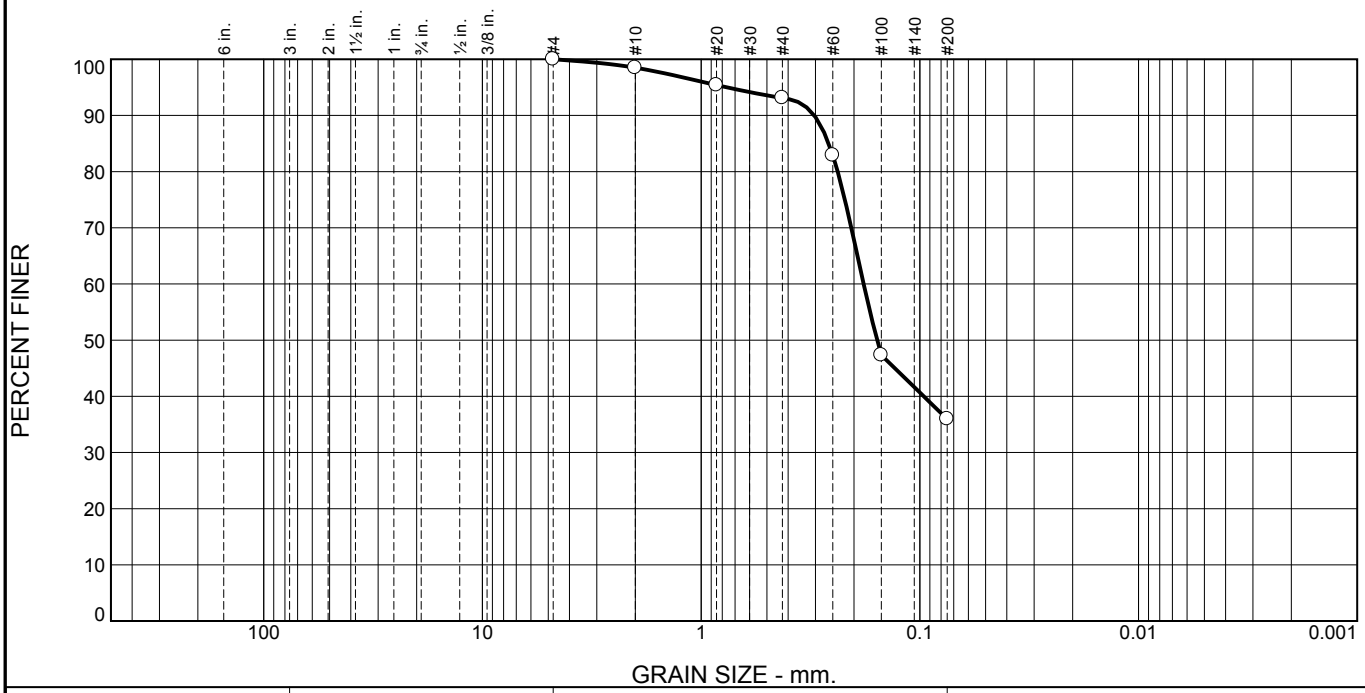
Source of Sample: B-1 **Depth:** 5.0 - 6.5 ft **Date Sampled:** 10-5-16
Sample Number: S-3

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.5	5.4	57.1	36.0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	98.5		
#20	95.4		
#40	93.1		
#60	82.9		
#100	47.3		
#200	36.0		

* (no specification provided)

Material Description

silty sand (SM)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.3039 D_{85}= 0.2609 D_{60}= 0.1806
D_{50}= 0.1568 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Tested on 10-17-16

Date Received: 10-5-16 **Date Tested:** 10-17-16
Tested By: MH
Checked By: CH
Title:

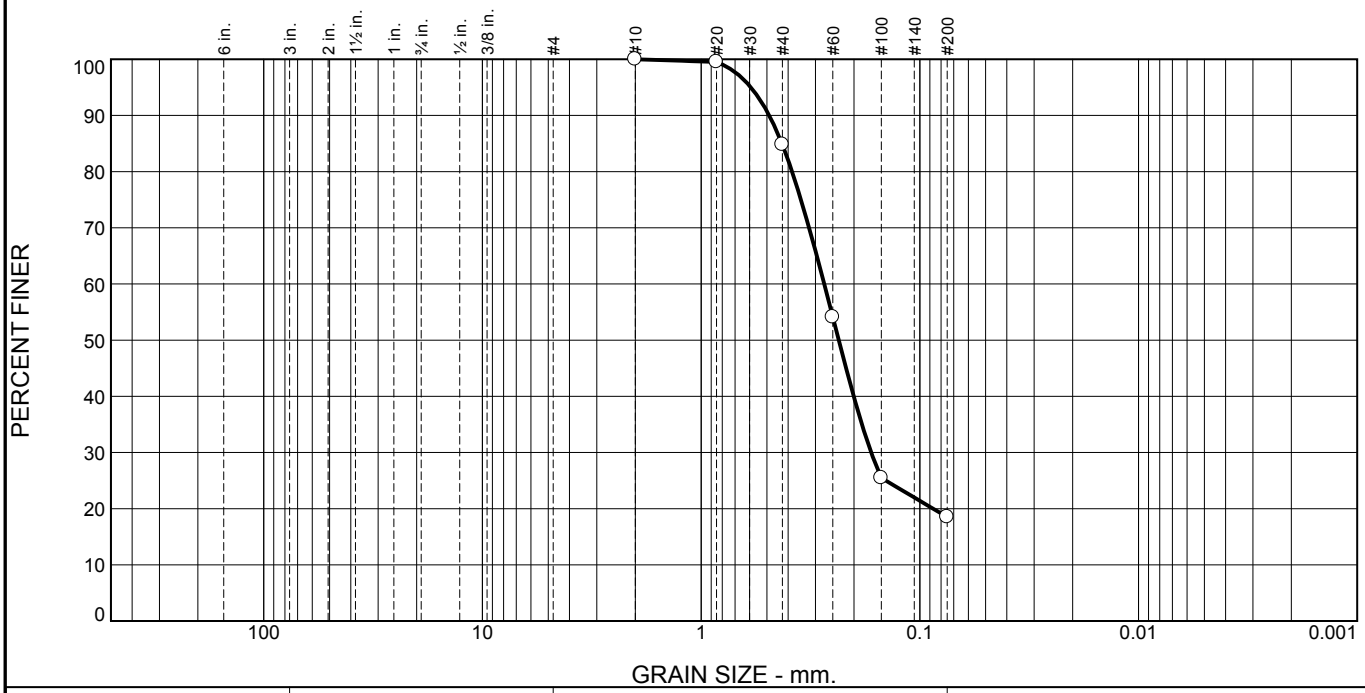
Source of Sample: B-2 **Depth:** 13.5 - 15.0 ft **Date Sampled:** 10-5-16
Sample Number: S-6

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.2	66.3	18.5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#10	100.0		
#20	99.5		
#40	84.8		
#60	54.1		
#100	25.5		
#200	18.5		

* (no specification provided)

Material Description

silty sand (SM)

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-2-4(0)

Coefficients

D_{90}= 0.4883 D_{85}= 0.4270 D_{60}= 0.2736
D_{50}= 0.2348 D_{30}= 0.1669 D_{15}=
D_{10}= C_u= C_c=

Remarks

Tested on 10-17-16

Date Received: 10-4-16 **Date Tested:** 10-17-16

Tested By: MH

Checked By: CH

Title:

Source of Sample: B-4 **Depth:** 13.5 - 15.0 ft **Date Sampled:** 10-4-16
Sample Number: S-6

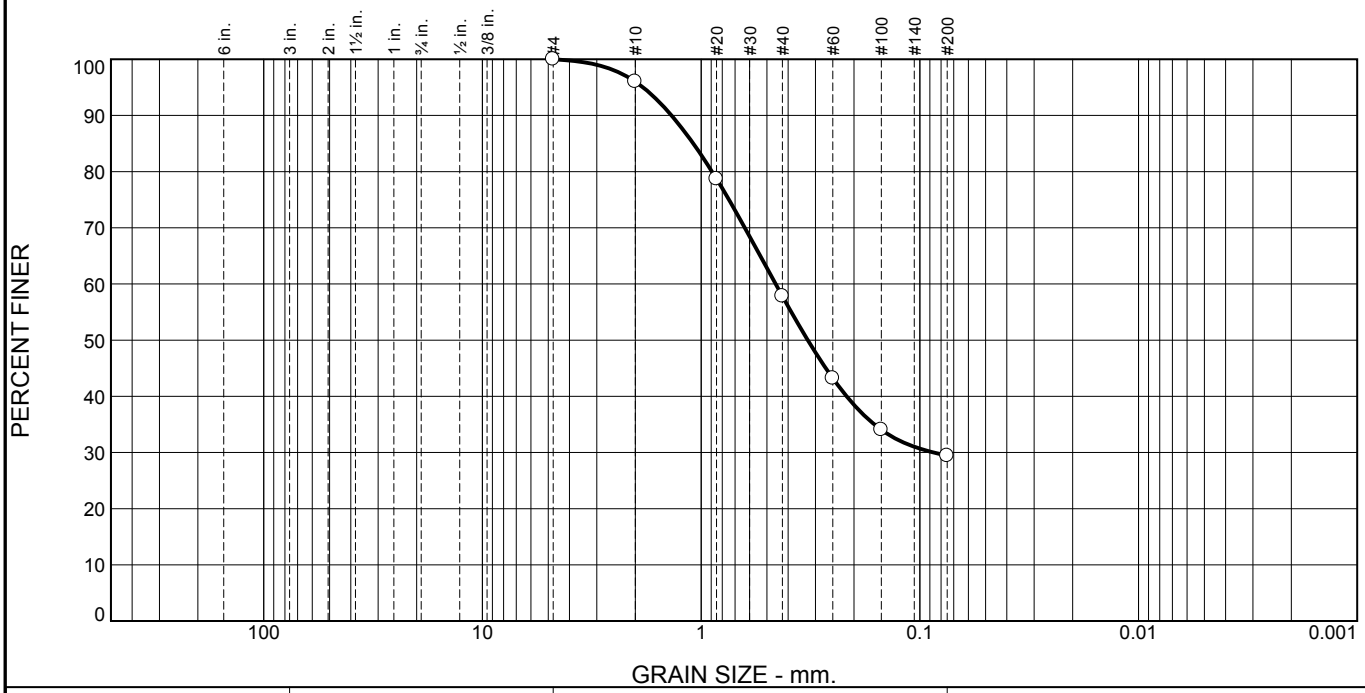
KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	4.0	38.2	28.4	29.4	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	96.0		
#20	78.7		
#40	57.8		
#60	43.2		
#100	34.0		
#200	29.4		

* (no specification provided)

Material Description

clayey sand (SC)

Atterberg Limits (ASTM D 4318)

PL= 21 **LL=** 35 **PI=** 14

Classification

USCS (D 2487)= SC **AASHTO (M 145)=** A-2-6(1)

Coefficients

D_{90}= 1.3656 D_{85}= 1.0860 D_{60}= 0.4563
D_{50}= 0.3253 D_{30}= 0.0865 D_{15}=
D_{10}= C_u= C_c=

Remarks

Tested on 10-17-16

Date Received: 10-4-16 **Date Tested:** 10-17-16
Tested By: MH
Checked By: CH
Title:

