## Appendix L: Historical, Architectural, Archaeological, and Cultural Resources Documents

1. Avion Solutions Group, LLC October 27, 2025, Response to DHR's August 28, 2025, Comments
2. Section 106 Technical Report with Project Review Application Form and Cultural Resources Due Diligence Report*
3. Part 139 Certification Viewshed Summary**

* Catawba Nation response is contained in Appendix E, Consultation Reference Number 1d.
VDHR response is contained in Appendix E, Consultation Reference Number 24c.
** VDHR response is contained in Appendix E, Consultation Reference Number 24e.

## Appendix L: Historical, Architectural, Archaeological, and Cultural Resources Documents

1. Avion Solutions Group, LLC October 27, 2025, Response to DHR's August 28, 2025, Comments

From: **Peter Byrne, Director,**
**Avion Solutions Group, LLC**

Date: **October 27, 2025**

Subject: **ASG Response to Virginia Department of Historic Resources August 28, 2025, Memorandum to Federal Aviation Administration**

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On August 28, 2025, the Federal Aviation Administration (FAA) Environmental Protection Specialist Susan B. Stafford received a memorandum from Adrienne Birge-Wilson, Virginia Department of Historic Resources (DHR) Review and Compliance Division. The 8/28/25 DHR memorandum provided Ms. Birge-Wilson's comments on the project scoping materials provided to DHR by FAA on August 13, 2025, for the Manassas Regional Airport (HEF) Part 139 Certification and Terminal Redevelopment Programmatic Environmental Assessment (PEA) and its 16 projects. DHR has assigned the PEA DHR File No. 2025-4507.

Herein, Avion Solutions Group LLC (ASG) offers its responses to DHR's comments. The responses were prepared by Carol S. Weed (M.A.; RPA #989090) and reviewed by Mr. Peter Bryne who is the ASG Principal and Director. Ms. Weed is qualified under the Secretary of the Interior's Standards for Archaeology. She has worked professionally as an archaeologist throughout the Eastern Woodlands since the 1970s (**Attachment 1: CSW CV**).

Figures that support the responses to the comments are presented in **Attachment 2**. **Attachment 3** is a copy John Mullen's 2005 *Phase I Archeological Investigations of the circa 120 Acre Glen Gery Property, Prince William County Virginia.* This report is not readily available and is not on file at DHR.

In the DHR comment sections below, DHR's comments are italicized and presented verbatim. The ASG response to each comment then follows.

**DHR Comment 1**

*The initiation letter [provided the] other federal, state, local agencies, and tribal nations that are being consulted. Have other potentially interested parties been identified? If so, please provide a list.*

**ASG Response to Comment 1**

FAA initiated consultation with DHR and the Tribes/Nations that hold heritage interest in the area through the NEPA scoping process. ASG, with FAA and Airport approval, submitted the same scoping packages to Prince William County (PWC) and City of Manassas government departments.

Prince William County Planning, as a Certified Local Government (CLG), has requested consulting party status which will be granted. We have not consulted directly with the City Board but will be contacting them as an identified interested party. We believe that discussion with both agencies is important as the Indirect Area of Potential Effects (APE) used during the analyses of project effects on Department of Transportation Section 4(f) and Historical, Architectural, Archaeological, and Cultural (HAAC) resource categories is larger than the Airport's boundary (**Figure 1 – Indirect APE Boundary**). The results of the background research found that County parks, recreation facilities, and historic properties are present and that City historic properties, registered with DHR, also are within the Indirect APE.

**DHR Comment 2**

*Will FAA be using the NEPA process to coordinate their public outreach efforts in accordance with NEPA and Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (54 U.S.C. 300101 et seq.) and its implementing regulation, "Protection of Historic Properties" (36 CFR part 800)?*

**ASG Response to Comment 2**

Yes. The FAA will be using the NEPA process to coordinate public outreach.

**DHR Comment 3**

*Regarding archaeological resources within the Area of Potential Effects (APE), the Manassas Regional Airport property was last surveyed for archaeological resources in 1978. This investigation identified five (5) archaeological sites within the Airport property (44PW0011 through 44PW0015, inclusive). None of these sites were evaluated for their eligibility for listing in the NRHP. The subsequent development of the Airport property has likely resulted in the destruction of all of these sites. While sites 44PW0014 and 44PW0015 are now located beneath existing Airport facilities, 44PW0011, 44PW0012, and portions of 44PW0013 have currently unknown remaining archaeological integrity. If redeveloped related impacts are proposed in the locations of these sites, DHR recommends an archaeological disturbance assessment to determine whether or not the soils in these areas retain integrity.*

**Comment 3 ASG Response**.

While Douglas McLearen's 1978 survey was the first survey, subsequent surveys and site investigations were completed within the Airport boundaries by Smith (1978), Jones and McDaid

(1992), Deitrick and McDaid (1994), John T. Mullen (2005), and Tery Harris (2009, 2017). The full citations are presented herein in *References Cited* section.

The only 2025 PEA project setting not considered during these investigations is PEA Project #7, the proposed location of the new Snow Removal Equipment building. Aeriel photographs taken over the Airport in 1994, 2006, and 2008 indicate that Project #7's surface was graded and recontoured (**Figure 2 – PEA Project #7 Location in 1994, 2006, and 2008**). The relocated soil now forms a mound in the proposed project location. Attachment C – Photographs to the FAA's cover letter dated August 3, shows the mound on Photographs 19 and 21.

The investigations conducted by McLearen, Mullen, Jones and McDaid, and Harris found archaeological sites in their survey areas. Smith completed the only testing performed on any of the sites and those were the ones identified by McLearen (1978). Sites 44PW0011 through 44PW0015 were identified during McLearen's May 1978 survey of phases II and III of the Airport's *Master Plan of Development of Manassas Municipal Airport* (McLearen 1978: Appendix II, Map 3). Site 44PW0012 is located within PEA Project #14 and Site 44PW0013 within PEA Projects #1 and #4. Sites 44PW0011, 44PW0014 and 44PW0015 are outside of any of the identified PEA project boundaries. DHR maps the area of the 1978 McLearen survey as shown on **Figure 3**.

McLearen (1978:1) noted that "all areas of proposed phase II and III development (Map 3) were surveyed. These additional areas were investigated because phase II construction would involve the grading and removal of fill from the surrounding high ground in order to facilitate proper drainage of the runway and taxiway areas" (*emphasis added)*. Except for Site 44PW0015, the sites that McLearen found were on the 'high ground' formed by the 180-ft and 190-ft elevation contours. Site 44PW0015 was the lowest of the five and that site lay on the 170-ft contour with a slight dip to the east onto the Cannon Branch floodplain.

**Figure 4** illustrates the Airport as depicted on the USGS 7.5-minute Nokesville quadrangles dated 1971, 1983, and 1994 (**Figure 4**). The quadrangles illustrate not only the progression of Airport development between 1971 and 1994 but the impact of that development on the original topography. Between 1971 and 1983, construction progressed from west to east with the west side runway completed and the east side runway begun and finalized to its initial length. Between 1983 and 1998, the east side runway was lengthened by extending it southward across Broad Run. By 1994, all of the original 'high ground' that hosted McLearen's sites had been broken (shown as the dashed contour lines) and recontoured.

The locations of McClearen's Sites 44PW0011 through 44PW0015 are illustrated on aerial photographs dated 1994, 2002, 2005, 2006, 2016, 2020, and 2025 (**Figures 5 and 6**). The plotted locations are based on the latitude and longitude coordinates provided in DHR's V-CRIS. The plotted locations, when applied to aerial photographs, show that each of the site areas was affected by Airport facility construction that involved soil stripping, underground facility development, or both.

Before those actions, McLearen had characterized the survey conditions in 1978 in the eastern half of the Airport lands by noting that "[t]he entire area of proposed development has been

under cultivation for many years prior to the construction of the existing airfield and through the present day. With the exception of a narrow stand of mixed hardwoods along the west bank of Cannon Branch, the survey area is an unbroken series of disc-plowed fields" (McLearen 1978:2). McLearen's five sites (44PW0011-44PW0015) were found in the "disc-plowed fields".

McLearen (1978) surveyed using systematic transects and general walkover. He did excavate a small number of shovel tests at each site to determine the depth of the plowzone. In all instances, he found that the plowzone, usually about 1-foot (ft.) thick, overlays a yellowish or reddish clay B-horizon (McLearen 1978:3-4). McClearen (1978:15) concluded "It is the opinion of this investigator that some form of salvage test excavations should be undertaken before the proposed developments to the airfield begin. The highest priority for salvage should go to Areas 1, 2 and 5 with Area 2 taking top priority. The remaining areas listed might be investigated on a less intensive basis as suggested in the preceding section of this report."

His conclusion resulted in the decision that additional archaeological investigations were warranted at Areas 1 (44PW0012), 2 (44PW0014), and 5 (44PW0015) and that less effort could be expended on Areas 3 (44PW0013) and 4 (44PW0011) (**Figure 7**). James Smith began those investigations in September 1978. By September, all the sites "were located in a large field of standing mature corn and an accompanying undergrowth of thick field grass" (Smith 1978:4, also Plates 1 and 2). Smith's report is not page numbered, so the page references here and elsewhere are the pdf page numbers.

The level of effort expended by Smith (1978) is summarized on Table 1 below. The sizes of the sites noted are McLearen's and the parenthetical size, if different, is Smith's.

| Site, Size | Shovel Tests | Depth of Excavation | Notes |
|---|---|---|---|
| 44PW0011, 150x250 ft. (pgs. 6-8) | Shovel tested but the number of tests unspecified. | Plowzone ranged from 0.7 to 1.0 ft., with the average 0.8 ft. | The 11 artifacts were recovered from plowzone (n=3) and surface. |
| 44PW0012, 200x450 ft. (pgs. 8-17) | 100 randomly placed measuring 1x2 ft.; also 2, 2.5x15 ft trenches in a surface feature (rubble) | Thru plowzone into B-horizon. | 165 artifacts recovered from plowzone or the brick and rubble concentration. |
| 44PW0013, 350x450 ft. (pgs. 17-18) | 17 shovel test transects (each 450 ft. long). 50 randomly placed shovel tests total with | Thru plowzone into B-horizon with an average depth of 0.8 ft. for plowzone. | The 4 artifacts were recovered (3 chipped stone, 1 salt-glazed stoneware crock fragment). |

| Site, Size | Shovel Tests | Depth of Excavation | Notes |
|---|---|---|---|
| | coverage on each transect. | | |
| 44PW0014, 450 x 425 ft. (reduced to 250 x 450 fts) (pgs. 18-22) | 3, 450 ft. long transects spaced on 100 ft. intervals. Each transect tested by 3x5 ft. trenches (n=26). An additional 35 randomly placed 1x1 ft. shovel tests along the eastern perimeter of the site. | All excavations into the underlying B-horizon. Plowzone thickness ranged from 0.4 to 1.1 ft. with an average of 0.8 ft. | 251 artifacts were found in plowzone or on the surface. |
| 44PW0015, 300 x 500 ft. (pgs. 23-26) | Surface survey id'd two concentrations. In total, 35 3x3 ft. test pits were excavated. | Plowzone ranged from 0.3 to 0.8 ft. with an average of 0.6 ft. | The 18 artifacts were found in plowzone or on the surface. |

The results of Smith's testing did not yield substantively different results than those recovered by McLearen. Additional diagnostic artifacts in the form of projectile points were found but they were in plowzone. No Indigenous features or intact historic ones were located though remnants of an historic foundation were identified. No artifacts were recovered below the plowzone which, overall, was thin averaging less than a foot in thickness. Smith (1978:28) concluded:

> "On the basis of the Phase II fieldwork and the subsequent analysis of the sites involved, it is the author's opinion that none of the five sites warrants any future, full scale investigation before their development by the Manassas Municipal Airport. Further excavations of sites PW 12 and PW 14 would prove useful in adding information to that already gained by this survey. But based on the type of material recovered and the unstratified nature of both sites, it is believed that this information would not significantly increase our knowledge for either the Late Archaic or the Late Historic periods. Though it should be recognized that the scope of the fieldwork could not evaluate the entirety of these two areas in regard to all aspects of their archaeological potential. As a safeguard, it is strongly recommended that a qualified archaeologist be present during the initial grading and construction activity within sites PW 12 and PW 14."

ASG found no record of an archaeologist monitoring the reported locations of 44PW0012 and 44PW0014 when they were disturbed. As shown in the aerial review, none of the site locations are intact and all have been subjected to soil stripping and recontouring.

**DHR Comment 4**

*The location of the proposed Economy Parking Lot appears to have been undisturbed by modern development. Based on this information, DHR recommends a Phase I archaeological survey of the Economy Parking Lot area be completed in order to assess the presence of previously unidentified archaeological resources. The studies must be conducted by or under the direct supervision of a qualified professionals (sic) meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 44738-39) in the appropriate fields and should be consistent with DHR's Guidelines for Conducting Historic Resources Survey in Virginia (September 2017). One bound copy and one digital copy of the resulting report should be submitted in to our office for review and approval prior to implementation of the undertaking. After reviewing the results of the studies, we will be able to advise you whether any further investigations and/or mitigative actions are warranted.*

**Comment 4 ASG Response**

Available information indicates that Project #5 – *Economy Parking Lot* is undisturbed by modern development. However, according to DHR records it was surveyed by McLearen (1978) and Harris (2017). Harris also cited Mullen (2005) in her report and said that he had surveyed the subject area. Mullen (2005) submitted his report to the Prince William County archaeologist, and it is attached herein. Mullen subjected the area encompassed by the 190-ft contour to systematic shovel testing. As shown on **Figure 8,** this represents a relatively small part of the larger proposed Economy Parking Lot area which, in turn, was smaller than both the East Parcel that Harris considered and the area considered in 1978 by McLearen.