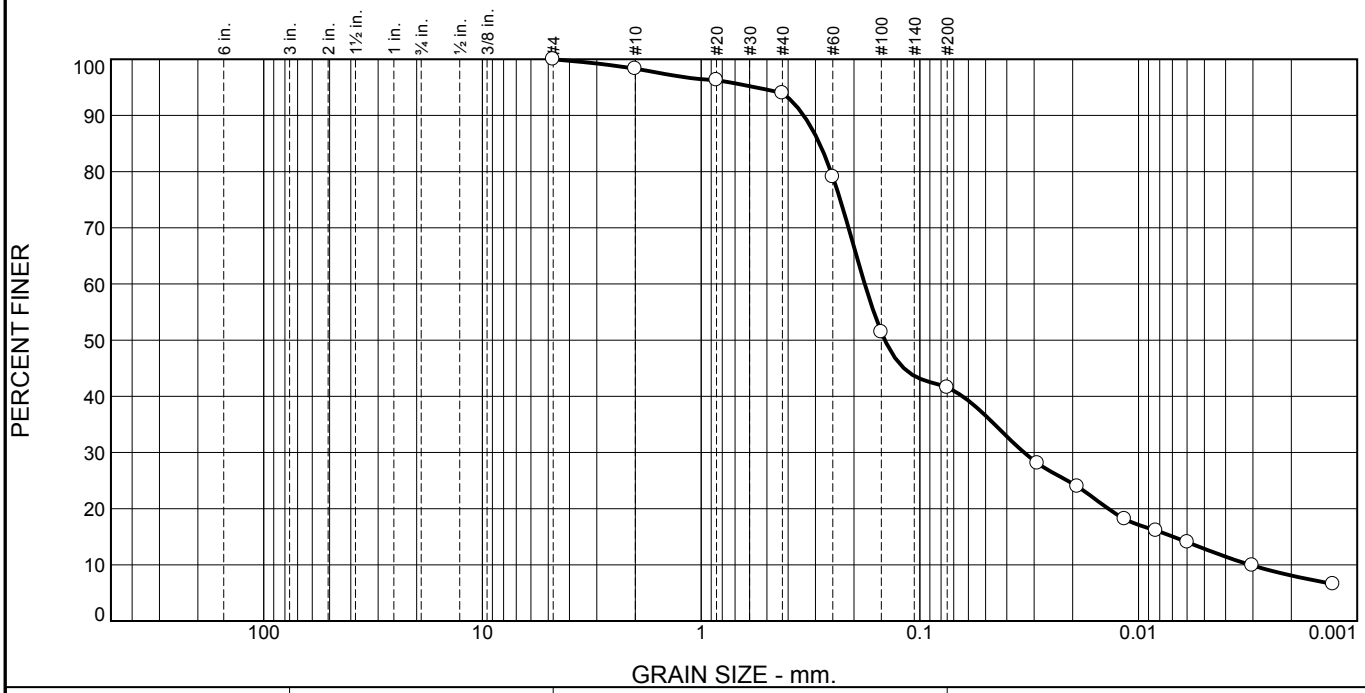
Source of Sample: B-5 **Depth:** 5.0 - 6.5 ft **Date Sampled:** 10-4-16
Sample Number: S-3

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.7	4.3	52.4	28.7	12.9

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	98.3		
#20	96.3		
#40	94.0		
#60	79.1		
#100	51.4		
#200	41.6		
0.0290 mm.	28.1		
0.0191 mm.	24.0		
0.0116 mm.	18.2		
0.0083 mm.	16.1		
0.0060 mm.	14.0		
0.0030 mm.	9.9		
0.0013 mm.	6.6		

* (no specification provided)

Material Description

clayey sand (SC)

Atterberg Limits (ASTM D 4318)

PL= 22 **LL=** 33 **PI=** 11

Classification

USCS (D 2487)= SC **AASHTO (M 145)=** A-6(1)

Coefficients

D_{90}= 0.3395 D_{85}= 0.2875 D_{60}= 0.1785
D_{50}= 0.1444 D_{30}= 0.0334 D_{15}= 0.0069
D_{10}= 0.0031 C_u= 57.85 C_c= 2.02

Remarks

Tested on 10-17-16

Date Received: 10-3-16 **Date Tested:** 10-17-16
Tested By: MH
Checked By: CH
Title:

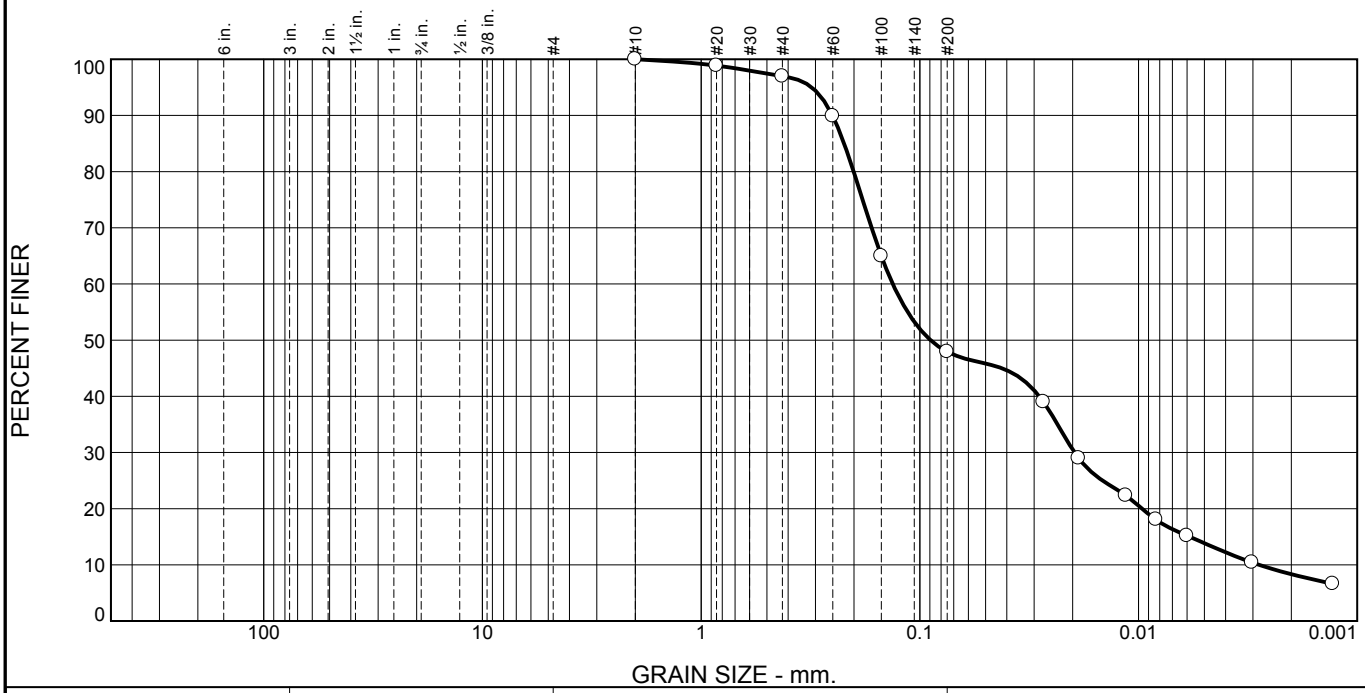
Source of Sample: SWM-1 **Depth:** 13.5 - 15.0 ft **Date Sampled:** 10-3-16
Sample Number: S-6

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.0	49.1	34.0	13.9

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#10	100.0		
#20	98.9		
#40	97.0		
#60	89.9		
#100	65.0		
#200	47.9		
0.0272 mm.	39.0		
0.0188 mm.	29.0		
0.0114 mm.	22.3		
0.0083 mm.	18.0		
0.0060 mm.	15.2		
0.0030 mm.	10.4		
0.0013 mm.	6.6		

* (no specification provided)

Material Description

clayey sand (SC)

Atterberg Limits (ASTM D 4318)

PL= 21 **LL=** 32 **PI=** 11

Classification

USCS (D 2487)= SC **AASHTO (M 145)=** A-6(2)

Coefficients

D_{90}= 0.2509 D_{85}= 0.2220 D_{60}= 0.1330
D_{50}= 0.0893 D_{30}= 0.0196 D_{15}= 0.0058
D_{10}= 0.0028 C_u= 47.28 C_c= 1.03

Remarks

Tested on 10-17-16

Date Received: 10-3-16 **Date Tested:** 10-17-16
Tested By: MH
Checked By: CH
Title:

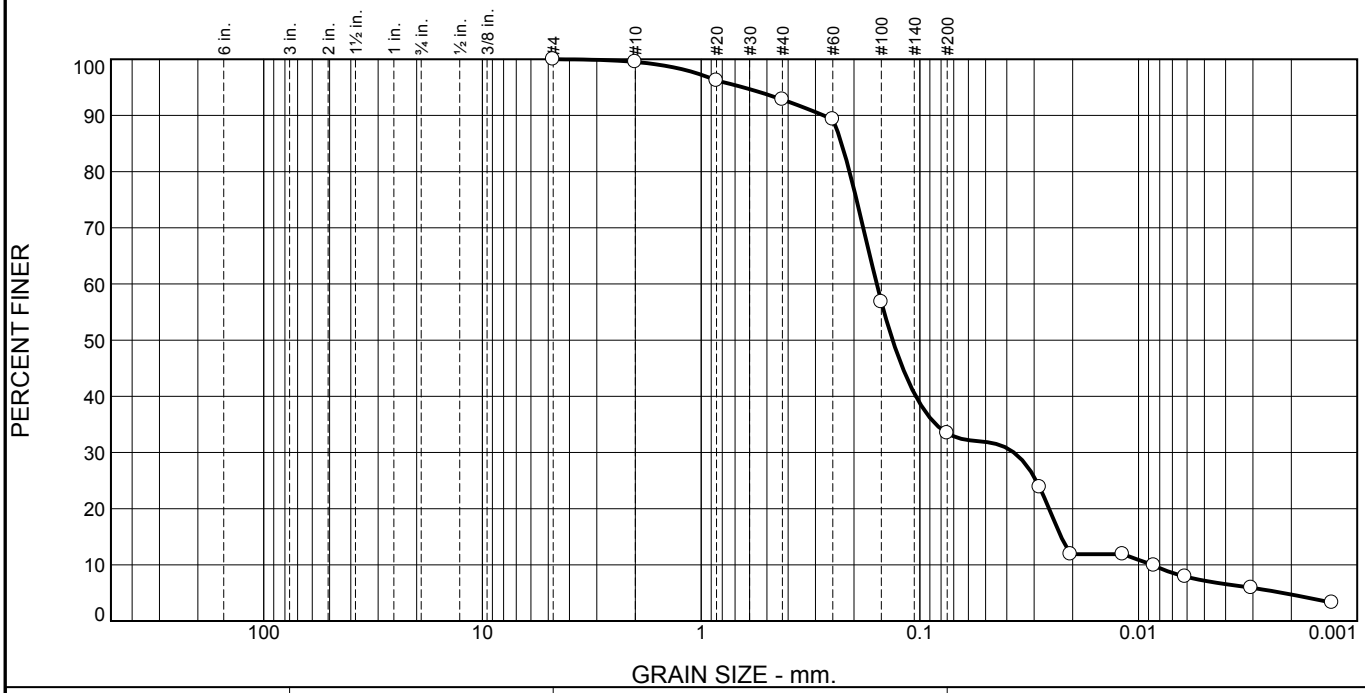
Source of Sample: SWM-2 **Depth:** 13.5 - 15.0 ft **Date Sampled:** 10-3-16
Sample Number: S-6

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	6.7	59.4	26.2	7.2

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.5		
#20	96.2		
#40	92.8		
#60	89.3		
#100	56.8		
#200	33.4		
0.0283 mm.	23.8		
0.0205 mm.	11.9		
0.0118 mm.	11.9		
0.0085 mm.	9.9		
0.0061 mm.	7.9		
0.0031 mm.	5.9		
0.0013 mm.	3.3		

* (no specification provided)

Material Description

clayey sand (SC)

Atterberg Limits (ASTM D 4318)

PL= 20 **LL=** 35 **PI=** 15

Classification

USCS (D 2487)= SC **AASHTO (M 145)=** A-2-6(1)

Coefficients

D_{90}= 0.2752 D_{85}= 0.2279 D_{60}= 0.1575
D_{50}= 0.1332 D_{30}= 0.0371 D_{15}= 0.0226
D_{10}= 0.0086 C_u= 18.23 C_c= 1.01

Remarks

Tested on 10-17-16

Date Received: 10-3-16 **Date Tested:** 10-17-16
Tested By: MH
Checked By: CH
Title:

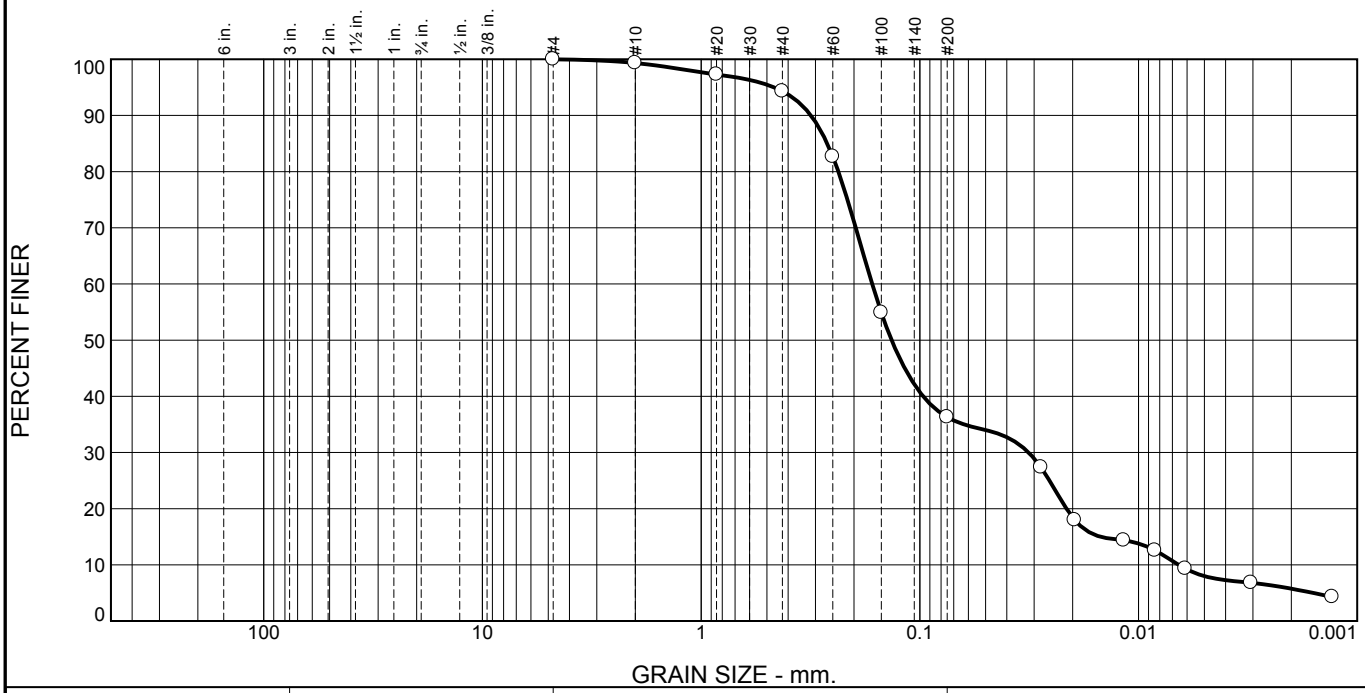
Source of Sample: SWM-3 **Depth:** 13.5 - 15.0 ft **Date Sampled:** 10-3-16
Sample Number: S-6

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No: G16061 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	5.0	58.0	28.3	8.0

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.3		
#20	97.3		
#40	94.3		
#60	82.7		
#100	54.9		
#200	36.3		
0.0279 mm.	27.4		
0.0196 mm.	18.0		
0.0117 mm.	14.4		
0.0084 mm.	12.6		
0.0061 mm.	9.3		
0.0031 mm.	6.8		
0.0013 mm.	4.3		

* (no specification provided)

Material Description

clayey sand (SC)

Atterberg Limits (ASTM D 4318)

PL= 20 **LL=** 32 **PI=** 12

Classification

USCS (D 2487)= SC **AASHTO (M 145)=** A-6(1)

Coefficients

D_{90}= 0.3146 D_{85}= 0.2650 D_{60}= 0.1651
D_{50}= 0.1346 D_{30}= 0.0318 D_{15}= 0.0150
D_{10}= 0.0065 C_u= 25.21 C_c= 0.94

Remarks

Tested on 10-17-16

Date Received: 10-3-16 **Date Tested:** 10-17-16

Tested By: MH

Checked By: CH

Title:

Source of Sample: SWM-4 **Depth:** 13.5 - 15.0 ft **Date Sampled:** 10-3-16
Sample Number: S-6

KIM ENGINEERING, INC.

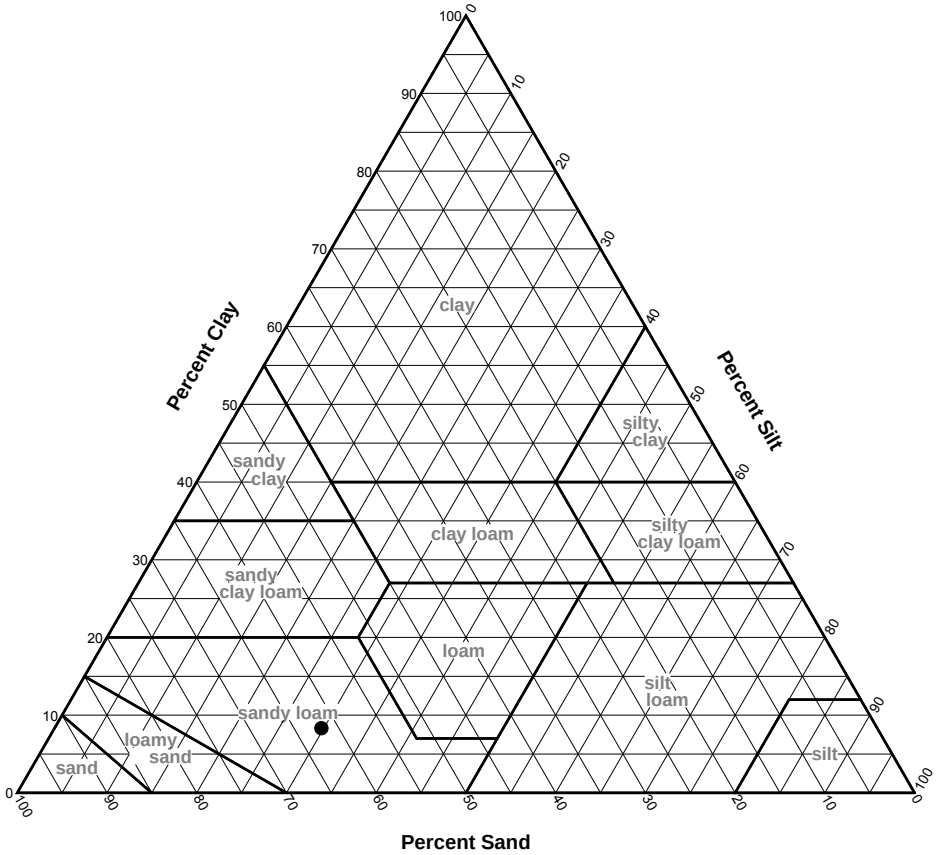
Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment

Project No: G16061 **Figure**

USDA Textural Classification Charts

USDA Soil Classification



SOIL DATA

	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	SWM-1	S-6	13.5 - 15.0 ft	61.9	29.9	8.2	Sandy loam

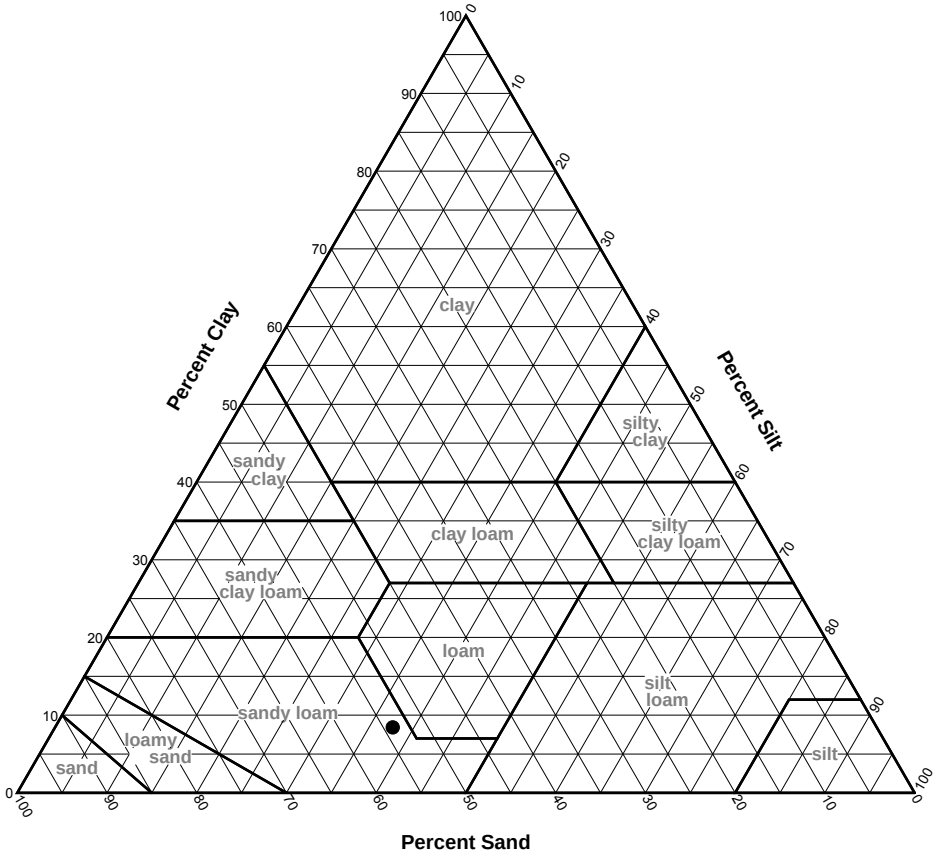
KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No.: G16061 **Figure**

Checked By: CH

USDA Soil Classification



SOIL DATA

	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	SWM-2	S-6	13.5 - 15.0 ft	53.9	37.8	8.3	Sandy loam

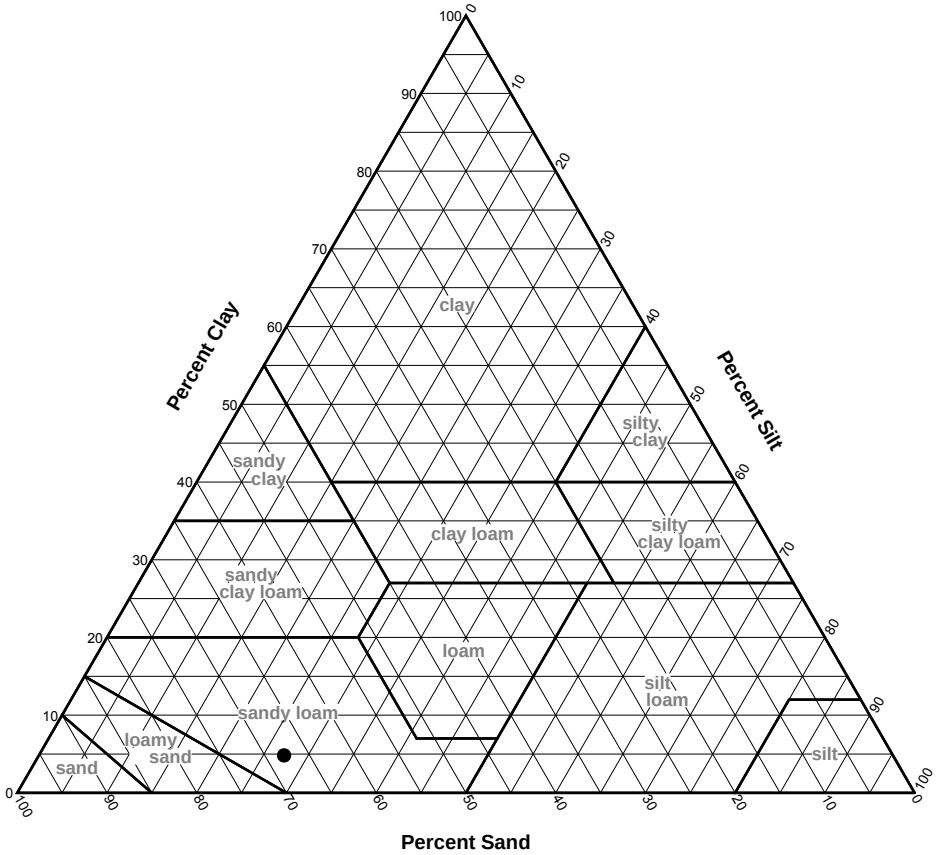
KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No.: G16061 **Figure**