In 2005, Mullen completed a Phase I archaeological survey of the location depicted in orange on Figure 8. The work was done for Glen Gery Corporation, and it covered approximately 120 acres of the Glen Gery Brick property. Mullen (2005:3) characterized the location now proposed as the site of the PEA Economy Parking Lot as "…within the floodplain of Cannon Branch; the exception being a small terrace on the southwest side of Cannon Branch." The field methods included a walkover of the entire area and then, with the concurrence of the Prince William County Archaeologist, systematic shovel testing of the only undisturbed high contour in the project area (Mullen 2005:32). In total, 22 shovel tests were excavated through an upper stratum characterized as an Ao/Ap horizon that was less than 1-foot thick. The underlying B-horizon was the same yellowish or reddish clay noted by McLearen and Smith within the Airport infield. The excavations yielded two flakes (1 hornfels, 1 quartz) and both were recovered from the upper horizon. Mullen (2005:36) concluded "These artifacts do not constitute an archeological site; rather, they are considered to be isolated finds, representing transient use of the landform by prehistoric populations. No archeological sites were found on the property, and no additional work is recommended."

In 2016, RS&H, Inc. submitted a scoping request to the Prince William County Planning Department informing them of future commercial development at Manassas Regional Airport, which subsequently was not constructed. On December 9, 2016, Daniel J McGettigan (Long Range Planning Manager, PWC Planning Department) responded to David Alberts (RS&H).

McGettigan said “Some land in the East Parcel Development Area has been subject to archaeological survey. Consultation with the County Archaeologist on the scope of the archaeological survey is requested.”

Based on consultation efforts, archaeological survey was completed by Tery Harris in November 2016, and a subsequent metal detector survey was done in February 2017. She reported the results in the April 2017 report entitled *Phase I Archaeological Study for the Proposed West Corporate Development and East Parcel Development at Manassas Regional Airport, City of Manassas, Prince William County, Virginia.* Included in the report was reference to both the McLearen (1978) and the Mullen (2005) survey. Her team conducted a metal detector survey which identified the presence of objects over the East Parcel. As shown on Figure 8, the metal objects concentrated in the vicinity of the knoll that had been tested by Mullen.

Harris (2017:47) characterized the results as follows:

> “As the eastern survey area had been subject to adequate subsurface testing during the 2005 Thunderbird Associates [Mullen 2005] study, the current investigation in this area consisted solely of the metal detector survey. The roughly 14 acre survey area produced only 24 finds (excluding metallic items from modern dumping), all but three of which represent twentieth century material. This included 13 brass bases from twentieth century shotgun shells, two twentieth century bullet casings, a wire nail, a jar lid, a pull tab, a can lid, and a piston. Three artifacts could not be definitively dated, including a corroded ferrous disk and two corroded partial horseshoes…None of the material recovered appears to be clearly associated with either Confederate or Union troops, or rises to the level of an archaeological site.”

She concluded “No archaeological resources were identified, and no further work is recommended” (Harris 2017:49). The FAA submitted Harris’ report to DHR on May 5, 2017, and stated “the FAA has determined that the Proposed Undertaking would not adversely affect any known properties that Section 106 of the NHPA protects. The FAA respectfully requests your concurrence with this determination per 36 CRF 800(d)(1).” By letter dated June 2, 2017, DHR stated that “It is our opinion that the fieldwork and report are consistent with applicable standards and guidelines…Based on the information provided, we find that the impact to archaeological properties are unlikely and no further archaeological survey is warranted in support of this project.”

Based on the prior investigations and the resultant conclusions concerning those investigations, no further archaeological survey of Project #5 – *Economy Parking Lot* is needed.

**DHR Comments 5 and 6**:

*We (DHR) look forward to reviewing the APE for direct and indirect effects and the identification of historic properties.*

*We (DHR) look forward to “engaging in consulting parties’ meeting as this project develops.*

**Comment 5 ASG Response**.

ASG defined the direct and indirect APEs as follows:

The direct impact areas for the 16 PEA projects are defined as the project outlines plus 100-feet around each of them to serve as a construction buffer. The project outlines are depicted in **Figure 9,** but the buffers are not because of scale.

Because Section 4(f) considers historic properties, the same definition of the indirect APE used for cultural resources (PEA Section 3.2.8) is used in Section 4(f). Typically, an APE might be defined as a ½-mile or 1-mile search area in order to consider both the direct and indirect effects of a proposed action. In this case, however, a 1-mile search area did not adequately consider the possible impacts associated with aircraft noise or visual effects that might result from the implementation of commercial air service.

The indirect APE boundary, therefore, was drawn as a rectangle bracketing the full extent of the Proposed Action 2040 60 DNL noise contour (see Figure 1) which the PEA identifies as five years post completion of the 16 PEA projects. By using the proposed contours, the horizontal extents of the noise effects are more easily understood and mapped. The indirect APE rectangle measures 29,531 ft north-south and 11,719 ft east west covering a total of about 7,945 acres. The direct APE is in the center of the indirect APE.

Regarding the DHR's comment about "engaging in consulting parties' meeting" we too look forward to engaging with the consulting parties.

It is ASG's conclusion that an archaeological disturbance assessment covering the reported locations of Sites 44PW0011, 44PW0012, and portions of 44PW0013 is unwarranted as these site locations were subject to testing in 1978 and further work was not recommended. Additionally, the plotted locations of the sites have been graded and recontoured since they were initially identified in 1978. Sites 44PW0014 and 44PW0015 were also previously surveyed, graded, and recontoured. The sites are covered by existing airfield pavements and are located outside of the identified PEA project boundaries.

Similarly, the PEA Project #5 area was subject to prior investigations in 1978, 2005, and 2017. FAA determined and DHR concurred that the 2017 project, considerably larger in areal extent than PEA Project #5, was unlikely to contain significant archaeological properties.

## REFERENCES CITED


Birge-Wilson, Adrienne. 2017 (June 2). Letter: A. Birge-Wilson to Susan Stafford, FAA re: Manassas Regional Airport West Corporate Development and East Parcel Development City of Manassas DHR File No. 2017-0348, review of the 2017 Phase I report authored by Tery Harris for Elizabeth Anderson Comer/Archaeology.

Deitrick, Veronica L. and Christopher McDaid. 1994 (September 16). *A Phase I Archaeological Survey of the Proposed Helicopter Facilities Manassas Regional Airport Prince William County, Virginia C&P Job No. 9214; AIP No. 3-51-0030-10*. DHR File No. 93-0611-F. Prepared by The William and Mary Center for Archaeological Research, Department of Anthropology, The College of William and Mary, Williamsburg, VA, for Campbell and Paris Engineers, Chantilly, VA.

Harris, Tery 2009 (February). *Phase I Archaeological Survey for the Proposed Extension of Runway 16L/34R and Taxiway B, Manassas Regional Airport, City of Manassas, Prince William County, Virginia*. Prepared by Elizabeth Anderson Comer/Archaeology for HNTB Engineering. DHR PW-323.

2017. *Archaeological Study for the proposed West Corporate Development and East Parcel Development at Manassas Regional Airport, City of Manassas, Prince William County, Virginia.* Prepared by Elizabeth Anderson Comer/Archaeology, Baltimore, MD for the Federal Aviation Administration, City of Manassas, and the Manassas Regional Airport. DHR File No. 2017-0348.

Jones, Joe B. and Christopher McDaid. 1992 (May 20). *A Phase I Cultural Resource Survey of the Proposed Broad Run Wetland Mitigation Project Prince William County, Virginia Project: WLBO-96A-101, PE101, C501*. DHR PW-072. Prepared by The William and Mary Center for Archaeological Research, Department of Anthropology, The College of William and Mary, Williamsburg, VA, for the Virginia Department of Transportation, Richmond, VA.

McClearen, Douglas C. 1978 (May). *Archaeological Reconnaissance of the Manassas Municipal Airport, Prince William County, Virginia*. Prepared by Southside Historical Sites, Inc., Williamsburg, VA, for Hayes, Seay, Mattern and Mattern, Rockville, MD. DHR PW-2.

Mullen, John T. 2005 (August). *Phase I Archeological Investigations of the circa 120 Acre Glen Gery Property, Prince William County Virginia.* Prepared by Thunderbird Archaeology, Chantilly, VA, WSSI Project #21225.001, for Glen Gery Corporation, Wyomissing, PA.

Smith, James M. 1978 (October 18). *Phase II Archaeological Survey of the Manassas Municipal Airport, Prince William County, Virginia*. Prepared by Southside Historical Sites, Inc., Hopewell, VA, for Hayes, Seay, Mattern and Mattern. DHR PW-5.

Stafford, Susan. 2017 (May). Letter: S. Stafford to Roger Kirchen, Director, Division of Review and Compliance, VDHR re: A Request for Review and Concurrence Regarding the Area of Potential Effect and Other Section 106 Determinations for the West Corporate Development and East Parcel Development at Manassas Regional Airport.

**Links**

**City of Manassas Historic Resources Board**

https://www.manassasva.gov/things_to_do/manassas_museum/manassas_historic_resources_board.php

# ATTACHMENT 1 -
# Carol S. Weed CV

**CURRICULUM VITA**
**CAROL S. WEED, M.A. (RPA #989090)**

**EDUCATION AND TRAINING COURSES**

1970 B.A. (with honors), Prescott College (Anthropology/Archaeology)
1975 M.A., University of Arizona (Anthropology/Archaeology)
1993 Federal Energy Regulatory Commission, Office of Pipeline and Producer Regulation, Natural Gas Pipeline Environmental Compliance training course
1996 Advanced seminar on Preparing Agreement Documents Under Section 106 of the National Historic Preservation Act
2000 Ohio Department of Transportation Office of Environmental Services Categorical Exclusion training class
2000 Statistical Research, Inc., Section 106 in the New Regulatory Environment workshop course
2002 OSHA Excavation Safety Training for Competent Persons course #1194
2002 Ohio Department of Transportation Office of Environmental Services Section 106 / National Register Eligibility Training
2003 Southern Gas Association, Environmental Inspection & Construction Compliance, Houston, Texas
2004 Southern Gas Association, Environmental Inspection & Construction Compliance, Houston, Texas
2005 Southern Gas Association, Environmental Inspection & Construction Compliance, Houston, Texas
2005 OSHA Excavation Safety Training for Competent Persons course certificate #40488

**WORK HISTORY**

2018-Present Independent Consultant (completed projects ACME Heritage Consulting; The Alessi Organization; Avion Solutions Group LLC; KGO Consulting; Kimley-Horn; Kushner Companies; Matrix New World Engineering; Merchant Aviation; NYC Landmarks Preservation Commission; PW Grosser, Inc.; VHB, Inc.)
2011-2018 Senior Project Manager/Cultural Resources (Environmental Group) and Task Manager/Natural and Cultural Resources (Airport Group), VHB, Inc., New York City and White Plains, New York (retired April 2018).
2006-2011 Senior Archaeologist, VHB, Inc., Watertown, MA.
1998-2006 Project Manager, Gray & Pape, Inc., Cincinnati, Ohio.
1993-1998 Principal Investigator, Gray & Pape, Inc., Cincinnati, Ohio.
1991-1993 Director, Cultural Resources Management, EMANCO Inc., Houston, Texas
1989-1991 Senior Archaeologist, EMANCO Inc., Houston, Texas.
1986-1989 Partner, Research Associates, Yucaipa, California.
1979-1986 Associate Archaeologist, New World Research, Inc., Pollock, Louisiana, and Fort Walton Beach, Florida.
1978-1979 Instructor, Texas A&M University, College Station, Texas.
1976-1979 Archaeologist, CRM Program, Texas A&M University, College Station, Texas.
1973-1974 Instructor (College) and Field Director, Central Arizona Ecotone Project. Prescott College, Prescott, Arizona and Southern Illinois University, Carbondale, Illinois.

**PROFESSIONAL ARCHAEOLOGICAL MEMBERSHIPS (CURRENT)**

Eastern States Archaeological Federation
Council of Northeast Historical Archaeology (CNEHA)
New Hampshire Archaeological Society

Massachusetts Archaeological Society
New York State Archaeological Association (Louis A. Brennan/Lower Hudson Chapter, Vice-President 2016-2024; Board Member 2025-Present)
New York Archaeological Council (President 2023-2025; Board Member 2017-2023 and 2025-2028)
Society for American Archaeology

**CERTIFICATION**

1992 Register of Professional Archaeologists, Field Research (#989090; current)
1993 Ohio Historic Preservation Office, Prehistoric Archaeology
2002 Kentucky Department of Transportation, Prehistoric and Historic Archaeology
2011 New York City Landmarks Preservation Commission, listed

**PUBLIC OFFICES**

1984-1986 Vice-Chairman, City of Fort Walton Beach, Florida, Historic Sites and Structures Board

**VOLUNTEER POSITIONS**

1992-1993 Consulting Archaeologist, Baytown Historical Museum, Baytown, Texas. Classification and accessioning of nineteenth and twentieth century vernacular artifacts (including paper goods, glass, ceramics, and mechanical devices).

2012-2018 Consulting Archaeologist, King Manor, Jamaica, Queens County, NY. With the permission of NYC Landmarks Preservation Commission completing the cull of the Hofstra University King Manor field school collections.

2015-2022 Consulting Archaeologist, NYSAA Louis A. Brennan Chapter, preparing the Piping Rock site collection for research use.

2018-Present Volunteer Archaeologist, NYC Landmarks Preservation Commission, Nan Rothschild Research Center and Repository, preparation of the Eastchester Pipeline; Kazimiroff; Riverdale Park Archaeological Project (RPAP); Solecki-Wisniewski; Van Cortlandt Park archaeological collections; 2024 Stadt Huys and 7 Hanover architectural materials culling (South Street Seaport Museum) and oyster culling sample (debris to Billion Oyster Project).

**STUDENT POSITIONS (Supporting RPA Certification)**

1967 Student field technician, 8 weeks, Otero Junior College Summer Field School (June-July), excavations at Fort St. Vrain and Fort Vasquez, Colorado (Fur Trading era forts). Professor: Dr. Galen Baker.

1968 Student field technician, 8 weeks, Prescott College Summer Field School (June-July), excavations on Black Mesa, Arizona (prehistoric Anasazi, historic Navajo). Professor: Dr. Robert C. Euler, Dr. George J. Gumerman.

1969 Student crew chief, 11 weeks, Prescott College Summer Field School (June-August), excavations on Black Mesa, Arizona (prehistoric Anasazi, historic Navajo). Professor: Dr. Robert C. Euler, Dr. George J. Gumerman.

1970 Student laboratory director, 20 weeks, Prescott College Center for Man and Environment (January thru May), analysis of prehistoric Anasazi, Hohokam, Salado, and Sinagua ceramics and groundstone. Professor: Dr. Robert C. Euler.