Checked By: CH

USDA Soil Classification



SOIL DATA

	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	SWM-3	S-6	13.5 - 15.0 ft	67.8	27.4	4.7	Sandy loam

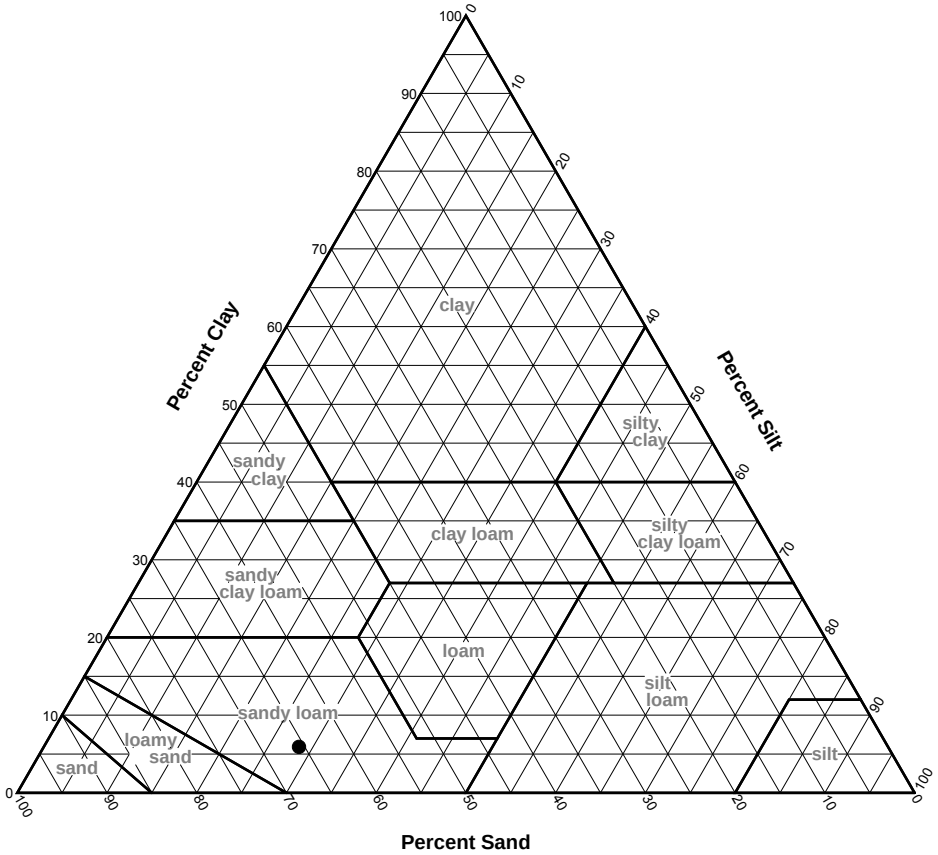
KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No.: G16061 **Figure**

Checked By: CH

USDA Soil Classification



SOIL DATA

	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	SWM-4	S-6	13.5 - 15.0 ft	65.6	28.6	5.8	Sandy loam

KIM ENGINEERING, INC.

Gaithersburg, MD

Client: Alexandria Redevelopment & Housing Authority
Project: Ramsey Homes Redevelopment
Project No.: G16061 **Figure**

Checked By: CH

TAB 19

EDUCATIONAL AND CULTURAL FACILITIES

School Impacts

The Ramsey Homes Development proposes 53 apartment units, 15 of which are replacement units from the Ramsey Homes public housing community. The remaining 38 units will be available to households making approximately 30 to 60 percent of the average median income (AMI) in the Washington, DC Metropolitan Area. The student generation rate for ARHA units is 1.12 students per unit, or 16.8 for the proposed development. The student generation rate for affordable housing units is 0.6 students per unit or 22.8 for the 38 units available at 30 to 60 percent AMI. Based on these calculations there are approximately 40 students (39.6) forecasted for this new development.

The existing 15-unit Ramsey Homes community is already included in the Alexandria City Public Schools (ACPS) short-range and long-range enrollment projections, and all of those units are being replaced in the proposed development; therefore the net new student generation gain forecasted for this project is 22.8 students. This level of increase will not significantly impact enrollment capacity within ACPS and will likely be distributed over multiple grade levels and schools. The site is located in the Maury Elementary School and George Washington Middle School attendance areas.

Cultural Facilities

Several notable cultural destinations are immediately adjacent to the Ramsey Homes site including the Watson Reading Room and the Black History Museum. The Black History Museum is devoted to exhibiting local and regional history, incorporates the Robert H. Robinson Library as one of two exhibition galleries. The Robert H. Robinson Library was originally constructed in 1940 following a sit-in at the segregated Alexandria Library.

Located immediately adjacent to the Black History Museum is the Watson Reading Room. The Watson Reading Room currently has over 3,000 holdings documenting the history of African Americans. Books, periodicals, dissertations, theses, video and audio tapes are accessible by patrons. This library is a non-circulating facility, but offers a 48-hour reserve shelf for patrons.

bing maps

schools

1. **Alexandria City Public Schools**
   Address: 1340 Braddock Pl, Alexandria, VA 22314
   Phone: (703) 619-8000
   Website: https://www.acps.k12.va.us/

2. **George Washington Middle School**
   Address: 1005 Mount Vernon Ave, Alexandria, VA 22301
   Phone: (703) 706-4500
   Website: https://www.acps.k12.va.us/

3. **Jefferson-Houston Elementary School**
   Address: 1501 Cameron St, Alexandria, VA 22314
   Phone: (703) 706-4400
   Website: https://www.acps.k12.va.us/

4. **American Day School**
   Address: 917 Princess St, Alexandria, VA 22314
   Phone: (703) 837-0237
   Website: http://americandayschool.com/

5. **Susquehanna Antique Company**
   Address: 608 Cameron St, Old Town Alexandria, VA 22314
   Phone: (202) 333-1511
   Website: http://www.susquehannaantiques.com

6. **Hopkins House - Helen Day Preschool Academy**
   Address: 1224 Princess St, Alexandria, VA 22314
   Phone: (571) 480-4081
   Website: http://www.hopkinshouse.org/

7. **Madison Day School**
   Address: 722 N Henry St, Alexandria, VA 22314
   Phone: (703) 299-9800
   Website: http://www.madisondayschool.com/

8. **Campagna Center**
   Address: 1501 Cameron St, Alexandria, VA 22314
   Phone: (703) 836-0544
   Website: http://www.campagnacenter.org/

9. **Child And Family Network Centers-Wythe Street**
   Address: 901 Wythe Street, Alexandria, VA 22314
   Phone: (703) 836-0214
   Website: http://cfnc-online.org/site.asp?PageId=2&SubId=48

10. **Great Beginnings**
    Address: 618 N Washington St, Alexandria, VA 22314
    Phone: (703) 224-2599
    Website: http://www.greatbeginningsva.com/

11. **American Day School #2**
    Address: 501 N. Henry Street, Alexandria, VA 22314
    Phone: (703) 837-0237
    Website: http://americandayschool.com/

12. **Northeast Stars Montessori**
    Address: 688 St. Asaph Street, Alexandria, VA 22314
    Phone: (202) 903-0252

13. **St. Anthony's Day School**
    Address: 321 First Street, Alexandria, VA 22314
    Phone: (703) 836-9123
    Website: http://stanthonysdayschool.org/

14. **Anansa Child Care**
    Address: 937 N Henry St., Alexandria, VA 22314
    Phone: (571) 289-1199

15. **Loretta Gaither's Child Care**
    Address: 1609 Princess St, Alexandria, VA 22314
    Phone: (703) 684-7058

16. **Bright Mind Preschool**
    Address: 322 N Alfred St, Alexandria, VA 22301
    Phone: (571) 970-4075

17. **Community Learning International**
    Address: 218 N Alfred St, Alexandria, VA 22314
    Phone: (503) 522-6455

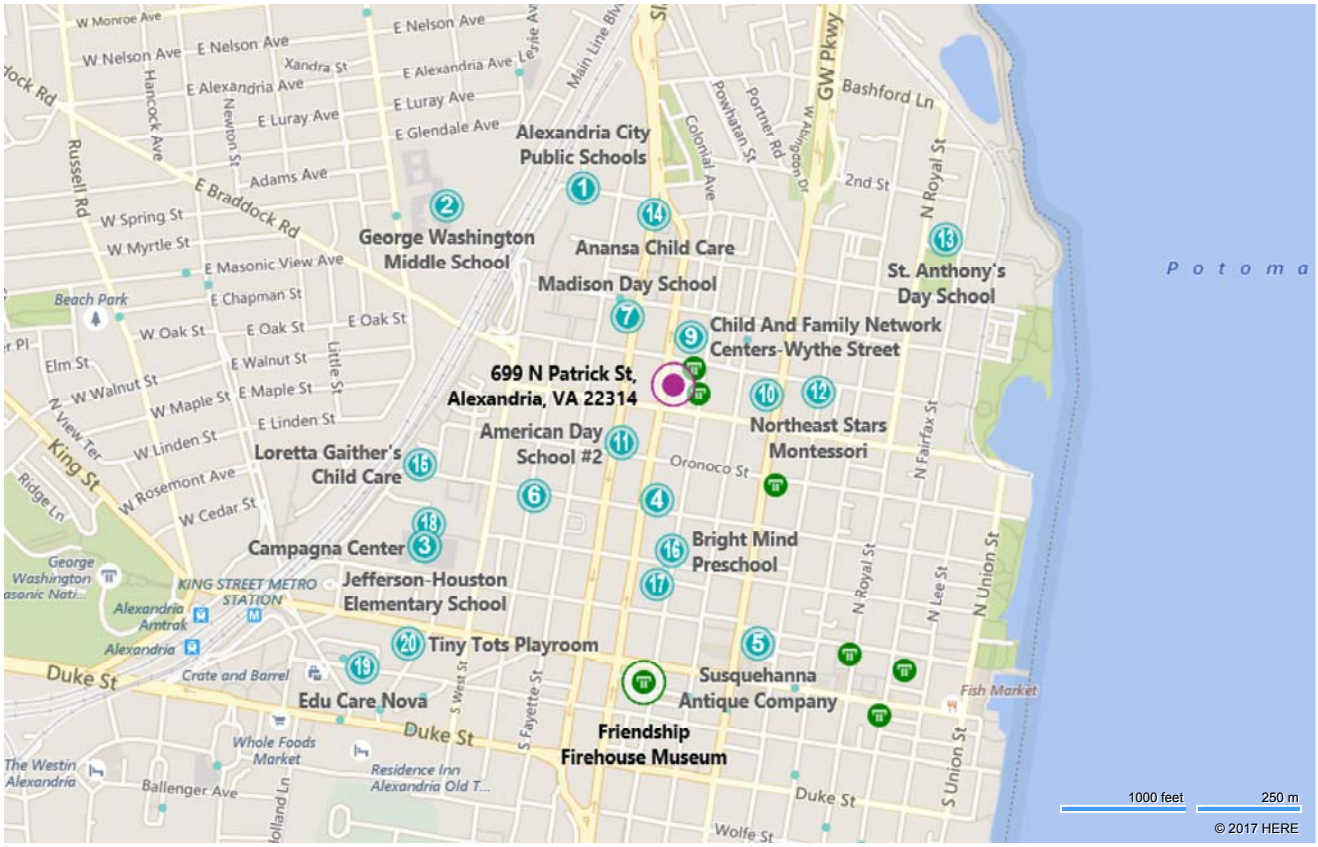
18. **Washington Street United Methodist Church Child Care**
    Address: Washington St. Umc Preschool 115 S. Washington St, Alexandria, VA 22314
    Phone: (703) 549-7931
    Website: http://wsumc.com/preschool/

19 Edu Care Nova

Address: 1625 Prince St, Alexandria, VA 22314
Phone: (703) 246-8550

20 Tiny Tots Playroom

Address: 1500 King Street Suite 105, Alexandria, VA 22314
Phone: (703) 683-5130
Website: http://www.brentwoodacademy.org/page/page/68299.htm



TAB 20

HEALTH CARE AND SOCIAL SERVICES

bing maps

healthcare facilities

1. **Reliable Healthcare Services**
   Address: 820 Gibbon St, Alexandria, VA 22314
   Phone: (703) 419-3390
   Website: http://brhcservices.com/

2. **Guardian Angel Home Health, Inc**
   Address: 211 N Union St Ste 100, Alexandria, VA 22314
   Phone: (571) 982-6305
   Website: http://gahhealth.com/

3. **Alternative Health Associates**
   Address: 215 N Washington St, Alexandria, VA 22314
   Phone: (703) 683-5736
   Website: https://althealthassociates.com/

4. **Domain Medical Home Health**
   Address: 2121 Eisenhower Ave Ste 200, Alexandria, VA 22314
   Phone: (703) 299-4949
   Website: https://www.domainmedicalhh.com/

5. **Alexandria Neighborhood Health Service**
   Address: 720 N Saint Asaph St, Alexandria, VA 22314
   Phone: (703) 299-6181
   Website: http://www.neighborhoodhealthva.org/

6. **Best Health**
   Address: 709 Pendleton St, Alexandria, VA 22314
   Phone: (703) 548-2888

7. **Psychological Services Center**
   Address: 300 S Washington St, Alexandria, VA 22314
   Phone: (703) 838-9878

8. **Alexandria Neighborhood Health Service**
   Address: 2 E Glebe Rd, Alexandria, VA 22305
   Phone: (703) 535-1583
   Website: http://www.neighborhoodhealthva.org/

9. **Senior Services of Alexandria**
   Address: 330 N Washington St, Alexandria, VA 22314
   Phone: (703) 836-4414
   Website: http://www.seniorservicesalex.org/

10. **Potomac Center**
    Address: 1785 S Hayes St, Arlington, VA 22202
    Phone: (703) 920-5700
    Website: http://www.genesishcc.com/

11. **Community Care Home Health**
    Address: 901 N Washington St, Alexandria, VA 22314
    Phone: (703) 535-7830
    Website: http://www.communitycarehomehealth.com/home/

12. **Dependable Home Health**
    Address: 50 S Pickett St Ste 200, Alexandria, VA 22304
    Phone: (703) 370-2300
    Website: http://www.dependablehhs.com/

13. **Renaissance Healthcare Services**
    Address: 6503 Tower, Alexandria, VA 22306
    Phone: (571) 572-7601

14. **TranZitionMe**
    Address: 2815 Duke St, Alexandria, VA 22314
    Phone: (703) 212-5802
    Website: http://www.tranzitionme.com/

15. **Fama Healthcare Services, LLC**
    Address: 4875 Eisenhower Ave Ste 220, Alexandria, VA 22304
    Phone: (571) 319-0529
    Website: http://famahealthcareservices.net/

16. **Reliable Health Care Services**
    Address: 2121 Eisenhower Suite 229, Alexandria, VA 22314
    Phone: (703) 518-7936

17. **Maxim Healthcare Services**
    Address: 1100 New Jersey Ave SE, Washington, DC 20003
    Phone: (202) 545-6980
    Website: https://www.maximhealthcare.com/

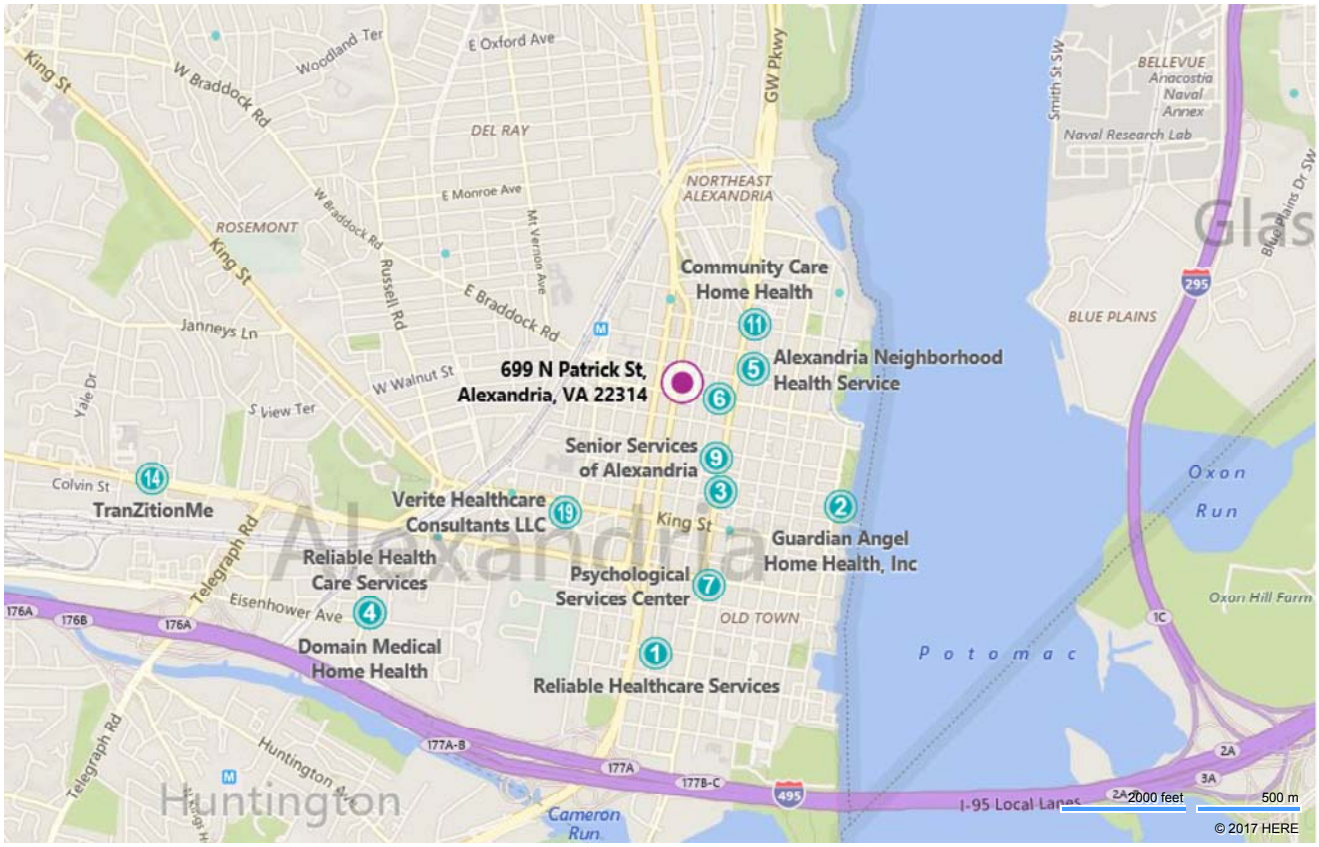
18. **ManorCare Health Services-Alexandria - Alexandria, VA**
    Address: 1510 Collingwood Rd, Alexandria, VA 22308
    Phone: (703) 765-6107
    Website: http://www.heartland-manorcare.com/locations/manorcare-health-services-alexandria/

19 Verite Healthcare Consultants LLC

Address: 1420 King St Ste 401, Alexandria, VA 22314
Phone: (703) 549-9001
Website: http://www.veriteconsulting.com

20 Cherrydale Health & Rehab

Address: 3710 Lee Hwy, Arlington, VA 22207
Phone: (703) 243-7640
Website: https://www.cherrydalehealthrehab.com/



TAB 21

WASTE WATER/ SANITARY SEWERS

P.E. Licensed in :
Virginia
Maryland

Pennsylvania
South Carolina
West Virginia

1981/2003
Everard
Mid Atlantic
Inc.

Everard Mid Atlantic Inc.

Fire Protection Engineers

www . EverardFPE . com Email: emaalex@aol.com 1 - 888 - 318 -3624 (EMAI)

Fire Protection Evaluation Report

COMMONWEALTH OF VIRGINIA
WILLIAM H. EVERARD
No. 7392
10-17-2014
PROFESSIONAL ENGINEER

Ramsey Homes

(DSP # 2014-0035)

699 North Patrick Street
Alexandria, Virginia 22314

Fire Flow Analysis

Presented **10-17-2016**

Included in Report

Fire Flow Analysis Summary

Fire Flow Analysis – Evaluation #1 (multifamily residential) – ALEX1603_FFA_B.XLS

Partial Water Distribution Map – Flow Test Locations

Flow Tests – Comparison Hydraulic Graph

Flow Test Data Sheet – 10/02/2016 – ALEX1603FT_FH1312_A_16_1

Flow Test Data Sheet – 07/20/2014 - RCF1409FT_FH1411_14_1

Flow Test Data Sheet – 07/20/2014- RCF1409FT_FH1112_14_1

ALEXANDRIA FIRE DEPARTMENT
FIRE PREVENTION AND LIFE SAFETY SECTION
APPROVED IN ACCORDANCE WITH THE
REQUIREMENTS OF THE CITY OF ALEXANDRIA
FIRE PREVENTION CODE AND THE VIRGINIA
STATEWIDE FIRE PREVENTION CODE
BY _____ DATE 10/18/16
FIRE PREVENTION / PROTECTION SYSTEM PLAN
REVIEW

Fire Protection Evaluation Report - Fire Flow Analysis Summary

Ramsey Homes (DSUP # 2014-0035)
699 North Patrick Street, Alexandria, Virginia 22314

The following Fire Flow Analysis by Everard Mid Atlantic Inc. (EMA) to determine the applicable Needed Fire Flows (NFF) was requested by the developer in response to the requirements of the City of Alexandria Fire Department (AFD) – Fire Prevention and Life Safety Section - as part of the project development process.

Each of the individual Fire Flow Analysis (FFA) reports is based on the requirements of the Alexandria Fire Prevention Code and ISO Guidelines for Determination of Needed Fire Flow, Edition 06-2014.

Based on the documents provided by the developer and involved design / development organizations EMA has computed the NFFs as indicated herein.

The subject building is a 4 story multifamily residential structure with a single level of underground parking. The underground garage is topped by a 3 hr fire rated concrete slab (podium") with an entrance ramp at the rear (alley) side of the building which also separated from the 1st / grade level.

All portions of the development are protected by automatic fire sprinkler systems – garage NFPA #13 / residential floors NFPA #13R. All portions are also equipped with NFPA #14 fire standpipe systems for fire department use.

The residential structure contains a central corridor, 2 enclosed exit stairs, and individual apartments on all 4 floors. The corridors and unit separations are 1 hr fire rated. Floor/ceiling assemblies are 1 hr fire rated, and the vertical shafts – elevator, ventilation, and stairs – are in 2 hr fire rated enclosures.

Structural framing and assemblies are combustible material with appropriate fire resistant membranes.

The type V A – combustible protected – construction is similar in characteristics as the ISO classification for masonry / wood joisted structures. For this evaluation a construction factor of 1.0 is used.

Available fire flow from fire hydrants in the immediate area is considered adequate and is available from a number of locations around the project site.

The fire flow test included in this report is a recent test **(10/02/2016)** as indicated on the enclosed water schematic.

The data from flow hydrant – FH #D – is suitable for fire protection systems design. FH #D is located across Wythe Street from the northeast corner of the subject building and is close to the proposed connection for the building services (fire and domestic) to the 8" main in Wythe Street.

Graph confirms delivery from distribution system is consistent for 8" main in Wythe Street.