1970-1972 Research Assistant, 1/2-time position (20 hours/week, September to April 1970-1971 and 1971-1972), University of Arizona Department of Anthropology, Arizona State Museum Highway Salvage Program, analysis of prehistoric Hohokam ceramics and groundstone artifacts. Professors: Dr. Emil Haury, Mr. Laurens Hammack, Dr. Gwinn Vivian.

1971 Student field technician, 11 weeks, Tabun Archaeological Project, Israel (May-August), stratified

rockshelter excavation and chipped stone analysis. Professor: Dr. Arthur Jelinek.

**SELECT CULTURAL RESOURCES AND COMPLIANCE ASSESSMENTS (2025-1980)**

2025 Deputy Project Manager and Task Manager/Cultural and Natural Resources. Westchester County Airport (HPN) Environmental Assessment, NETJETS Buildings 6, 11, and 26. (CSW13108 2024-007) for Avion Solutions Group LLC. .

2024 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). Cultural Resources Due Diligence of a Context Area Encompassing Three Port Johnson Locations (85 East 2nd Street, 240 East 5th Street, and 2 New Hook Road), Bayonne, Hudson County, New Jersey. (CSW13108 2024-018) for The Alessi Organization.

2024 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). Re-use of the Hudson & Manhattan Railroad Powerhouse, 60-84 Bay Street, Jersey City, New Jersey. (CSW13108 2024-014) for The Alessi Organization.

2024 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). Re-use of the Hudson & Manhattan Railroad Powerhouse, 60-84 Bay Street, Jersey City, New Jersey. (CSW13108 2024-014) for The Alessi Organization.

2024 Task Manager, Natural and Cultural Resources and Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures, Section 4f). Westchester County Airport Supplemental EA - Snow Removal Equipment Storage Building. (CSW13108 2024-003) for Avion Solutions Group LLC under contract to Westchester County Airport.

2024 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures, Section 4f). Baltimore Washington International (BWI) Hangar Replacement Project, NEPA CATEX Documentation Sections 5-2.b(1) and 5-2.b(2) and Preparation of Nation/Tribal Agency Consultation Packages. (CSW13108 2024-005) for HMMH.

2023 Specialist Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures, Section 4f). Rehabilitation of Pier 6 within Bush Terminal (Brooklyn Borough Block 715, P/O Lot), Sunset Park, Brooklyn. (CSW13108 2023-002) for Matrix New World Engineering (23-0076).

2023 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures, Section 4f). NEPA Compliance, FAA ALP Update, Atlantic City Airport, New Jersey. (CSW13108 2023-004) for Matrix New World Engineering.

2023 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures, Section 4f). Due Diligence and subsequent CATEX, JFK Snow Access Road. (CSW13108 2023-006) for Port Authority of New York & New Jersey.

2023 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures, Section 4f). NEPA Documentation, Replacement of Bridge No. 03692R – New Haven Line over Strawberry Hill Avenue, Norwalk, CT. (CSW13108 2023-007) for Matrix New World Engineering under contract to Gannett Fleming, Inc.

2023 Task Manager, Natural and Sr. Cultural Resources Specialist. Westchester County Airport Supplemental EA – Million Air Redevelopment/Development Project. (CSW13108 2023-023) for Avion Solutions Group LLC under contract to Westchester County Airport.

2023-Present Deputy Project Manager and Sr. Cultural Resource Specialist. Manassas Regional Airport Part 139 Certification and Terminal Redevelopment Environmental Assessment. (CSW13108 2023-025) for Avion Solutions Group LLC and Avports LLC.

2022 Principal Investigator/ Archaeology. 453 River Road (Lots 66-3, 66-4), Shelton, CT, Historic Preservation Review in Response to DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities, Appendix G Specifications. (CSW13108 2022-004) for VHB, CT DEEP, CTSHPO.

2022 Sr. Cultural Resource Specialist. NYCT ADA Upgrades and Circulation Improvements Project, Broadway Junction Station, Callahan-Kelly Playground, and Parking Lots, Brooklyn, Kings County, New York, 11233, Section 4(f) De Minimis Review. Matrix to New York City Parks & Recreation in coordination with Metropolitan Transportation Authority). [CSW13108 2022-008].

2022 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). Anbaric Development Partners, LLC Hera Power Link Project. Due Diligence HVDC Routes, HVAC Route, 8 Alternative Options; Phase IA Archaeological Assessment; Reconnaissance-Level Historic Resource Survey. (CSW13108 2022-014) for Matrix 22-0298 Article 7 Ocean Grid. (project closed)

2022 Principal Investigator/ Archaeology. Phase IA Archaeological Assessment, Proposed Warehouse, Town of Fishkill, Dutchess County, New York. SEQR. (CSW13108 2022-015) for P.W. Grosser, Inc., client, NYOPRHP.

2022 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). New Jersey Turnpike Authority (NJTA) Request for Permission to Enter a Part of The Alessi Organization's Property in Block 13, Lot 1, Bayonne, New Jersey, In Order to Complete Phase IB Archaeological Investigations. (CSW13108 2022-021) for Matrix New World Engineering (22-0841) under contract to The Alessi Organization.

2022 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). Cultural Resources Due Diligence Assessment of the Constable Hook Cemetery and client-defined Context Area. (CSW13108 2022-023) for Matrix New World Engineering (22-1086) under contract to The Alessi Organization.

2022 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures). Cultural Resources Due Diligence Assessment of the Duraport location, Bayonne, Hudson County, New Jersey. (CSW13108 2022-022) for Matrix New World Engineering (22-1087) under contract to The Alessi Organization.

2022 Sr. Cultural Resource Specialist (Archaeology, Buildings/Structures. Section 106 Consultation, New Jersey Transit IFB No. 20-089X Final Design, Construction, and Commissioning of the Roseville Tunnel Rehabilitation and Associated Track Bed Work in Andover and Byram Townships, Sussex County, New Jersey. (CSW13108 2022-027) for Matrix New World Engineering (22-1176).

2021-2022 Project Manager/Principal Investigator. Strong's Yacht Center-Proposed Boat Storage Buildings,

570 W. Mill Road, Hamlet of Mattituck, Town of Southold, Suffolk County, New York. SEQR, Archaeology Phase IA, IB, II and Reconnaissance Level Historic Resource Survey. (CSW13108 2021-001) for P.W. Grosser, Inc., Town of Southold.

2021 Principal Investigator/Archaeology. Phase IA Cultural Resources Assessment, Proposed Retail Store, 22 and 81 Route 6, Town of Somers, Westchester County, New York. SEQR. (CSW13108 2021-005) for VHB client, Town of Somers, NYOPRHP

2021 Principal Investigator/Archaeology. Due Diligence Reviews: Allegany County, Chataqua County, Genessee County, Herkimer County, NY. (CSW 13108 2021-006, -009, -010, -012, and 014) for Master Services Agreement, Gray & Pape, Inc., Cincinnati.

2021 Principal Investigator/Archaeology. 2 and 24 Pimpewaug Road, Wilton, CT, Historic Preservation Review in Response to DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities, Appendix G Specifications. Steps 1 and 2 Summary Letter. (CSW13108 2021-008) to VHB, client for CT DEEP, CTSHPO.

2021 Sr. Cultural Resource Specialist. Section 106 and Section 14.09 Coordination for Design of Accessibility Upgrades at 8 Stations and Elevator Replacements at 5 Stations, various locations Bronx, Kings (Brooklyn), New York (Manhattan), and Queens Boroughs, New York. NEPA/SEQR Project Notifications with Due Diligence Assessments. Matrix to New York City Metropolitan Transportation Authority Construction & Development. (CSW13108 2021-010).

2021-2022 Sr. Cultural Resource Specialist. Tompkinsville Esplanade and Dockbuilders Pier (NYOPRHP #20PR00553), Bay Street Landing, Tompkinsville, Borough of Staten Island, Richmond County, New York. Agency Coordination (NEPA, SEQR, CEQR), Phase IA (NEPA, SEQR). (Matrix 18-478) for FEMA, NYC Economic Development Corporation. [CSW13108 2021-013].

2020 Principal Investigator. HK Ventures LLC Proposed Industrial Park, 4285 Middle Country Road, Town of Riverhead, Suffolk County, New York. SEQR, Archaeology Phase IA, IB, and II. (CSW13108 2020-003) with P.W. Grosser, Inc. for HK Ventures LLC, NYOPRHP

2019 Principal Investigator. Phase IA Archaeological Assessment, Antrim NH / FUZE #61982033, Hillsborough County, NH. With ACME Heritage Consultants (CSW13108 2019-001; Acme 19-021-NH).

2019-2020 Principal Investigator. Miller's Pond, Town of Ramapo, Rockland County, New York. NYOPRHP Project Notification with Phase IA Memorandum, SEQR DEIS Chapter L, and Response to NYOPRHP for supplemental information on the Clubhouse (NYOPRHP USN #08704.000380). (CSW13108 2019-002_KH) for Kimley-Horn of New York, P.C., for Mount Ivy LLC.

2019-2020, halted (pandemic). Task Manager/Cultural and Natural Resources. Master Plan Update for Westchester County Airport (HPN). SEQR, NEPA. Cultural resources impact assessments for Aesthetics, Historic and Archaeological Resources. (CSW13108 2019-005) for Merchant Aviation, LLC for County of Westchester, NY.

2019-2020 Task Manager/Cultural Resources, Marion Carll Farm, Town of Huntington, Suffolk County,

New York. NYOPRHP Project Notification Update, sections of SEQR EAF (Parts I-III), Archaeology Phase IB and II, Tribal Consultation. (CSW13108 2019-007_KGO) for KGO Consulting, Inc., for Commack Union Free School District.

2019-2020 Task Manager/Cultural Resources. Randall Airport, Town of Wallkill, Orange County, NY. NYOPRHP Project Notification and FAA ShortEAF Revisions, Parts E (Section 4(f)) and H (Cultural Resources). (CSW13108 2019-009_KGO) for KGO Consulting, Inc., for TSPE TriState, Hauppauge, NY.

2019-2020 Cultural Resource Consultant. JFK Taxiway K4 Extension Environmental Assessment. NYOPRHP Notification with Phase IA memorandum, NEPA EA Chapter 4 Affected Resources and Chapter 5 Environmental Consequences sections (Historical, Architectural, Archaeological, and Cultural Resources; Section 4f Resources). (CSW13108 2019-011) for Matrix for Mott McDonald and Port Authority of New York & New Jersey, New York City, New York.

2019 Cultural Resource Consultant. NYOPRHP Phase IA Memorandum and Work Plan for Cemetery Boundary Definition, Carll Cemetery within the boundary of the Commack Union Free School District Middle School, 700 Vanderbilt Parkway, Dix Hills, NY 11746. With KGO Consulting, Inc., for Commack School District. (CSW13108 2019-012_KGO, project cancelled because of plan changes)

2018 Consulting Archaeologist. VHB 42236 (CSW13108 2018-001). Cultural Resources Assessment, Proposed Evergreen Retirement Community, 900 Hemlock Avenue, South Windsor, CT. VHB for DEEP Permit, CTSHPO.

2018 Consulting Archaeologist. VHB 26737 (CSW13108 2018-002). Mill Creek-New Rochelle Residential Development, 24 Maple Avenue, New Rochelle, NY, Cultural Resources (Historic and Archaeological Resources) Due Diligence. VHB to client, NYORPHP Project Notification.

2018 Principal Investigator/Senior Archaeologist, VHB 42120.01, Vernon Center, Town of Tolland, CT. Phase IA to CT SHPO in support of CT DEEP General Permit Appendix G Historic Preservation Review.

2017-2018 Consulting Archaeologist and Co-Author. *Guidelines for Archaeological Work in New York City* (Amanda Sutphin, H. Arthur Bankoff, Jessica Striebel MacLean, and Carol S. Weed). NYC Landmarks Preservation Commission, September 2018 [CSW13108, 2017-001].

2017-2018 Principal Investigator/Senior Archaeologist. VHB 25869, Seepage/Area 21/Bethpage, Nassau County, NY: Fieldwork and initial assessment; project completed by others.

2017 Principal Investigator/Senior Archaeologist, VHB 26112.00, Thompson Court, North Greenburg, Rensselaer County, NY. NYOPRHP Project Notification with Due Diligence.

2017 Principal Investigator/Senior Archaeologist, VHB 26175.01, CCR Double Lock, Franklin County, NY. NYOPRHP Project Notification with Due Diligence.

2017-2018 Task Manager, Natural and Cultural Resources, VHB 26209.00, JFK Runway 4R-22L Alternatives Analysis, Queens, NY. NEPA EA, completed draft environmental review of Alternatives Analysis (Retired).

2017-2018 Task Manager, Natural and Cultural Resources, VHB 26209.01, JFK Runway 13L-31R Rehabilitation and Taxiway Improvements. Draft NEPA EA to PANYNJ and FAA, response to draft comments. (Retired)

2017 Principal Investigator/Senior Archaeologist, VHB 27535.44, CVS/Amboy Road, Staten Island, NY. Project Notification with Due Diligence Memorandum submitted to NY SHPO.

2017 Task Manager, Natural and Cultural Resources. VHB Project 26209.01. JFK Runway 13L-31R Rehabilitation and Taxiway Modifications, Queens County, NY. NEPA EA, Federal Aviation Administration and Port Authority of New York & New Jersey.

2016-2018 Senior Analyst/Principal Investigator, 24 Federal Communications Commission (FCC) Telecommunications Section 106 Compliance Assessments under the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission (FCC), CT, MA, NH, NY (VHB).

2016-2017 Task Manager, Natural and Cultural Resources. VHB Project 29621. JFK Fuel Farm Expansion, Queens County, NY. NEPA EA, Federal Aviation Administration and Port Authority of New York & New Jersey.

2014, 2016 Project Manager and Principal Investigator. VHB Project 28859. Hebrew Home at Riverdale Continuing Care Retirement Community EAS and Phase IA Archaeological Assessment, Bronx County, NY. CEQR EAS; NYC Landmarks Preservation Commission Phase IA.

2013 Principal Investigator/Senior Archaeologist. VHB Project 28878. LaGuardia Runway Safety Area EA, Queens County, EA. For FAA, Affected Environment-Cultural Resources chapter, Phase IA Cultural Resources Assessment (to NYOPRHP).

2013 Project Manager and Principal Investigator. VHB Project 51577.01, 51577.02. Homestead Woolen Mill Dam Removal, Swanzey, NH. Phase IA/IB archaeological investigations of channel/bank modification areas; fish weir documentation; dam and dam's context study for the New Hampshire Division of Historic Resources (NHDHR) Individual Inventory Form. For Homestead Woolen Mills, NH DEP, NH DHR, NOAA, and USFWS.

2013 Project Manager and Principal Investigator. VHB Project 11106.01, 1106.03. New York Power Authority IDIQ, Cultural Resources Studies: Schoharie County, NY (Lansing Manor Visitor's Center, Phase I) and Bronx County (Community College Utility Upgrade, Phase I), Bronx County, NY. Also, VHB Project Manager for the SUNY-Buffalo subcontract Phase I investigations of the Buffalo River Marina investigations, Erie County.

2013 Project Manager and Principal Investigator. VHB Project 25434. Jeever Spiritual & Humanitarian Center, Phase IA, Cranbury Township, NJ. Private client, in support of NJDEP permit applications.

2013 Task Manager, Cultural and Natural Resources. VHB Project 28909. East Hampton Airport, Environmental Assessment, Suffolk County, NY. Affected Environmental and Environmental Consequences sections of the EA. Report submitted to FAA. Cultural resources assessment filed with NYOPRHP.

2011-2013 Task Manager, Cultural Resources. NPS Projects: EIS Drakes Bay Oyster Company EIS, Port Reyes, CA; Fire Island National Seashore EIS, NY; Gateway and Sandy Hook Units EA, NJ & NY; Mammoth Cave Green River Ferry Crossing, EIS, Mammoth, KY;

2011-2016 Task Manager, Cultural and Natural Resources (planning study); Principal Investigator (cultural resources due diligence). VHB 28590. PANYNJ Airport System Capacity Study, EWR, JFK, LGA, Teterboro, and Stewart alternatives, New York and New Jersey. VHB for Landrum & Brown, Port Authority of New York & New Jersey, with FAA participation.

2011-2012 Cultural Resources Project Manager and Principal Investigator Archaeology. Residential Development, Town of Ossining, Westchester County, New York. Archaeology Phase IA and Phase IB, Section 233 permit for archaeological trenching, Old Croton Aqueduct State Park. VHB for client and NYOPRHP.

2010 Archaeological Principal Investigator. Long Island Motor Parkway proposed road-to-trail Project, Nassau County, New York. Phase IA assessment. VHB for client and NYOPRHP.

2010 Project Manager and Principal Investigator. VHB Project 51981.00. Concord Steam Co-generation, Concord, NH. Phase IA assessment. VHB for client and NHDHR.

2010 Project Manager and Principal Investigator. VHB Project 51946. Comerford Station #18, Upland Facilities, Monroe, NH. Phase I archaeological assessment access road; historic context for the Control House NHDHR property documentation form. VHB for National Grid and NHDHR.

2009 Senior Archaeologist and Permitting Specialist. VHB Project 32982.00 – 32982.03. NCR, Uranium ISR Facilities, Campbell, Johnson, and Sweetwater Counties, WY. For NRC, WY SHPO, and BLM in support of permit applications. EA cultural resources and paleontology sections.

2009 Principal Investigator/Senior Archaeologist. Retail Site, Montgomery, Orange County, New York. Phase IA/IB archaeological assessments. VHB for client and NYOPRHP.

2008-2009 Archaeological Principal Investigator. UMass Amherst Historic Buildings Survey, Towns of Amherst and Hadley, Massachusetts. Project historic context; preliminary archaeological assessments and recommendations. VHB for UMass Amherst.

2006-2010 Task Manager, Cultural and Natural Resources. Southern Nevada Supplemental Airport Environmental Impact Statement, Clark County, NV. Agency (Federal Aviation Administration, the Bureau of Land Management, the Nevada Department of Cultural Affairs State Historic Preservation Office, the United States Fish and Wildlife Service, the Nevada Department of Wildlife, National Park Service) and Tribal (21 Native American Tribes) coordination/consultation. VHB for Joint BLM/FAA.

2004 Co-Principal Investigator and Senior Archaeologist. NPS Minute Man Park, Archaeological Survey of the North Bridge Rehabilitation Project Area, Concord, MA. Gray & Pape, Inc. for NPS.

2001-2002 Project Manager and Principal Investigator. Phase III Context Development for Site 36AL480, Allegheny County, Pennsylvania, Indigenous Nation component. Gray & Pape, Inc., for US Army

Corps of Engineers, Pittsburgh District.

2000-2002 Project Manager and Principal Investigator. Indianapolis, Indiana, Phase I-III Investigations at a Proposed Cogentrix facility, Marion Township, Bedford County, Indiana. Gray & Pape, Inc., for Malcolm Pirnie, Inc., Indianapolis, Indiana, and USACE.

1997-2006 Project Manager and Archaeological Principal Investigator. Millennium Pipeline Project, Erie and Pike counties, Pennsylvania, and 12 counties, New York. Gray & Pape, Inc., for Columbia Gas Transmission Corporation/Millennium Pipeline LLP.

1996 Principal Investigator. Ohio Department of Transportation HAM/WAR-US22/3-16.15/0.00 Project, Sycamore and Symmes townships, Hamilton County, and Deerfield Township, Warren County, Ohio. Phase IA/IB Archaeological Assessment. Gray & Pape, Inc., for KZF, Inc./Ohio Department of Transportation.

1996 Principal Investigator. Phase III Data Recovery, East Field, DOE Fernald Facility, Hamilton and Butler counties, Ohio. Gray & Pape, Inc., for Fernald Environmental Management Restoration Corporation (FERMCO)

1995 Principal Investigator. Phase IA/IB Cultural Resources Assessment, Market Expansion Project, Adams and Lancaster counties, and Phase IA assessment Bedford County, Pennsylvania. Gray & Pape, Inc., for Columbia Gas Transmission Corporation

1995 Principal Investigator. Phase I survey and Phase II testing (Indigenous Nation), Line A Replacement/Uprate Project - Project 1, Pleasant Township, Madison County, Ohio. Gray & Pape, Inc., for Columbia Gas Transmission Corporation.

1994-1995 Principal Investigator. Archaeological Phase I, II, and III Investigations DOE Fernald Facility, Hamilton and Butler counties, Ohio. Gray & Pape, Inc., for Fernald Environmental Management Restoration Corporation (FERMCO).

1994 Principal Investigator. Phase I Cultural Resources Assessment, Ohio Department of Transportation State Route 30 Highway Improvement Project, Carroll and Columbiana Counties, Ohio. Gray & Pape, Inc., for Adache-Ciuni-Lynn Inc./Ohio Department of Transportation.

1993 Principal Investigator. Phase III data recovery excavations of the historic and prehistoric components located at the Lehigh Canal/Lehigh River crossing, Northampton County, Pennsylvania. Gray & Pape, Inc., for Columbia Gas Transmission Corporation, Line 1278, Allentown, Northampton County, Pennsylvania.

1988 Principal Investigator. Phase III Date Recovery 28GL188: a rural home site in Logan Township, Gloucester County, New Jersey. EMANCO Inc., for Transcontinental Gas Pipeline Corporation (Transco).

1986-1992 Project Director. Transco Leidy Line and Market Area Facilities and related projects, New Jersey, Pennsylvania, and Virginia. Phase I survey in Northampton, Monroe, Luzerne, Lycoming, and Potter counties, PA, and Gloucester, Burlington, Middlesex, Mercer Counties, NJ; Phase II testing

and Phase III mitigation of selected sites. EMANCO Inc., for Transcontinental Gas Pipeline Corporation (Transco).

1986-1988 Principal Investigator and Senior Archaeologist. Phase II Testing and Phase III Data Recovery 28GL188 (Mrs. Bennett's Farmstead), Gloucester County, New Jersey. New World Research, Inc., and EMANCO Inc. for Transcontinental Gas Pipeline Corporation (Transco).

1986-1987 Project Director, Principal Investigator. Transco Leidy Line and Market Area Facilities and related projects, New Jersey, Pennsylvania, and Virginia. Phase II testing and Phase III data recovery Sites 36Lu90 (Jacobs Site) and 36Lu105 (Gould Island Site), Luzerne County, Pennsylvania. EMANCO Inc., for Transcontinental Gas Pipeline Corporation (Transco).

1980 Senior Archaeologist. Phase I and II Investigations (26 Sites), Redstone Arsenal Project. New World Research, Inc., for U.S. Army Corps of Engineers, Mobile District

1980 Senior Archaeologist. Phase II Testing, Richard B. Russell MRA Beaverdam Group (Sites 9Eb92, 9Eb207, 9Eb208, and 9Eb219) Project. New World Research, Inc., for National Park IAS-A.

1979-1980 Senior Archaeologist. Phase I Survey, Central Coal II Project, Carbon, Emery and Sevier counties, Utah. New World Research, Inc., for Bureau of Land Management

**MINOR PROJECTS (PRINCIPAL INVESTIGATOR, ARCHAEOLOGIST IN-FIELD, OBJECT ANALYST, AND/OR REPORT)**

2021 Consulting Archaeologist. Cultural Resources Site File Review, Clark Property Thwing Road, Town of LeRoy, Genesee County, New York. Due Diligence. (CSW 2021-006) to Gray & Pape, Inc. for client.

2021 Consulting Archaeologist. Cultural Resources Site File Review, Brandes Site, Voorhees Hill and Lewis Roads, Town of Wellsville, Allegany County, New York. Due Diligence. (CSW 2021-009) to Gray & Pape, Inc. for client.

2021 Consulting Archaeologist. Cultural Resources Site File Review, Clymer Site, Clymer Hill (Rt. 19) and Brownell Roads, Town of Clymer, Chautauqua County, New York. Due Diligence. (CSW 2021-014) to Gray & Pape, Inc. for client.

1991 In-field, analysis, and report. Letter report. Texaco Pearsall Gathering System project, cultural resource assessment, Medina, Frio, Zapata, and Dimmitt counties, Texas. Report submitted to Entrix, Inc., Fort Collins, Colorado.

1991 In-field, analysis, and report. Cultural resources survey, American Envirotech, Inc., San Jacinto Waste Management Facility, Harris County, Texas. Report submitted to American Envirotech, Inc., Houston, Texas, and Texas Antiquities Committee, Austin, Texas (for review).

1990 In-field, analysis, and report. Letter report. Cultural resources survey, Murphy Oil USA, Inc., Young-USA No. 1 Well and Access Road, Wright Patman Lake, Bowie County, Texas. Report submitted to the U.S. Army Corps of Engineers, Fort Worth District, Fort Worth, Texas.

1990 In-field, analysis, and report. Phase 1 cultural resources investigation of the proposed

Transcontinental Gas Pipe Line Corporation Trenton-Woodbury Lateral natural gas pipeline expansion, MP30.46-MP36.83, Burlington County, New Jersey. With M. E. Cruse and J. B. Cruse. EMANCO Inc. *Report of Archaeological Investigations* 23.

1990 In-field, analysis, and report. Phase 1 cultural resource investigation of the proposed Transcontinental Gas Pipe Line Corporation 1.61-mile Leidy natural gas pipe line expansion, MP36.30-MP37.91, Northampton County, Pennsylvania. With C. K. Parish, J. L. Jones, and P. S. Jones. EMANCO Inc. *Report of Archaeological Investigations* 21.

1990 In-field, analysis, and report. Phase 1 cultural resources investigation of the Transcontinental Gas Pipe Line Corporation proposed Leidy natural gas pipe line expansion, MP37.85-MP42.78, Northampton and Monroe counties, Pennsylvania. With J. L. Jones and C. A. Hays. EMANCO Inc. *Report of Archaeological Investigations* 19.

1990 In-field, analysis, and report. Phase 1 cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Compressor Station No. 205 site, Lawrence Township, Mercer County New Jersey. With J. B. Cruse and M. E. Cruse. EMANCO Inc. *Report of Archaeological Investigations* 18.

1990 In-field, analysis, and report. Phase 1 cultural resource investigation of the proposed Transcontinental Gas Pipe Line Corporation Leidy natural gas pipe line expansion, MP142.74-MP149.41, Lycoming County, Pennsylvania. With J. L. Jones and P. S. Jones. EMANCO Inc. *Report of Archaeological Investigations* 17.

1990 Contributor. Cultural resources survey of a Phillips 66 Company pipeline right-of-way across Peach Point Wildlife Management Area, Brazoria County, Texas. With M. E. Cruse, J. B. Cruse, and W. P. Wenstrom. EMANCO Inc. *Report of Archaeological Investigations* 16.

1990 In-field, analysis, and report. Phase I archaeological investigations of the proposed Transcontinental Gas Pipe Line Corporation Main natural gas pipeline expansion, MP1790.84-MP1794.70, Middlesex County, New Jersey. With C. Hays, J. L. Jones, and C. K. Parish. EMANCO Inc. *Report of Archaeological Investigations* 15.

1990 Editor. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Woodbury lateral natural gas pipeline expansion, MP10.47-MP14.43, Gloucester County, New Jersey (Final report). By Cindy K. Parish. EMANCO Inc. *Report of Archaeological Investigations* 14.

1989 In-field, analysis, and report. A cultural resources survey of the proposed Loop 1 Alternates A and B (Transcontinental Gas Pipe Line Corporation expansion of the Leidy natural gas pipeline MP190.63-MP194.06), Clinton County, Pennsylvania. With W. P. Wenstrom. EMANCO Inc. *Report of Archaeological Investigations* 10.

1989 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Leidy natural gas pipeline expansion, MP42.78-MP51.06, Monroe County, Pennsylvania. With M. E. Cruse and J. B. Cruse. EMANCO Inc. *Report of Archaeological Investigations* 7.

1989 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Leidy natural gas pipeline, Tobyhanna Creek Crossing Reroute (approximate MP60.22-

MP61.15), Monroe County, Pennsylvania. With M. E. Cruse and J. B. Cruse. EMANCO Inc. *Report of Archaeological Investigations* 5.