Current test data HHG & LHG are based on estimated test gauge elevations and differ from earlier gradients.

The evaluation results – NNF versus available water distribution system deliveries are:

Individual Evaluations	**NFF**	**FH #D** **901 Wythe St**	**FH #1312** (system flow) **Wythe St / N Patrick St**
Evaluation #1 (A1 – residential)	**2250** gpm	Avail = **2252** gpm 100%	Avail = **5281** gpm 230%
ALEX1603_FFA_A	(10/02/2016)		
Previous Tests in Area – 7/20/2014		**FH #1411** (system flow) **Wythe St / N Henry St (NW)**	**FH #1112** (system flow) **Pendleton St / N Henry St (SE)**
Evaluation #1 (A1 – residential)	**2250** gpm	Avail = **4619** gpm 205%	Avail = **3453** gpm 153%
ALEX1603_FFA_A			

Wm. H. Everard ** The remainder of this page is intentionally blank. ** 10-17-2016

Ramsey Homes
699 North Patrick Street
Alexandria, Va.

FIRE FLOW ANALYSIS
Alexandria Code
App. B, Sec. B101.1

Computed: **10-17-2016**

ALEX1603_FFA_B

Evaluation #1 **Multifamily Residential** Use Group **R-2/S-2** Computed
V - A Stories 4 NFFi : **2318** gpm
See note 1, sheet 4. Single underground garage level
DSUP #2013-00003
NFF (Needed Fire Flow) **Maximum Computed Demand Fire Flow:** NFFi : **2250** GPM

Fire Flow Test Data

FH Number	Test Location	Approx. hose distance to target property FDC	Evaluation Area Distribution System Computed Fire Flow at 20 psig		Comparison to Largest Computed Demand Fire Flow
EMA - test	**See note 2, sheet 4**				
FH #1312	Wythe St at N Patrick St (SE)	estimated - 100' (approximate)	**5281**	gpm	235%
(6" CICL main)	[ALEX1603FT_FH1312_16_1]	**(10/02/2016)**			
flow FH #D	901 Wythe St	delivery at FH nozzles 37 psi at	1318	gpm	59%
EMA - test					
FH #D	901 Wythe Street	estimated - 100' (approximate)	**2252**	gpm	100%
(8" DICL main)	[ALEX1603FT_FHD_16_1]	**(10/02/2016)**			
(single FH test)	same	delivery at FH nozzles 37 psi at	1318	gpm	59%
EMA - test	2014 test - same area as project				
FH #1411	Wythe St at N Henry St (NW)	NA (approximate)	**4619**	gpm	205%
(8" CICL main)	[RCF1409FT_FH1411_14_1]	**(7/20/2014)**			
flow FH #1116	Wytye St at N Henry St (SE)	delivery at FH nozzles 21 psi at	1614	gpm	72%
Evaluation Test	**FH #1312**	**(10/02/2016) estimated - 100'**	**5281**	gpm	**235%**

Findings
1. **Indicated distribution system fire flows meet computed demands.**
2. **Existing & proposed fire hydrant coverage conforms w/distance criteria - 300 ft. per C101.1, item 20.**

&
Notes 1. *[ALEX1603FT_FHD_16_1]* *flow test data is suitable for use in building fire protection systems design.*

Evaluation By:

COMMONWEALTH OF VIRGINIA
WILLIAM H. EVERARD
No. 7392
PROFESSIONAL ENGINEER
William H. Everard
10-17-2016

Signature
&
Date:

Action By: Authority Having Jurisdiction

ALEXANDRIA FIRE DEPARTMENT
FIRE PREVENTION AND LIFE SAFETY SECTION
APPROVED IN ACCORDANCE WITH THE
REQUIREMENTS OF THE CITY OF ALEXANDRIA
FIRE PREVENTION CODE AND THE VIRGINIA
STATEWIDE FIRE PREVENTION CODE
BY_____ DATE 10/18/16
FIRE PREVENTION / PROTECTION SYSTEM PLAN
REVIEW

Ramsey Homes
699 North Patrick Street
Alexandria, Va.

FIRE FLOW ANALYSIS
Alexandria Code
App. B, Sec. B101.1

Computed: **10-17-2016**

ALEX1603_FFA_B

Evaluation #1 Multifamily Residential IBC Occupancy Class: **R-2/S-2**

NFiPA #1142-2012 Occupancy Class **5** ISO Occupancy Class: **C-3**

Construction Class **V - A** VaUSBC - IBC/2012 Construction coefficient: **1.00**

Description: Combustible - protected Single underground garage level
Exterior walls & interior unit separation walls - 1 hr fire rated
Floor / ceiling assemblies - 1 hr fire rated **See note 3, sheet 4.**

NFiPA #1142-2012 Construction Factor 1.00 **ISO Construction Type** **2**

NFiPA 220 Type: V (1 1 1) **ISO construction coefficident:** **1.00**

Effective Building Area **(A)** 2nd floor - residential 16146 = 16146
Preliminary submission package p-lans - dated 9/16/16.

Total Area of Largest Floor 16146 gross sq. ft. Computation - largest floor area = **16146** sq. ft.
See note 4, sheet 4.

Remaining floors	Gross Area	Computation Floor Area	Floor Factor	Computed floor area
Underground parking level	16146 sq. ft.	0 sq. ft.	0%	**0** sq. ft.
See note 5, sheet 4.				
No baasement	0 sq. ft.	0 sq. ft.	0%	**0** sq. ft.
See note 6, sheet 4.				
Level 1	14972 sq. ft.	14972 sq. ft.	50%	**7486** sq. ft.
Garage entry ramp is 3 hr separated from 1st floor - remains part of underground "podium" structure.				
Level 3	16146 sq. ft.	16146 sq. ft.	50%	**8073** sq. ft.
Level 4	11221 sq. ft.	11221 sq. ft.	50%	**5611** sq. ft.
Roof - flat accessible	sq. ft.	0 sq. ft.	0%	**0** sq. ft.
	sq. ft.	0 sq. ft.	0%	**0** sq. ft.
	sq. ft.	sq. ft.	0%	**0** sq. ft.
	sq. ft.	0 sq. ft.	0%	**0** sq. ft.

Total Stories: **4** Effective Computed Area = **37316** sq. ft.

Needed Fire Flow Computation

NFFi = (Ci) x (Oi) x (1 + sum [Xi + Pi]) modified by specific fire protection factors = X gpm

FP factors: D. Wood roof penalty E. Automatic sprinkler credit F. FA & auto detection credit
G. Fire fighting / operations access (FP systems must be monitored by method acceptable to the AHJ.)

Everard Mid Atlantic Inc.
8743 Center Road
Springfield, VA 22152-2234

Wm H Everard **703-850-3287** 10-17-2016

Computation Sheet 2 of 4

(ffa03ace_1)

Ramsey Homes
699 North Patrick Street
Alexandria, Va.

FIRE FLOW ANALYSIS
Alexandria Code
App. B, Sec. B101.1

Computed: **10-17-2016**

ALEX1603_FFA_B

A. Ci Construction Factor Ci = 18 x F x (Ai) sq. rt.

Ci = 18 X 1 X 193.17 = 3477 > **3477** gpm

B. Oi Occupancy Fire Hazard Factor **C-3**

Combustibility Class **Combustible** **See note 7, sheet 4.** Oi > **1.00**

C. X + P Exposure (X) & Communication (P) Factors Table 330A V

			Exposed Building Class	Distance	Length-Height	Table 330B V	
Side 1 front (west)	X1	Open landscaped area & public street ROW		88'	< scaled separation distance		
			stories		0		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P1	NA	**See note 8, sheet 4.**		0.0000	>	0.0000
							0.0000
Side 2 (north)	X1	Public st ROW & opposite community center	2	92'	< scaled separation distance		
		masonry exterior & unprotected openings	stories 1	60	60		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P2	NA	**See note 9, sheet 4.**		0.0000	>	0.0000
							0.0000
Side 3 (east)	X3	Public alley (EVE) & private parking	2	42'	< scaled separation distance		
			stories 1	0	0		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P3	NA	**See note 10, sheet 4.**		0.0000	>	0.0000
							0.0000
Side 4 (south)	X4	Open area - public st ROW - row dwellings	2	> 100'	< scaled separation distance		
			stories 2	78	156		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P4	NA	**See note 11, sheet 4.**		0.0000	>	0.0000
							0.0000

X + P Factor = **1 + highest exposure / communication charge** (ISO, Chapter 4) = **1.0000**
For this computation - use side of subject building w/highest X factor.

NFFi = (Ci) (Oi) (1 + sum[Xi + Pi]) = 3477 x 1.00 x 1.0000 = **3477** gpm

NFFi = **BASIC COMPUTED DEMAND FIRE FLOW** = **3477** GPM

Modifiers

D. Wood Roof Penalty 500 gpm x 0.00 > **0** gpm
Not applicable

E. Automatic Fire Suppression System(s) Reduction > -33.33% > **-1159** gpm
Protected by combined automatic sprinkler & stabndpipe system **see note 12, sheet 4.**

F. Other Automatic Fire Protection System(s) Factor > 0% > **0** gpm
Fire detection & alarm system

G. Fire Fighting / Operations Access Factor > 0% > **0** gpm
Perimeter is essentially 100% apparatus accessible. **See note 13, sheet 4.**

NFF = FINAL COMPUTED DEMAND FIRE FLOW (to nearest 250 gpm) **2250** < **2318** GPM

Everard Mid Atlantic Inc.
8743 Center Road
Springfield, VA 22152-2234
Wm H Everard **703-850-3287** 10-17-2016

Explanatory Notes.

This water distribution system "Needed Fire Flow" (NFF) evaluation is based on the requirements of the City of Alexandria, Va., Fire Prevention Code, specifically Appendix B, Section B101.1, and the ISO Guidelines For determination of Needed Fire Flow, Edition 06-2014.
Where applicable, other regulations and standards notations will include specific citations.

1. Proposed structure is 4 story multifamily residential w/single level underground garage.
Ground floor a9'podium") is separated from underground garage w/3 hr rated concrete assembly.

2. Current EMA flow test data used for analysis.
FH #D flow data is suitable for fire protection systems design. 8" main is connection for services.

3. Proposed construction above podium is type V A - protected combustible. VaUSBC-2012
Exterior & interior walls - 1 hr fire rated. Vertical shaft enclosures - 2 hr fire rated.
Floor/ceiling & roof/ceiling assemblies are 1 hr fire rated w/combustible materials.
For this evaluation construction is comparable to ISO classification type 2 - "joisted masonry".
ISO construction factor is 1.0. **Applied construction factor F is 1.0.**
NFPA #1142 construction factor is 1.0.

4. **Computations based on largest gross floor area - Level 2.**
Level 1 GFA is smaller than level2 due to fire rated enclosure of garage entry ramp at rear.
and 50% of gross floor areas of remaining floors.

5. Single level underground garage. 3 hr fire separation at grade.

6. **Primary structural frame is 1 hr protected combustible per VaUSBC.**

7. For this computation residential uses are classified as C-3, combustible.
Classification is based on increased combustibility of typical occupant materials.
Classifications oer Chapter 3, ISO Guidelines Edition 06-2014. **Occupancy factor is 1.00.**

NFPA #1142 classifies mixed use as occupancy class 5, moderate hazard. Occupancy factor is 1.00.

8. West (entry) exposure is landscaped area & public street ROW - some opposite row dwellings.
Minimum separation distance is approximately 88 ft.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

9. North exposure is public street ROW & opposite 1 story community center.
Exposure exterior wall is masonry w/unpotected openings. Automatic fire sprinkler protection.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

10. East exposure is public alley - 1 story masonry garages & open parking.
Minimum separation distance is approximately 42 ft.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

11. South esposure is landscaped open area, public street ROW & opposite 2 story row dwellings.
Separation distance exceeds 100 ft.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

12. Proposed structure is protected w/automatic sprinklers - garage NFPA #13 & residential NFPA #13R.
Also includes fire standpipe system in accordance with NFPA #14.