1988 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation expansion of the Leidy natural gas pipeline (APEC Project), Clinton County, Pennsylvania. With W. P. Wenstrom. New World Research *Report of Investigations* 169.

1988 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation expansion of the Leidy natural gas pipeline in Clinton and Luzerne counties, Pennsylvania. With W. P. Wenstrom. New World Research *Report of Investigations* 165.

1988 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation expansion of the Wharton lateral extension natural gas pipeline, Potter County, Pennsylvania. (FERC Docket No. CP88-92-000). With W. P. Wenstrom and J. L. Jones. New World Research *Report of Investigation* 161.

1988 In-field, analysis, and report. Site distribution and cultural chronology in a portion of southwest Alabama: results of cultural resources survey on the Mobile Bay Pipeline Project, Choctaw, Washington, and Mobile Counties. With P. M. Thomas, L. J. Campbell, J. L. Gibson, J.H. Mathews, G. A. Mikell, and E. M. Wilson. New World Research *Report of Investigation* 158.

1987 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Leidy Line Expansion, Monroe County, Pennsylvania, Docket No. CP82-385-005. With M. T. Swanson, P. M. Thomas, and W. P. Wenstrom. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 153.

1987 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Trenton Woodbury Lateral Pipeline Expansion, New Jersey, Docket No. CP82-385-005. With J. B. Cruse, M. E. Galdeano, and W. P. Wenstrom. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 152.

1987 In-field, analysis, and report. A cultural resources survey of a portion of the Transcontinental Gas PipeLine Corporation SS-1 Storage Service Project (Docket No. CP-87-196-000) and Docket No. CP86-597-000, Pipeline Expansion Project, Luzerne County, Pennsylvania. With W. P. Wenstrom and P. M. Thomas. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 150.

1986 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation expansion of Market Area Facilities, Great Swamp, New Jersey. With J. Kilmarx. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 86-7.

1986 Editor. A cultural resources survey of the proposed Transcontinental Gas PipeLine Corporation expansion of Leidy Line and Market Area Facilities, Pennsylvania, 1986 construction. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 85-7PA.

1986 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation expansion of the Leidy Line and Market Area Facilities, New Jersey, 1986 construction. With M. T. Swanson. Final report submitted to EMANCO Inc. New World Research *Report of*

*Investigation* 85-7NJ.

1986 Contributor. A cultural resources survey of the Whitlow Ranch Dam and Reservoir, eastern Pinal County, Arizona, by Lee Fratt and David A. Phillips, Jr. Final report submitted to U.S. COE Los Angeles District. New World Research *Report of Investigation* 12.

1985 In-field, analysis, and report. Cultural resources survey of L.L.E.-E.J. Robichaux #1 Well, St. Mary's Parish, Louisiana. With L. J. Campbell. Final report submitted to Fenstermaker and Associates, Lafayette, LA. New World Research *Report of Investigation* 85-4.

1985 In-field, analysis, and report. A cultural resources survey of the proposed Transcontinental Gas Pipe Line Corporation Market Expansion Pipeline Project, Elbert and Hart counties, Georgia. With J. C. Phillips. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 85-3.

1985 In-field, analysis, and report. Cultural resources survey of a section of the Midway-Jensen-Crane Transmission Line Corridor, St. Lucie County, Florida. With J. C. Phillips. Final report submitted to Florida Power and Light. New World Research *Report of Investigation*84-29.

1985 In-field, analysis, and report. Archaeological investigations along the Whiskey Chitto, Vernon, Beauregard and Allen parishes, Louisiana. With L. J. Campbell, and M. T. Swanson. Final report submitted to the State of Louisiana, Department of Culture, Recreation, and Tourism. New World Research *Report of Investigation* 84-20.

1984 In-field, analysis, and report. Cultural resources investigations of the proposed Transcontinental Gas Pipe Line Corporation Main Line Expansion, East and West Feliciana parishes, Louisiana. With J. C. Phillips, L. J. Campbell and R. Carr. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 84-18A.

1984 In-field, analysis, and report. Cultural resources survey and floral/faunal habitat study of a proposed Wetland Wastewater Treatment Facility (EPA Project No. C280467), City of Collins, Covington County, Mississippi. With W. P. Wenstrom. Final report submitted to State of Mississippi, State Historic Preservation Office. New World Research *Report of Investigation* 84-14.

1984 In-field, analysis, and report. Cultural resources reconnaissance survey of fifty probability areas within the Upper St. Johns River Flood Control Project, Osceola, Brevard and Indian River Counties, Florida. With L. J. Campbell, J. A. Homburg and P. M. Thomas. Final report submitted to the U.S. COE Jacksonville District. New World Research *Report of Investigation* 84-7.

1984 Editor. Archaeological investigations at 9EB92, 9EB207, 9EB208, and 9EB209 (The Beaverdam Group), Richard B. Russell Multiple Use Area, Elbert County, Georgia. With L. Janice Campbell. Final report submitted to IAS-A. New World Research *Report of Investigation* 42.

1983 In-field, analysis, and report. Cultural resources investigations along a portion of the Little River in central Louisiana. With P. M. Thomas, L. J. Campbell, and J. E. Keller. Report submitted to State of Louisiana Department of Culture, Recreation, and Tourism. New World Research *Report of Investigation* 83-12.

1983 Contributor. Background and literature review of three proposed alternatives, Bassier, Caddo, DeSoto, and Webster parishes, Louisiana, Harrison and Marion counties, Texas. With L. J. Campbell, M. T. Swanson and J. E. Keller. Final report submitted to U.S. COE Vicksburg District. New World Research *Report of Investigation* 93.

1982 In-field, analysis, and report. A Phase II cultural resources survey of a proposed softball/soccer field at Redstone Arsenal, Madison County, Alabama. With M. T. Swanson. Final Report submitted to Redstone Arsenal, Environmental Office. New World Research *Report of Investigation* 81.

1982 Contributor. Cultural resources survey of terrestrial and offshore locations, Lake Ponchartrain and Vicinity Hurricane Protection Project, edited by Prentice M. Thomas. Final report submitted to U.S. COE New Orleans District. New World Research *Report of Investigation* 80.

1982 Analysis, and report. A cultural resources survey of a 2200-acre tract at the Fort Benning Military Reservation, Chattahoochee County, Georgia. With P. M. Thomas, L. J. Campbell, M. T. Swanson, and J. H. Altschul. Final report submitted to IAS-A. New World Research *Report of Investigation* 71.

1982 In-field, analysis, and report. Cultural resources investigations at the Fort Polk Military Reservation, Vernon, Sabine, and Natchitoches parishes, Louisiana. With P. M. Thomas, S. Shelley, L. J. Campbell, M. T. Swanson, and J. P. Lenzer. Final report submitted to IAS-A. New World Research *Report of Investigation* 69.

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1981 Contributor. Results of a literature and background search for the proposed Low BTU Pipeline, east central Texas, edited by Prentice M. Thomas. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 58.

1981 In-field, analysis, and report. Cultural resources survey of proposed well sites and access road, State

Oil and Gas Lease No. 82053, Mustang Island, Nueces County, Texas. With S. Fulgham. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 44.

1981 In-field, analysis, and report. Cultural resources survey of the proposed Coral Petroleum Sprint Field Exploratory Well No. 1. With P. M. Thomas. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 43.

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1980 In-field, analysis, and report. A cultural resources survey of Houston Pipe Line Company's 12- inch proposed pipeline, Padre Island, Texas. With P. M. Thomas. Final report submitted to EMANCO Inc. New World Research *Report of Investigation* 30.

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1975 In-field, analysis, and report. *The Hydrology of prehistoric farming systems in a central Arizona ecotone*. With G. J. Gumerman, R. C. Euler, and others. Final report for the period ending 30 September 1975 (NAS 9-14610) submitted by Southern Illinois University, Department of Anthropology, to the Lyndon B. Johnson Space Center, Houston, Texas.

**PAPERS PRESENTED**

2016 Anticipation: Predictive Modelling Across New York. Invited paper presented by Carol S. Weed (VHB) and Ruth G. Myers (Gray & Pape) to the New Hampshire SHPO Site Distribution Conference, April, 2016.

2014 Is It There or Not? Searching for the New York City Farm Colony's Potters Field. Paper presented by Alyssa Loorya and Carol S. Weed to the NYSAA Louis A. Brennan Chapter, December, 2014.

2013 An Archaeologist's View of the Swanzey Fish Weir: A Cultural Feature in the Ashuelot River. Paper presented to the NYSAA Louis Brennan Chapter, December 2013, and then, by invitation, presented to the combined New Hampshire Archaeological Society and Massachusetts Archaeological Society at the Spring Meeting April 5, 2014.

2010 Historic Properties: Options for Significant Cultural Resources. Paper presented to FAA, Western-Pacific Region 6th Annual Airports Conference, Los Angeles, California, June, 2010.

2008 Workshop: Tribal Consultation: Spirits of the Air and Spirits of the Earth. ACC/FAA/TSA Summer Workshop Series. Co-Moderators: Carol Weed (VHB) and Dean McMath (FAA); Subject Matter Expert: Katry Harris (ACHP).

2007 In the Drowned Lands: Adaptive Strategies in Near Swamp Environments. Paper presented to the Massachusetts Archaeological Society, April 17, 2007.

2006 In the Drowned Lands: The Millennium Pipeline Project Archaeological and Historical Results, 1997 to Present. Paper presented to the NYSAA Annual Meeting, April 28, 2006.

1996 Data Acquisition and Model Testing Along the Proposed Route 30 Corridors, Eastern Segment, Columbiana and Carroll Counties, Ohio. With Ruth G. Myers. Paper presented at the Society for American Archaeology annual meeting, New Orleans.

1995 The Brownware Quagmire East of the Pecos: Ceramic Supertypes and the Ware/Type/Variety System. Paper presented at the Society for American Archaeology annual meeting, Minneapolis.

1991 Terminal Archaic/Early Woodland ceramic types, North Branch of the Susquehanna River. Paper presented to the Pennsylvania Archaeological Council Spring Symposium [Topic: The Early Woodland period], May 3, 1991, Brookville, PA.

1990 Down by the river side: Phase 3 investigations at two sites in Luzerne County, Pennsylvania. With J.B. Cruse, J.L. Jones, M.E. Cruse, C.K. Parish, and P.S. Jones. Paper presented to the Society for Pennsylvania Archaeology annual meeting, Wilkes-Barre, PA.

1990 Phase I and II cultural resources investigations of proposed pipeline rights-of-way. Paper presented to the Pennsylvania Archaeological Council Fall Workshop, November 16, 1990, Harrisburg, PA.

1983 Settlement and subsistence at Spratt Point: an investigation of two sites in Indian River County, Florida. With L.J. Campbell. Paper presented to the Florida Anthropological Society annual meeting, Tallahassee.

1983 A hypothetical reconstruction of prehistoric settlement on Sanibel Island, Florida. With L.J. Campbell. Paper presented to the Florida Anthropological Society annual meeting, Tallahassee.

1981 Late Archaic occupations in the Sand Hills of Georgia: application of the focal-diffuse model. With L.J. Campbell and P.M. Thomas. Paper presented to the Southeastern Archaeological conference annual meeting, Ashville, North Carolina.

1976 Ultra-high altitude imagery and archaeology. With G. J. Gumerman. Paper presented to the Society for American Archaeology annual meeting, St. Louis.

1974 A model of centralized redistribution. Paper presented to the Society for American Archaeology annual meeting, Washington, D.C.

1972 Classic period Hohokam lithic assemblages. Paper presented to the Society for American Archaeology annual meeting, Miami Beach.

1970 The Hohokam of north central Arizona. With A.E. Ward. Paper presented to the Society for American Archaeology annual meeting, Mexico City.

1969 Black Mesa, salvage archaeology in northeastern Arizona. Paper presented to the Southwestern Archaeological Association meeting, Las Vegas, Nevada.

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1978 SARG and CAEP. In Proceedings of the Southwestern Anthropological Research Group, edited by Robert C. Euler and George J. Gumerman. Museum of Northern Arizona *Publication* 40.

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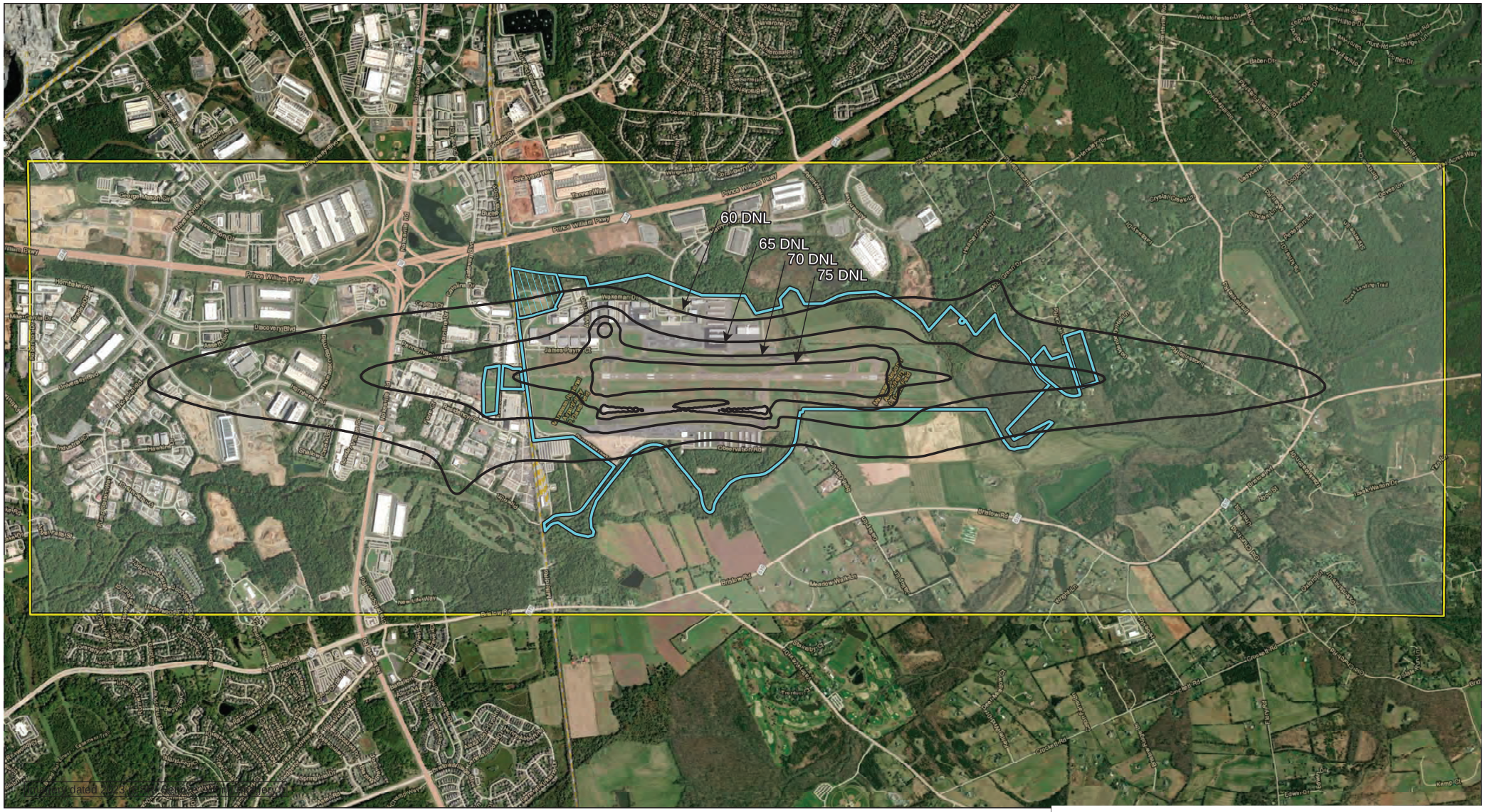
1973 The Beardsley Canal site: a Colonial Hohokam riverine extension site. *Kiva* 38:1.

1972 Survey and excavation on Black Mesa, 1969-1970. With G.J. Gumerman and D. Westfall. Prescott College *Studies in Anthropology* 4.

1971 The Henderson site: preliminary report. With A.E. Ward. *Kiva* 36:2.

1970 Two twelfth-century burials from the Hopi Reservation. *Plateau* 43:1.

# ATTACHMENT 2 – Figures




LEGEND

- Airport Property
- Amazon Data Center Parcel
- Indirect APE
- Noise Contour (DNL) - Preferred Action, 2040

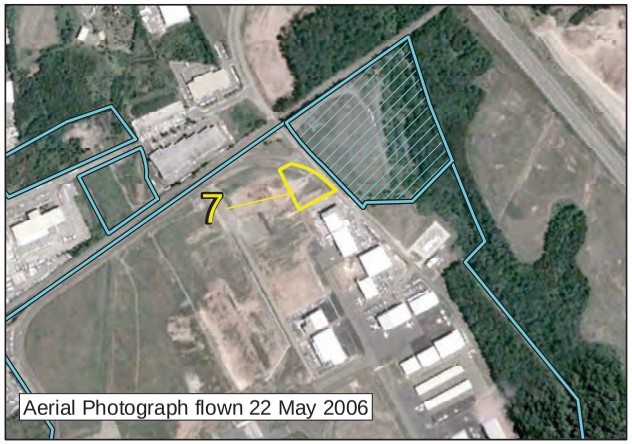
0 500 1,000 Meters

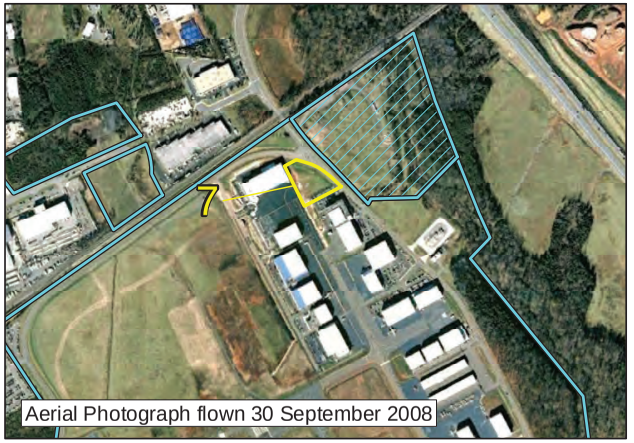
0 1,000 2,000 Feet

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*Project 23-98001.002, Version: 9/24/2025 @ 3:34:12 PM*




Legend

- Airport Property
- Amazon Data Center Parcel

Construction Area:

- 7 - Construction of a new Snow Equipment Storage Building

0 100 200 Meters

0 500 1,000 Feet

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**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

Figure 2

**PEA Project #7 SRE Building Location Overlaid Overlaid on 1994, 2006, and 2008 Historical Aerial Photographs**

*Project 23-98001.002, Version: 9/24/2025 @ 3:36:59 PM*

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

**Legend**

- Archaeological Resources
- Archaeology Labels
- DHR Easements
- County Boundaries




N

Feet

0 200 400 600 800

1:9,028 / 1"=752 Feet

**Title: McLearen 1978 (11,12,13, 14,15** **Date: 9/18/2025**

*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.*

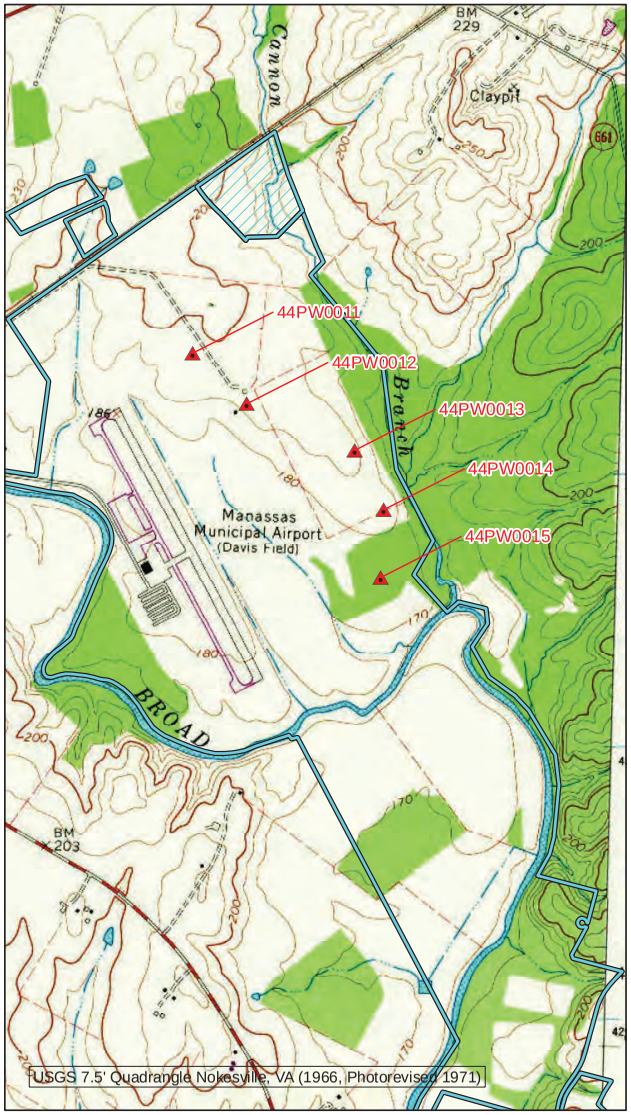
*Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.*

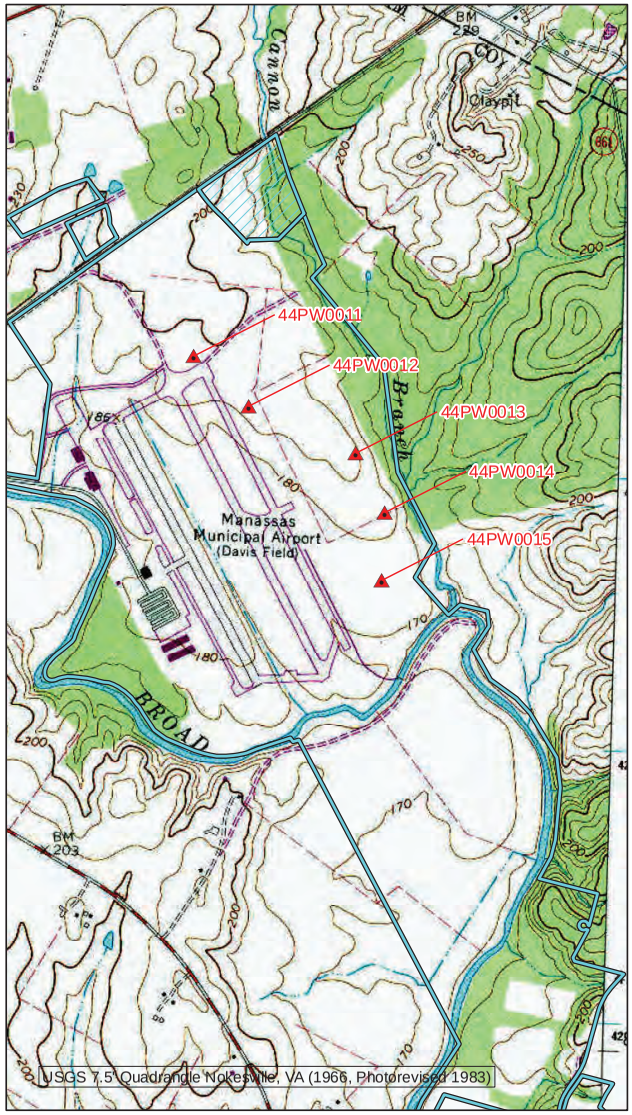
AVION SOLUTIONS GROUP LLC

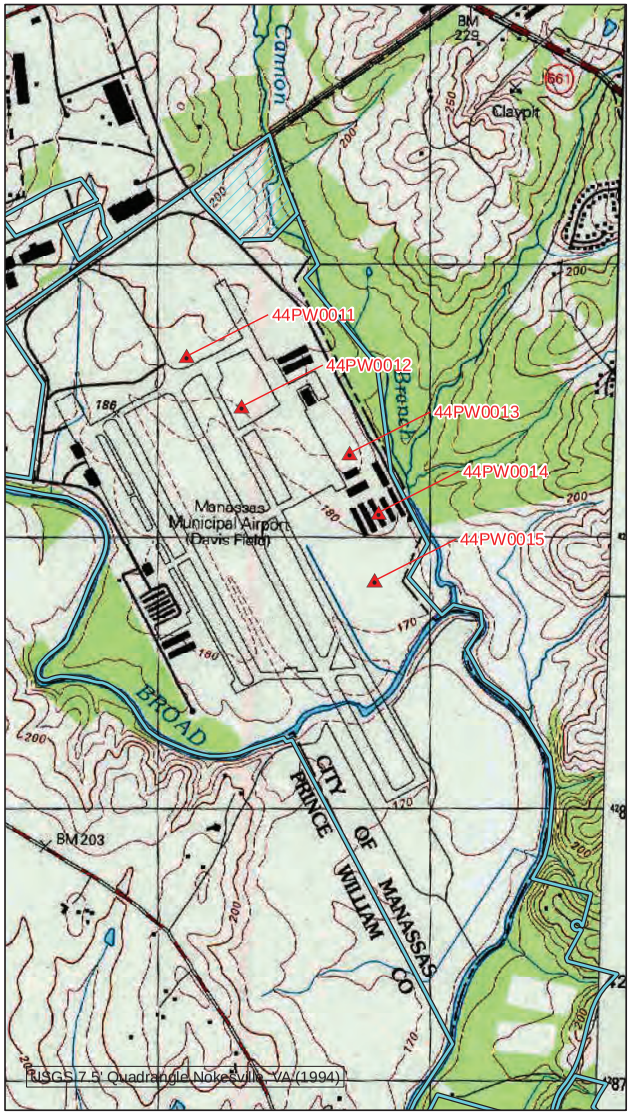
**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**DHR V-CRIS Plotting of McLearen 1978 Sites 44PW11, PW12, PW13, PW14, and PW15**

Figure 3




Legend

- Airport Property
- Amazon Data Center Parcel
- Archaeological Site

0 250 500 Meters

0 1,000 2,000 Feet

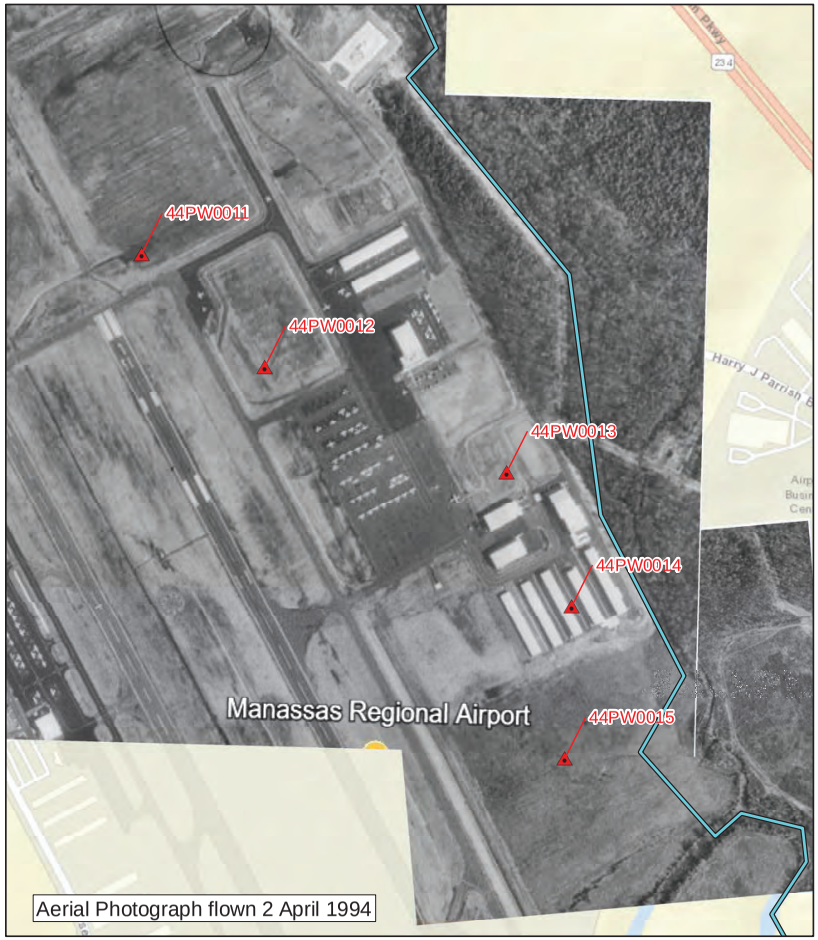
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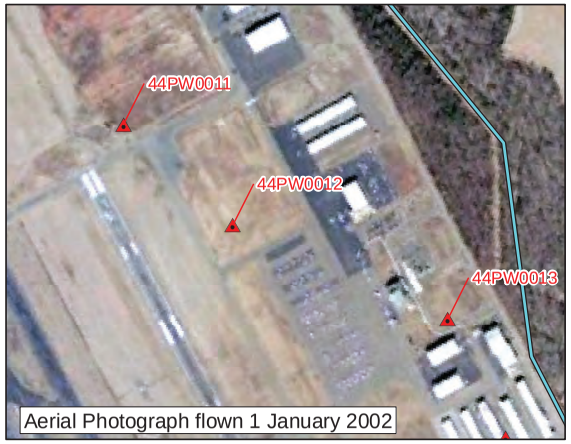
Figure 4