13. Perimeter is essentially 100% apparatus accessible. Public & private streets.

TAB 22

WATER SUPPLY

P.E. Licensed in :
Virginia
Maryland

Pennsylvania
South Carolina
West Virginia

1981/2003
Everard
Mid Atlantic
Inc.

Everard Mid Atlantic Inc.

Fire Protection Engineers

www . EverardFPE . com Email: emaalex@aol.com 1 - 888 - 318 -3624 (EMAI)

Fire Protection Evaluation Report

COMMONWEALTH OF VIRGINIA
WILLIAM H. EVERARD
No. 7392
10-17-2014
PROFESSIONAL ENGINEER

Ramsey Homes

(DSP # 2014-0035)

699 North Patrick Street
Alexandria, Virginia 22314

Fire Flow Analysis

Presented **10-17-2016**

Included in Report

Fire Flow Analysis Summary

Fire Flow Analysis – Evaluation #1 (multifamily residential) – ALEX1603_FFA_B.XLS

Partial Water Distribution Map – Flow Test Locations

Flow Tests – Comparison Hydraulic Graph

Flow Test Data Sheet – 10/02/2016 – ALEX1603FT_FH1312_A_16_1

Flow Test Data Sheet – 07/20/2014 - RCF1409FT_FH1411_14_1

Flow Test Data Sheet – 07/20/2014- RCF1409FT_FH1112_14_1

ALEXANDRIA FIRE DEPARTMENT
FIRE PREVENTION AND LIFE SAFETY SECTION
APPROVED IN ACCORDANCE WITH THE
REQUIREMENTS OF THE CITY OF ALEXANDRIA
FIRE PREVENTION CODE AND THE VIRGINIA
STATEWIDE FIRE PREVENTION CODE
BY _____ DATE 10/18/16
FIRE PREVENTION / PROTECTION SYSTEM PLAN
REVIEW

Fire Protection Evaluation Report - Fire Flow Analysis Summary

Ramsey Homes (DSUP # 2014-0035)
699 North Patrick Street, Alexandria, Virginia 22314

The following Fire Flow Analysis by Everard Mid Atlantic Inc. (EMA) to determine the applicable Needed Fire Flows (NFF) was requested by the developer in response to the requirements of the City of Alexandria Fire Department (AFD) – Fire Prevention and Life Safety Section - as part of the project development process.

Each of the individual Fire Flow Analysis (FFA) reports is based on the requirements of the Alexandria Fire Prevention Code and ISO Guidelines for Determination of Needed Fire Flow, Edition 06-2014.

Based on the documents provided by the developer and involved design / development organizations EMA has computed the NFFs as indicated herein.

The subject building is a 4 story multifamily residential structure with a single level of underground parking. The underground garage is topped by a 3 hr fire rated concrete slab (podium") with an entrance ramp at the rear (alley) side of the building which also separated from the 1st / grade level.

All portions of the development are protected by automatic fire sprinkler systems – garage NFPA #13 / residential floors NFPA #13R. All portions are also equipped with NFPA #14 fire standpipe systems for fire department use.

The residential structure contains a central corridor, 2 enclosed exit stairs, and individual apartments on all 4 floors. The corridors and unit separations are 1 hr fire rated. Floor/ceiling assemblies are 1 hr fire rated, and the vertical shafts – elevator, ventilation, and stairs – are in 2 hr fire rated enclosures.

Structural framing and assemblies are combustible material with appropriate fire resistant membranes.

The type V A – combustible protected – construction is similar in characteristics as the ISO classification for masonry / wood joisted structures. For this evaluation a construction factor of 1.0 is used.

Available fire flow from fire hydrants in the immediate area is considered adequate and is available from a number of locations around the project site.

The fire flow test included in this report is a recent test **(10/02/2016)** as indicated on the enclosed water schematic.

The data from flow hydrant – FH #D – is suitable for fire protection systems design. FH #D is located across Wythe Street from the northeast corner of the subject building and is close to the proposed connection for the building services (fire and domestic) to the 8" main in Wythe Street.

Graph confirms delivery from distribution system is consistent for 8" main in Wythe Street.

Current test data HHG & LHG are based on estimated test gauge elevations and differ from earlier gradients.

The evaluation results – NNF versus available water distribution system deliveries are:

Individual Evaluations	**NFF**	**FH #D** **901 Wythe St**	**FH #1312** (system flow) **Wythe St / N Patrick St**
Evaluation #1 (A1 – residential)	**2250** gpm	Avail = **2252** gpm 100%	Avail = **5281** gpm 230%
ALEX1603_FFA_A	(10/02/2016)		
Previous Tests in Area – 7/20/2014		**FH #1411** (system flow) **Wythe St / N Henry St (NW)**	**FH #1112** (system flow) **Pendleton St / N Henry St (SE)**
Evaluation #1 (A1 – residential)	**2250** gpm	Avail = **4619** gpm 205%	Avail = **3453** gpm 153%
ALEX1603_FFA_A			

Wm. H. Everard ** The remainder of this page is intentionally blank. ** 10-17-2016

Ramsey Homes
699 North Patrick Street
Alexandria, Va.

FIRE FLOW ANALYSIS
Alexandria Code
App. B, Sec. B101.1

Computed: **10-17-2016**

ALEX1603_FFA_B

Evaluation #1 **Multifamily Residential** Use Group **R-2/S-2** Computed
V - A Stories 4 NFFi : **2318** gpm
See note 1, sheet 4. Single underground garage level
DSUP #2013-00003
NFF (Needed Fire Flow) **Maximum Computed Demand Fire Flow:** **NFFi :** **2250** GPM

Fire Flow Test Data

FH Number	Test Location	Approx. hose distance to target property FDC	Evaluation Area Distribution System Computed Fire Flow at 20 psig		Comparison to Largest Computed Demand Fire Flow
EMA - test	**See note 2, sheet 4**				
FH #1312	Wythe St at N Patrick St (SE)	estimated - 100' (approximate)	**5281**	gpm	235%
(6" CICL main)	[ALEX1603FT_FH1312_16_1]	**(10/02/2016)**			
flow FH #D	901 Wythe St	delivery at FH nozzles 37 psi at	1318	gpm	59%
EMA - test					
FH #D	901 Wythe Street	estimated - 100' (approximate)	**2252**	gpm	100%
(8" DICL main)	[ALEX1603FT_FHD_16_1]	**(10/02/2016)**			
(single FH test)	same	delivery at FH nozzles 37 psi at	1318	gpm	59%
EMA - test	2014 test - same area as project				
FH #1411	Wythe St at N Henry St (NW)	NA (approximate)	**4619**	gpm	205%
(8" CICL main)	[RCF1409FT_FH1411_14_1]	**(7/20/2014)**			
flow FH #1116	Wytye St at N Henry St (SE)	delivery at FH nozzles 21 psi at	1614	gpm	72%
Evaluation Test	**FH #1312**	**(10/02/2016) estimated - 100'**	**5281**	gpm	**235%**

Findings
1. **Indicated distribution system fire flows meet computed demands.**
2. **Existing & proposed fire hydrant coverage conforms w/distance criteria - 300 ft. per C101.1, item 20.**

&
Notes 1. *[ALEX1603FT_FHD_16_1]* *flow test data is suitable for use in building fire protection systems design.*

Evaluation By:

COMMONWEALTH OF VIRGINIA
WILLIAM H. EVERARD
No. 7392
PROFESSIONAL ENGINEER

William H. Everard
10-17-2016

Signature
&
Date:

Action By: Authority Having Jurisdiction

ALEXANDRIA FIRE DEPARTMENT
FIRE PREVENTION AND LIFE SAFETY SECTION
APPROVED IN ACCORDANCE WITH THE
REQUIREMENTS OF THE CITY OF ALEXANDRIA
FIRE PREVENTION CODE AND THE VIRGINIA
STATEWIDE FIRE PREVENTION CODE
BY_____ DATE 10/18/16
FIRE PREVENTION / PROTECTION SYSTEM PLAN
REVIEW

Ramsey Homes
699 North Patrick Street
Alexandria, Va.

FIRE FLOW ANALYSIS
Alexandria Code
App. B, Sec. B101.1

Computed: **10-17-2016**

ALEX1603_FFA_B

Evaluation #1 Multifamily Residential IBC Occupancy Class: **R-2/S-2**

NFiPA #1142-2012 Occupancy Class **5** ISO Occupancy Class: **C-3**

Construction Class **V - A** VaUSBC - IBC/2012 Construction coefficient: **1.00**

Description: Combustible - protected Single underground garage level
Exterior walls & interior unit separation walls - 1 hr fire rated
Floor / ceiling assemblies - 1 hr fire rated **See note 3, sheet 4.**

NFiPA #1142-2012 Construction Factor 1.00 **ISO Construction Type** **2**

NFiPA 220 Type: V (1 1 1) **ISO construction coefficident:** **1.00**

Effective Building Area **(A)** 2nd floor - residential 16146 = 16146
Preliminary submission package p-lans - dated 9/16/16.

Total Area of Largest Floor 16146 gross sq. ft. Computation - largest floor area = **16146** sq. ft.
See note 4, sheet 4.

Remaining floors	Gross Area	Computation Floor Area	Floor Factor	Computed floor area
Underground parking level	16146 sq. ft.	0 sq. ft.	0%	**0** sq. ft.
See note 5, sheet 4.				
No baasement	0 sq. ft.	0 sq. ft.	0%	**0** sq. ft.
See note 6, sheet 4.				
Level 1	14972 sq. ft.	14972 sq. ft.	50%	**7486** sq. ft.
Garage entry ramp is 3 hr separated from 1st floor - remains part of underground "podium" structure.				
Level 3	16146 sq. ft.	16146 sq. ft.	50%	**8073** sq. ft.
Level 4	11221 sq. ft.	11221 sq. ft.	50%	**5611** sq. ft.
Roof - flat accessible	sq. ft.	0 sq. ft.	0%	**0** sq. ft.
	sq. ft.	0 sq. ft.	0%	**0** sq. ft.
	sq. ft.	sq. ft.	0%	**0** sq. ft.
	sq. ft.	0 sq. ft.	0%	**0** sq. ft.

Total Stories: **4** Effective Computed Area = **37316** sq. ft.

Needed Fire Flow Computation

NFFi = (Ci) x (Oi) x (1 + sum [Xi + Pi]) modified by specific fire protection factors = X gpm

FP factors: D. Wood roof penalty E. Automatic sprinkler credit F. FA & auto detection credit
G. Fire fighting / operations access (FP systems must be monitored by method acceptable to the AHJ.)

Everard Mid Atlantic Inc.
8743 Center Road
Springfield, VA 22152-2234

Wm H Everard **703-850-3287** 10-17-2016

Computation Sheet 2 of 4

(ffa03ace_1)

Ramsey Homes
699 North Patrick Street
Alexandria, Va.

FIRE FLOW ANALYSIS
Alexandria Code
App. B, Sec. B101.1

Computed: **10-17-2016**

ALEX1603_FFA_B

A. Ci Construction Factor Ci = 18 x F x (Ai) sq. rt.

Ci = 18 X 1 X 193.17 = 3477 > **3477** gpm

B. Oi Occupancy Fire Hazard Factor **C-3**

Combustibility Class **Combustible** **See note 7, sheet 4.** Oi > **1.00**

C. X + P Exposure (X) & Communication (P) Factors Table 330A V

			Exposed Building Class	Distance	Length-Height	Table 330B V	
Side 1 front (west)	X1	Open landscaped area & public street ROW		88'	< scaled separation distance		
			stories		0		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P1	NA	**See note 8, sheet 4.**		0.0000	>	0.0000
							0.0000
Side 2 (north)	X1	Public st ROW & opposite community center	2	92'	< scaled separation distance		
		masonry exterior & unprotected openings	stories 1	60	60		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P2	NA	**See note 9, sheet 4.**		0.0000	>	0.0000
							0.0000
Side 3 (east)	X3	Public alley (EVE) & private parking	2	42'	< scaled separation distance		
			stories 1	0	0		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P3	NA	**See note 10, sheet 4.**		0.0000	>	0.0000
							0.0000
Side 4 (south)	X4	Open area - public st ROW - row dwellings	2	> 100'	< scaled separation distance		
			stories 2	78	156		
			exposure classification	> 40'	**0.0000**	>	**0.0000**
	P4	NA	**See note 11, sheet 4.**		0.0000	>	0.0000
							0.0000

X + P Factor = **1 + highest exposure / communication charge** (ISO, Chapter 4) = **1.0000**
For this computation - use side of subject building w/highest X factor.