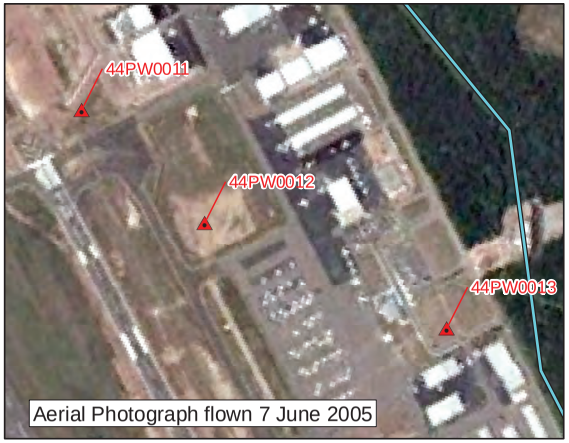
**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

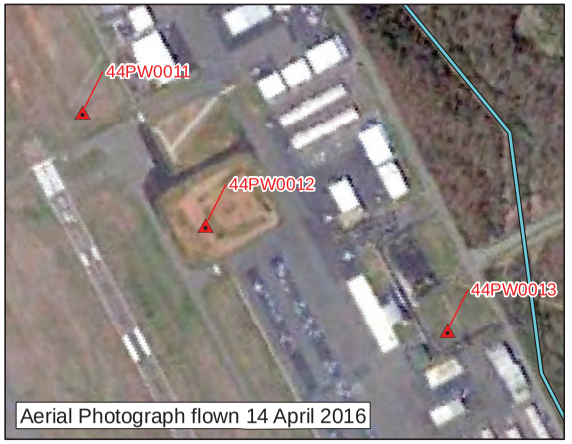
**McLearen's Archaeological Site Datums Overlaid on USGS Nokesville, VA 7.5' Quadrangles from 1971, 1983, and 1994**

*Project 23-98001.002, Version: 9/24/2025 @ 3:50:38 PM*




Legend
- Airport Property
- Archaeological Site

0 100 200 Meters
0 500 1,000 Feet

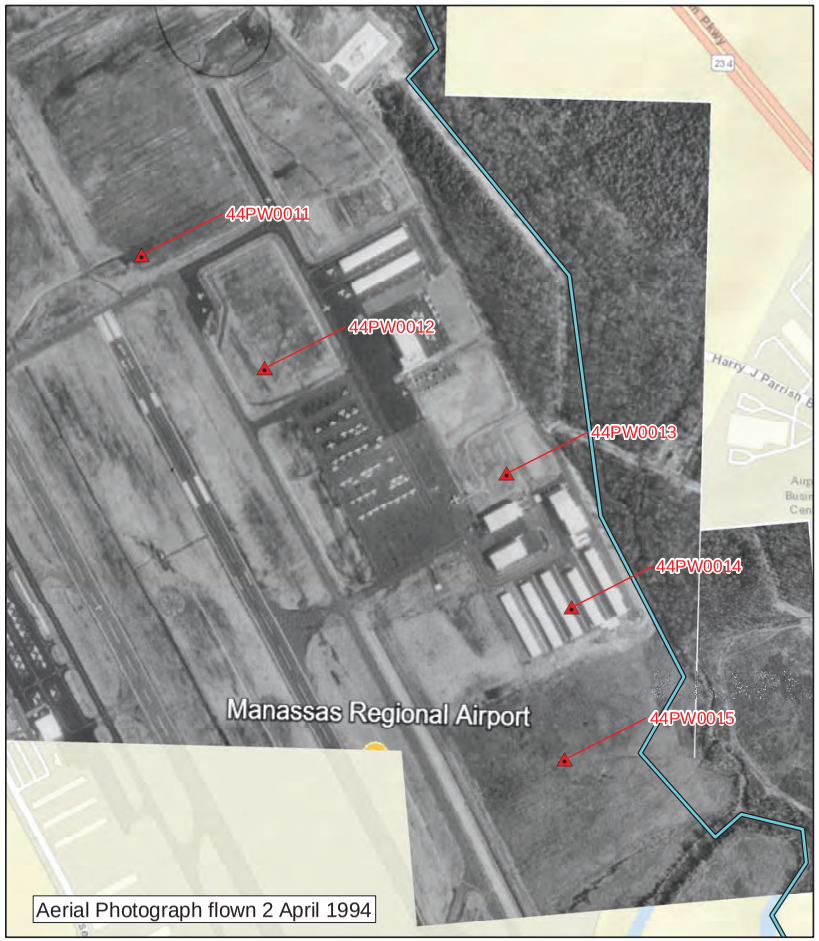
AVION SOLUTIONS GROUP LLC

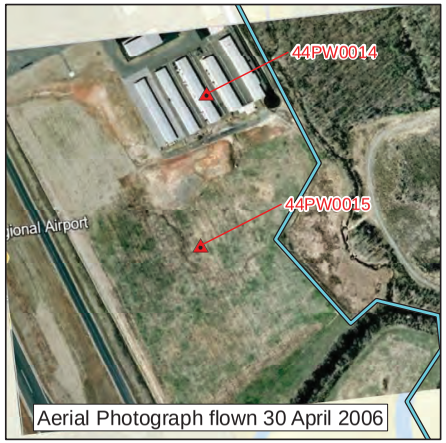
**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

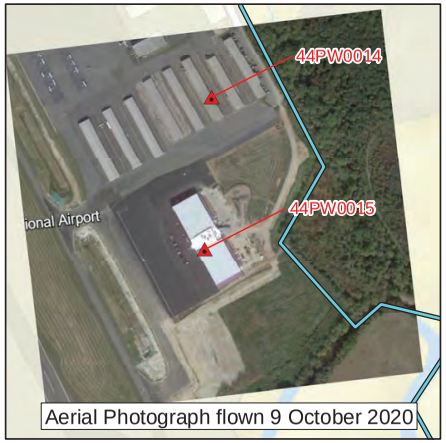
Figure 5

**McLearen's Archaeological Site Datums 44PW0011, 44PW0012, and 44PW0013 Overlaid on 1994, 2002, 2005, and 2016 Historical Aerial Photographs**

*Project 23-98001.002, Version: 9/24/2025 @ 4:20:52 PM*







Legend
- Airport Property
- Archaeological Site

0 100 200 Meters
0 500 1,000 Feet

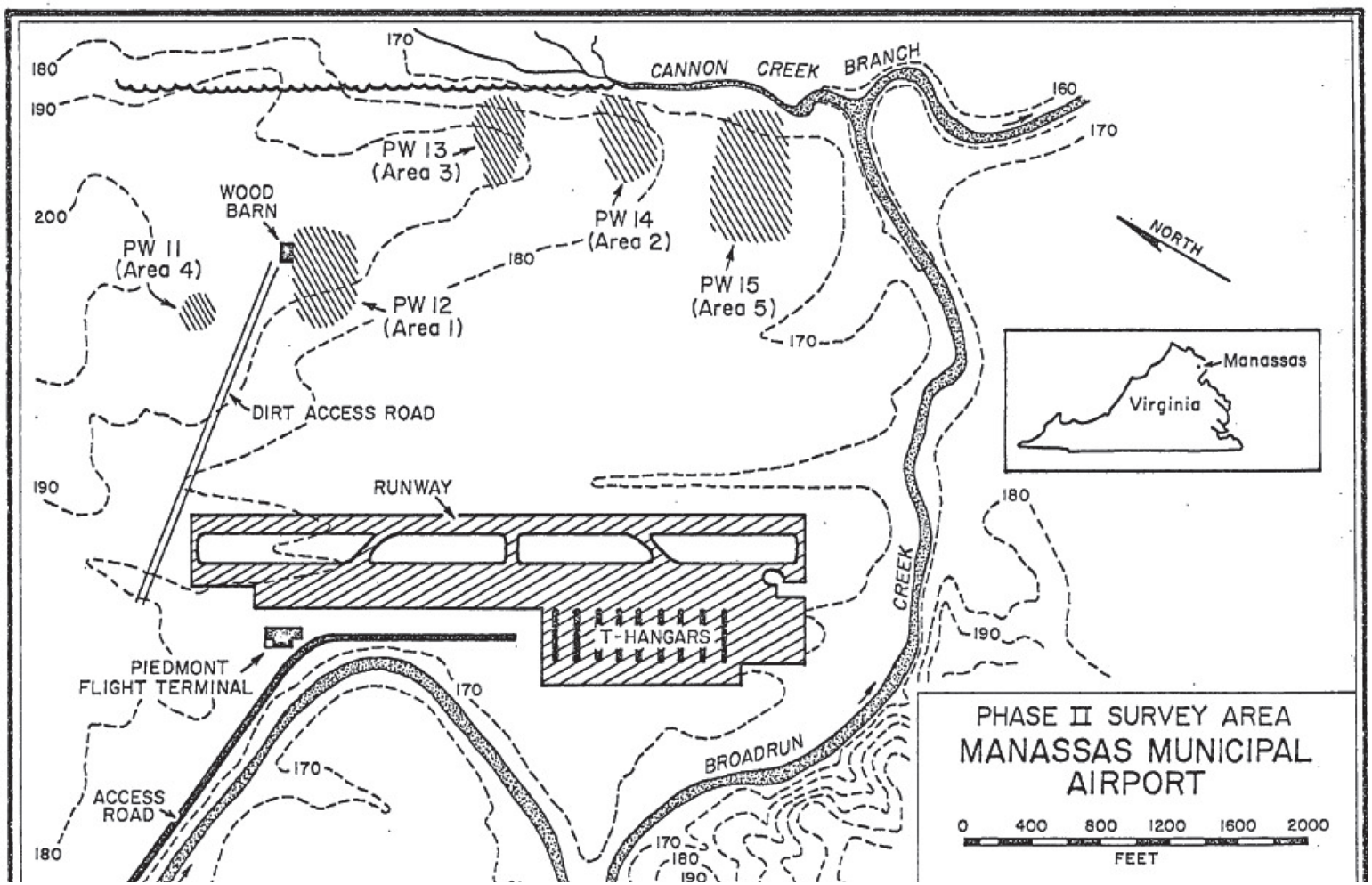
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**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

Figure 6

**McLearen's Archaeological Site Datums 44PW0014 and 44PW0015 Overlaid on 1994, 2006, 2020, and 2025 Historical Aerial Photographs**

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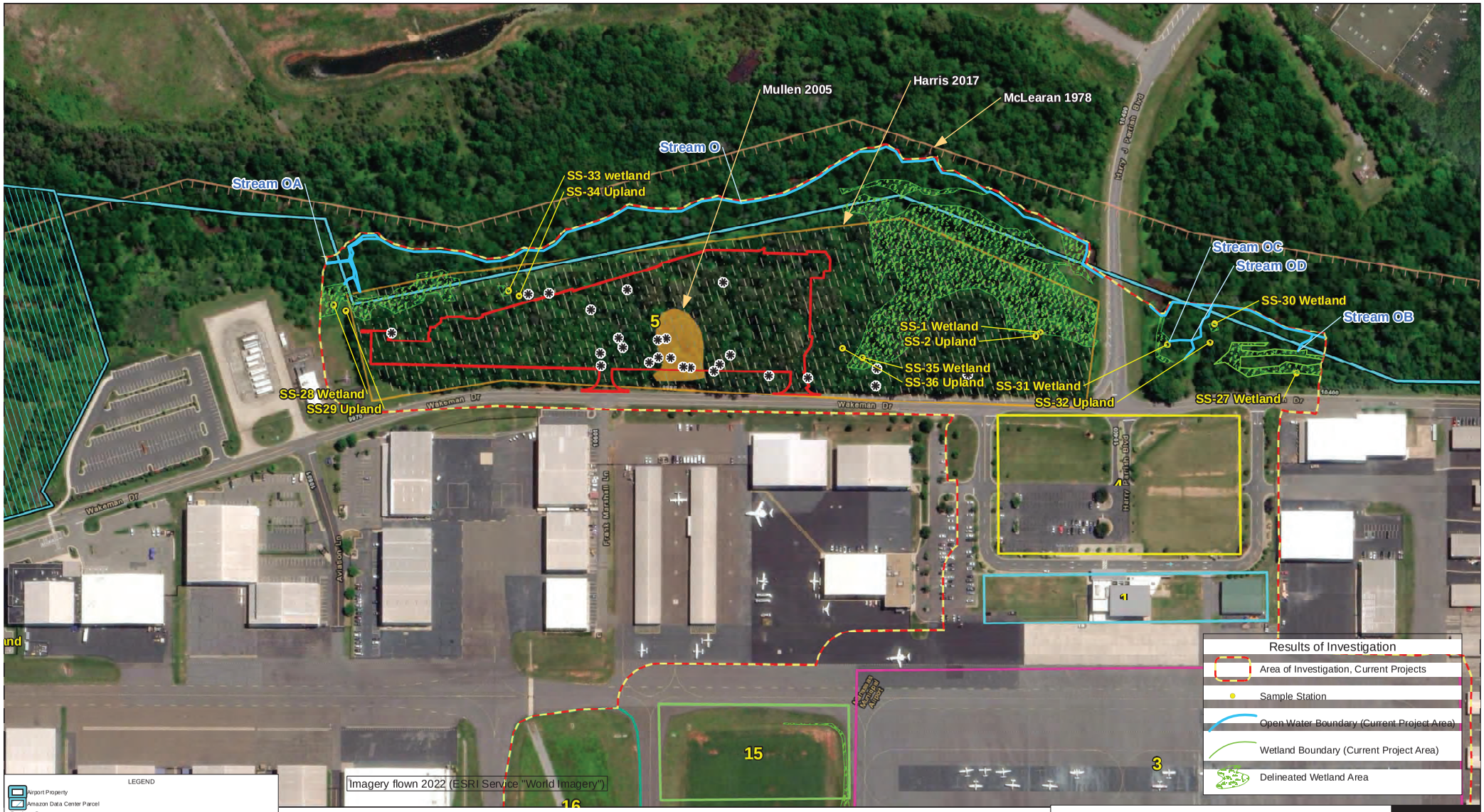