NFFi = (Ci) (Oi) (1 + sum[Xi + Pi]) = 3477 x 1.00 x 1.0000 = **3477** gpm

NFFi = **BASIC COMPUTED DEMAND FIRE FLOW** = **3477** GPM

Modifiers

D. Wood Roof Penalty 500 gpm x 0.00 > **0** gpm
Not applicable

E. Automatic Fire Suppression System(s) Reduction > -33.33% > **-1159** gpm
Protected by combined automatic sprinkler & stabndpipe system **see note 12, sheet 4.**

F. Other Automatic Fire Protection System(s) Factor > 0% > **0** gpm
Fire detection & alarm system

G. Fire Fighting / Operations Access Factor > 0% > **0** gpm
Perimeter is essentially 100% apparatus accessible. **See note 13, sheet 4.**

NFF = FINAL COMPUTED DEMAND FIRE FLOW (to nearest 250 gpm) **2250** < **2318** GPM

Everard Mid Atlantic Inc.
8743 Center Road
Springfield, VA 22152-2234
Wm H Everard **703-850-3287** 10-17-2016

Explanatory Notes.

This water distribution system "Needed Fire Flow" (NFF) evaluation is based on the requirements of the City of Alexandria, Va., Fire Prevention Code, specifically Appendix B, Section B101.1, and the ISO Guidelines For determination of Needed Fire Flow, Edition 06-2014.
Where applicable, other regulations and standards notations will include specific citations.

1. Proposed structure is 4 story multifamily residential w/single level underground garage.
Ground floor a9'podium") is separated from underground garage w/3 hr rated concrete assembly.

2. Current EMA flow test data used for analysis.
FH #D flow data is suitable for fire protection systems design. 8" main is connection for services.

3. Proposed construction above podium is type V A - protected combustible. VaUSBC-2012
Exterior & interior walls - 1 hr fire rated. Vertical shaft enclosures - 2 hr fire rated.
Floor/ceiling & roof/ceiling assemblies are 1 hr fire rated w/combustible materials.
For this evaluation construction is comparable to ISO classification type 2 - "joisted masonry".
ISO construction factor is 1.0. **Applied construction factor F is 1.0.**
NFPA #1142 construction factor is 1.0.

4. **Computations based on largest gross floor area - Level 2.**
Level 1 GFA is smaller than level2 due to fire rated enclosure of garage entry ramp at rear.
and 50% of gross floor areas of remaining floors.

5. Single level underground garage. 3 hr fire separation at grade.

6. **Primary structural frame is 1 hr protected combustible per VaUSBC.**

7. For this computation residential uses are classified as C-3, combustible.
Classification is based on increased combustibility of typical occupant materials.
Classifications oer Chapter 3, ISO Guidelines Edition 06-2014. **Occupancy factor is 1.00.**

NFPA #1142 classifies mixed use as occupancy class 5, moderate hazard. Occupancy factor is 1.00.

8. West (entry) exposure is landscaped area & public street ROW - some opposite row dwellings.
Minimum separation distance is approximately 88 ft.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

9. North exposure is public street ROW & opposite 1 story community center.
Exposure exterior wall is masonry w/unpotected openings. Automatic fire sprinkler protection.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

10. East exposure is public alley - 1 story masonry garages & open parking.
Minimum separation distance is approximately 42 ft.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

11. South esposure is landscaped open area, public street ROW & opposite 2 story row dwellings.
Separation distance exceeds 100 ft.
Separation distance exceeds 40 ft. **For computation X factor is 0 per Chapter 4, para 2 & item 2.**

12. Proposed structure is protected w/automatic sprinklers - garage NFPA #13 & residential NFPA #13R.
Also includes fire standpipe system in accordance with NFPA #14.

13. Perimeter is essentially 100% apparatus accessible. Public & private streets.

TAB 23

PARKS, OPEN SPACE AND RECREATION

bing maps

parks and recreation

1. **Waterfront Park**
   Address: 1a Prince St, Alexandria, VA 22314
   Website: https://www.alexandriava.gov/recreation/info/default.aspx?id=12292

2. **The Dog Park**
   Address: 705 King St, Alexandria, VA 22314
   Phone: (703) 888-2818
   Website: http://www.thedogparkva.biz/blog/

3. **Founders Park**
   Address: 400 N Union St, Alexandria, VA 22314
   Website: http://www.alexandriafounderspark.org/

4. **Tide Lock Park**
   Address: 1 Canal Center Plz, Alexandria, VA 22314
   Website: https://www.alexandriava.gov/recreation/info/default.aspx?id=12292

5. **Oronoco Bay Park**
   Address: 100 Madison Pl, Alexandria, VA 22314
   Website: https://www.alexandriava.gov/recreation/info/default.aspx?id=12290

6. **Windmill Hill Park**
   Address: 501 S Union St, Alexandria, VA 22314

7. **Northern Virginia Regional Park Authority**
   Address: 121 N Fairfax St, Alexandria, VA 22314
   Phone: (703) 549-2997
   Website: https://www.novaparks.com/

8. **Simpson Stadium Dog Park Group**
   Address: 426 E Monroe Ave, Alexandria, VA 22301
   Phone: (703) 555-1212
   Website: https://www.alexandriava.gov/recreation/info/default.aspx?id=12286

9. **Dog Run Park**
   Address: 450 Andrew's Ln, Alexandria, VA 22314

10. **Rivergate City Park**
    Address: 2 Montgomery St, Alexandria, VA 22314
    Phone: (703) 746-4343

11. **Armory Tot Park**
    Address: 208 S Royal St, Alexandria, VA 22314
    Phone: (703) 746-4343

12. **Montgomery Park**
    Address: 901 N Royal St, Alexandria, VA 22314
    Website: https://www.alexandriava.gov/

13. **King Street Gardens Park**
    Address: 1806 King St, Alexandria, VA 22314

14. **Angel Park**
    Address: 201 W Taylor Run Pkwy, Alexandria, VA 22314

15. **Alexandria African American Heritage Park**
    Address: 500 Holland Ln, Alexandria, VA 22314
    Phone: (703) 746-4356
    Website: https://www.alexandriava.gov/historic/blackhistory/default.aspx?id=37348

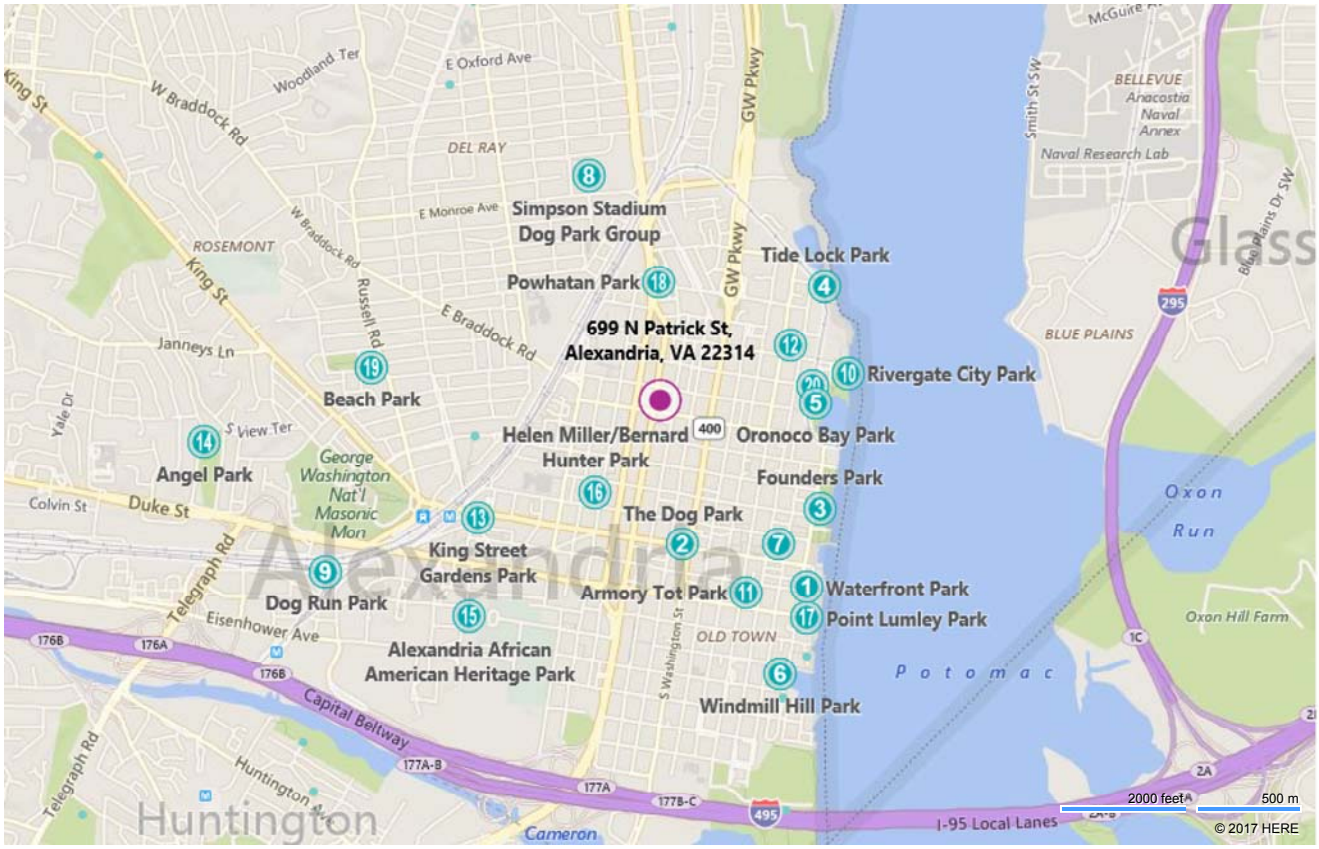
16. **Helen Miller/Bernard Hunter Park**
    Address: 224 N Fayette St, Alexandria, VA 22314

17. **Point Lumley Park**
    Address: 1 Duke St, Alexandria, VA 22314
    Website: https://www.alexandriava.gov/recreation/info/default.aspx?id=12290

18. **Powhatan Park**
    Address: 1010 Douglas St, Alexandria, VA 22314

19. **Beach Park**
    Address: 700 Johnston Pl, Alexandria, VA 22301

20. **Oronoco Bay Park**
    Address: Madison St, Alexandria, VA 22314


King St
W Braddock Rd
Woodland Ter
E Oxford Ave
DEL RAY
GW Pkwy
Smith St SW
BELLEVUE
Anacostia Naval Annex
Naval Research Lab
McGuire
Glass
E Monroe Ave
Simpson Stadium Dog Park Group
ROSEMONT
W Braddock Rd
Russell Rd
Tide Lock Park
Powhatan Park
E Braddock Rd
699 N Patrick St, Alexandria, VA 22314
Bluemont Dr SW
BLUE PLAINS
Janneys Ln
Rivergate City Park
Beach Park
Yale Dr
S View Ter
Helen Miller/Bernard
Oronoco Bay Park
Hunter Park
Angel Park
George Washington Nat'l Masonic Mon
Founders Park
Colvin St
Duke St
The Dog Park
Oxon Run
King Street Gardens Park
Telegraph Rd
Dog Run Park
Armory Tot Park
Waterfront Park
Point Lumley Park
Eisenhower Ave
Oxon Hill Farm
OLD TOWN
Alexandria African American Heritage Park
S Washington St
Potomac
Windmill Hill Park
Capital Beltway
Huntington Ave
Huntington
Cameron
I-95 Local Lanes
2000 feet
500 m
© 2017 HERE

TAB 24

Section 106 - Memorandum of Agreement