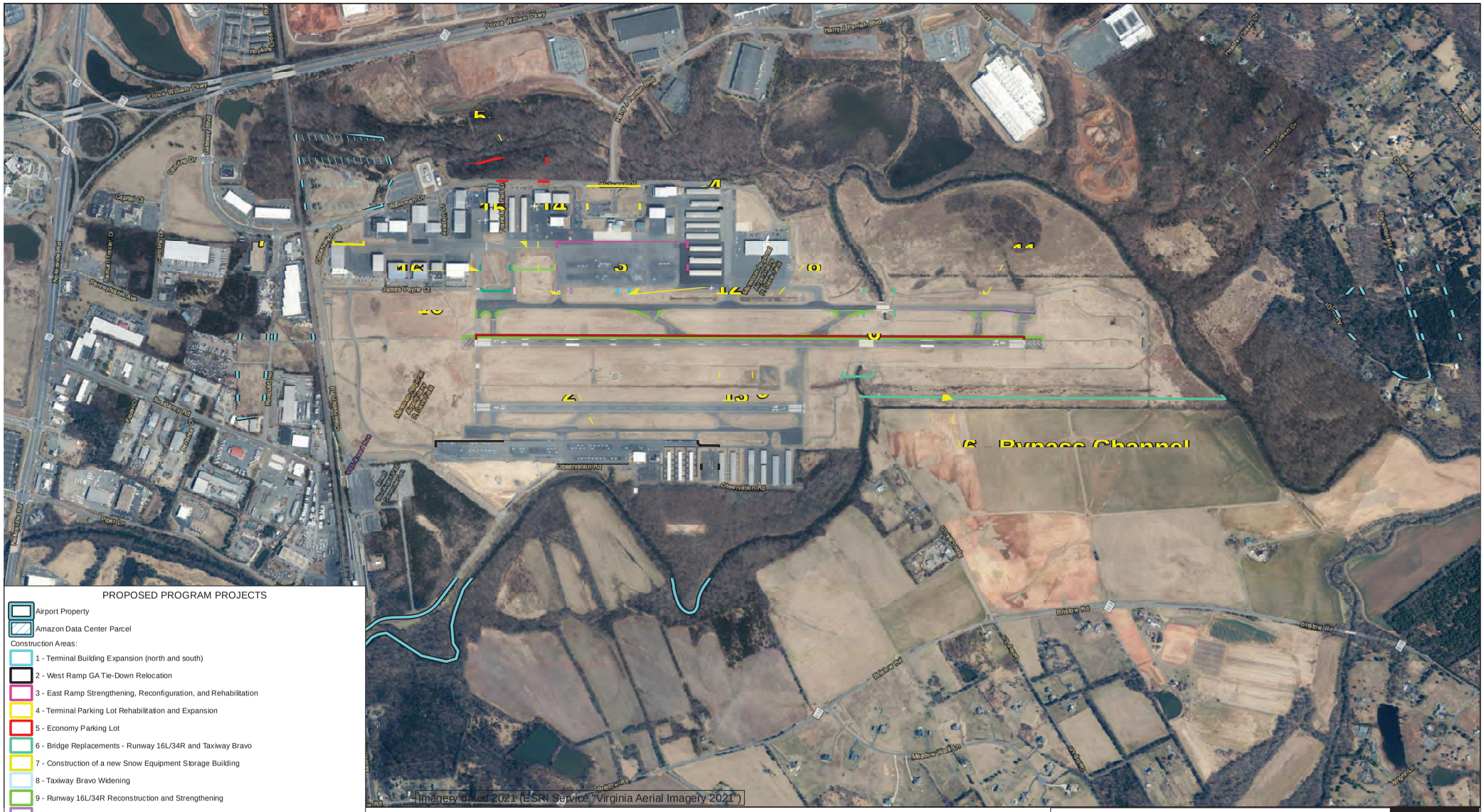

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**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Part of Smith (1978) Figure 1 Showing Locations of McLearen's Sites**

Figure 7


Mullen 2005
Harris 2017
McLearan 1978
Stream O
Stream OA
SS-33 wetland
SS-34 Upland
Stream OC
Stream OD
SS-30 Wetland
Stream OB
SS-1 Wetland
SS-2 Upland
SS-35 Wetland
SS-36 Upland
SS-31 Wetland
SS-32 Upland
SS-27 Wetland
SS-28 Wetland
SS29 Upland
Wakeman Dr
Harry J Parrish Blvd
Frank Marshall Ln
Aviation Ln
5
15
3
16
Imagery flown 2022 (ESRI Service "World Imagery")
LEGEND
Airport Property
Amazon Data Center Parcel
Previous Surveys:
McLearen 1978
Mullen 2005 - Area Shovel Tested
Harris 2017 - Metal Detector Survey
Metal Detector Finds
Construction Areas:
1 - Terminal Building Expansion (north and south)
3 - East Ramp Strengthening, Reconfiguration, and Rehabilitation
4 - Terminal Parking Lot Rehabilitation and Expansion
5 - Economy Parking Lot
15 - Construction of new Expanded East Ramp and Taxilane between Taxiways Delta and Echo
16 - Construction of a new ARFF Facility
Results of Investigation
Area of Investigation, Current Projects
Sample Station
Open Water Boundary (Current Project Area)
Wetland Boundary (Current Project Area)
Delineated Wetland Area
0 50 100 Meters
0 150 300 Feet
Delineated wetlands and watercourses defined by Davey Resource Group (DRG) on March 11-14, 2024, June 5, 2025, and July 7-8, 2025.
AVION SOLUTIONS GROUP LLC
Project 23-98001.002, Version: 9/24/2025 @ 4:15:54 PM
Figure 8
Manassas Regional Airport PART 139 Certification and Terminal Redevelopment
Previous Survey at Economy Parking Lot




# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## PEA Projects

Figure 9

Project 23-98001.002, Version: 10/10/2025 @ 2:11:23 PM

# ATTACHMENT 3 –
# John Mullen 2005 Report

Thunderbird
Archeology

# PHASE I ARCHEOLOGICAL INVESTIGATIONS OF THE CIRCA 120 ACRE GLEN GERY PROPERTY, PRINCE WILLIAM COUNTY, VIRGINIA

By
John Mullen

August 2005

WSSI Project #21225.01

*Prepared under the supervision of*
*Christine Jirikowic, Principal Investigator*

Prepared for:
Glen Gery Corporation
P.O. Box 7001
Wyomissing, Pennsylvania 19610-6001

Prepared by:
Thunderbird Archeology
14088-H Sullyfield Circle
Chantilly, Virginia 20151

## ABSTRACT

A Phase I archeological survey was conducted on the approximately 120 acre Glen Gery Brick property located adjacent to the City of Manassas in Prince William County, Virginia. The fieldwork was carried out in August of 2005 by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Chantilly, Virginia, for Glen Gery Corporation of Womissing, Pennsylvania. No archeological sites were found, and no further archeological work is recommended.

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## INTRODUCTION

This report presents the results of a Phase I archeological investigation of the approximately 120-acre Glen Gery Brick property located along Wakeman Drive adjacent to the City of Manassas in Prince William County, Virginia (Exhibit 1). Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Chantilly, Virginia, conducted the study described in this report for Glen Gery Corporation of Wyomissing, Pennsylvania. The fieldwork was carried out in August of 2005.

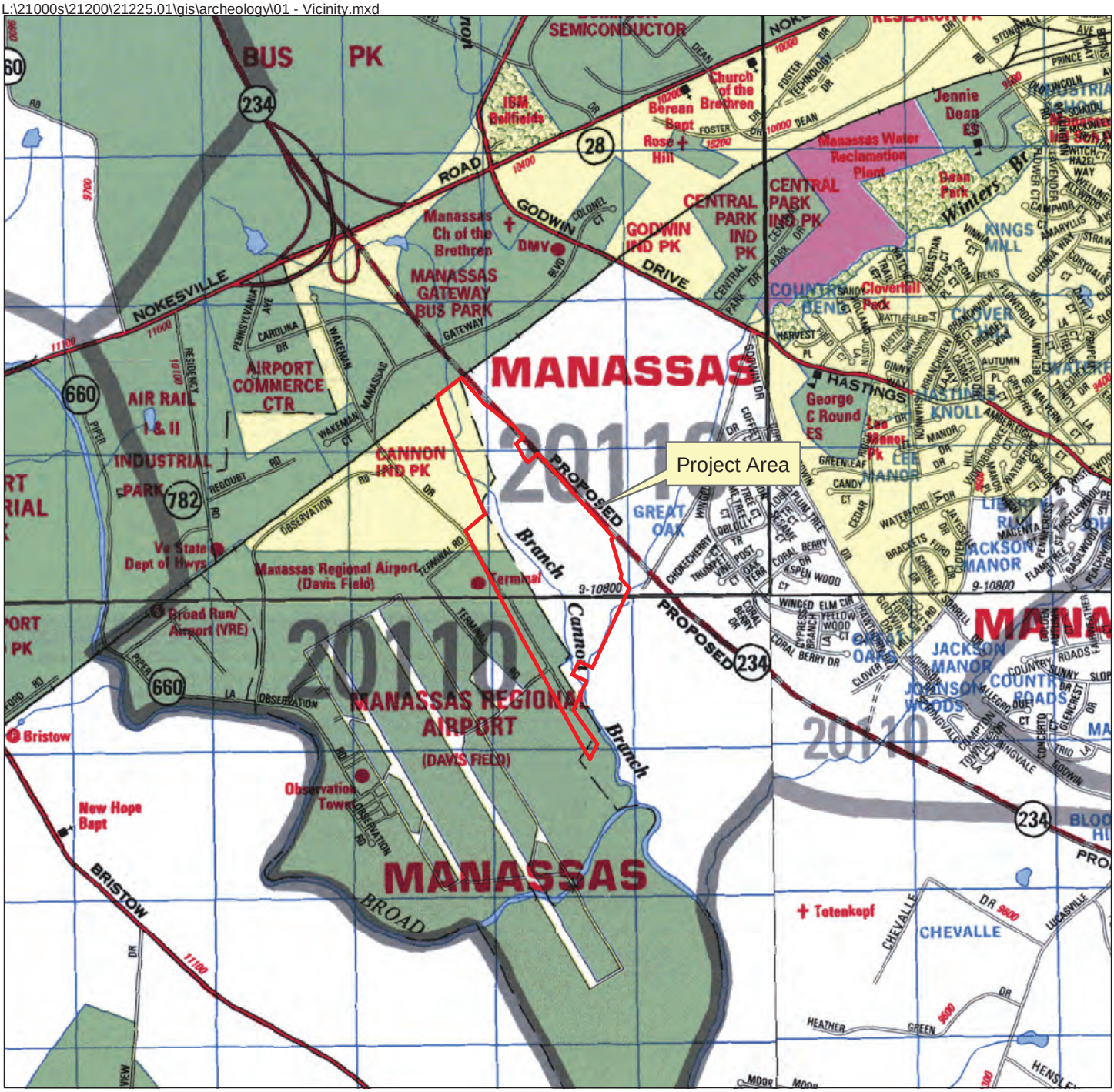
Christine Jirikowic, Ph.D., served as Principal Investigator on this project. Chris Shepherd served as the Field Supervisor, under the supervision of John P. Mullen, M.A. Tammy Bryant, M.A., served as Laboratory Supervisor, and Kelsey Woodman conducted the artifact analysis. The background material was prepared by Joan Walker, Ph.D.

Fieldwork and report contents conformed to the guidelines set forth by the Virginia Department of Historic Resources (VDHR) for a Phase I reconnaissance level survey as outlined in their 2001 *Guidelines for Conducting Cultural Resource Survey in Virginia, Additional Guidance for the Implementation of the Federal Standards Entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (VDHR 2001) as well as the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (Dickenson 1983).

The purpose of the survey was to locate 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, Phase II work would be recommended.

All artifacts, research data and field data resulting from this project are currently on repository at the Thunderbird offices in Chantilly, Virginia.

L:\21000s\21200\21225.01\gis\archeology\01 - Vicinity.mxd




Copyright ADC The Map People
Permitted Use Number 2030312

**Vicinity Map**
**Glen-Gery Brick**
**WSSI #21225.01**
**Scale: 1" = 2000'**

N
W E
S

***Thunderbird Archeology***
***A division of Wetland Studies and Solutions, Inc.***

***Exhibit 1***

## ENVIRONMENTAL SETTING

Prince William County encompasses portions of the Coastal Plain Province and the Outer Piedmont Plateau, the Piedmont Triassic Lowland, and Inner Piedmont sub-provinces (Fenneman 1938; Bailey 1999). The Piedmont is underlain by igneous and metamorphic rocks of various origins that were folded during the Paleozoic as the North American and African plates converged. Later, in the Mesozoic, rifting occurred as Pangea broke apart and the Atlantic Ocean formed. The Piedmont ranges from 200 feet above sea level (a.s.l.) at the Fall Line to circa 1000 feet a.s.l. in the western portion at the Blue Ridge. Because of the intensive weathering of the underlying rocks in the Piedmont's humid climate, bedrock is generally buried under a thick, 6 to 60 foot blanket of saprolite.

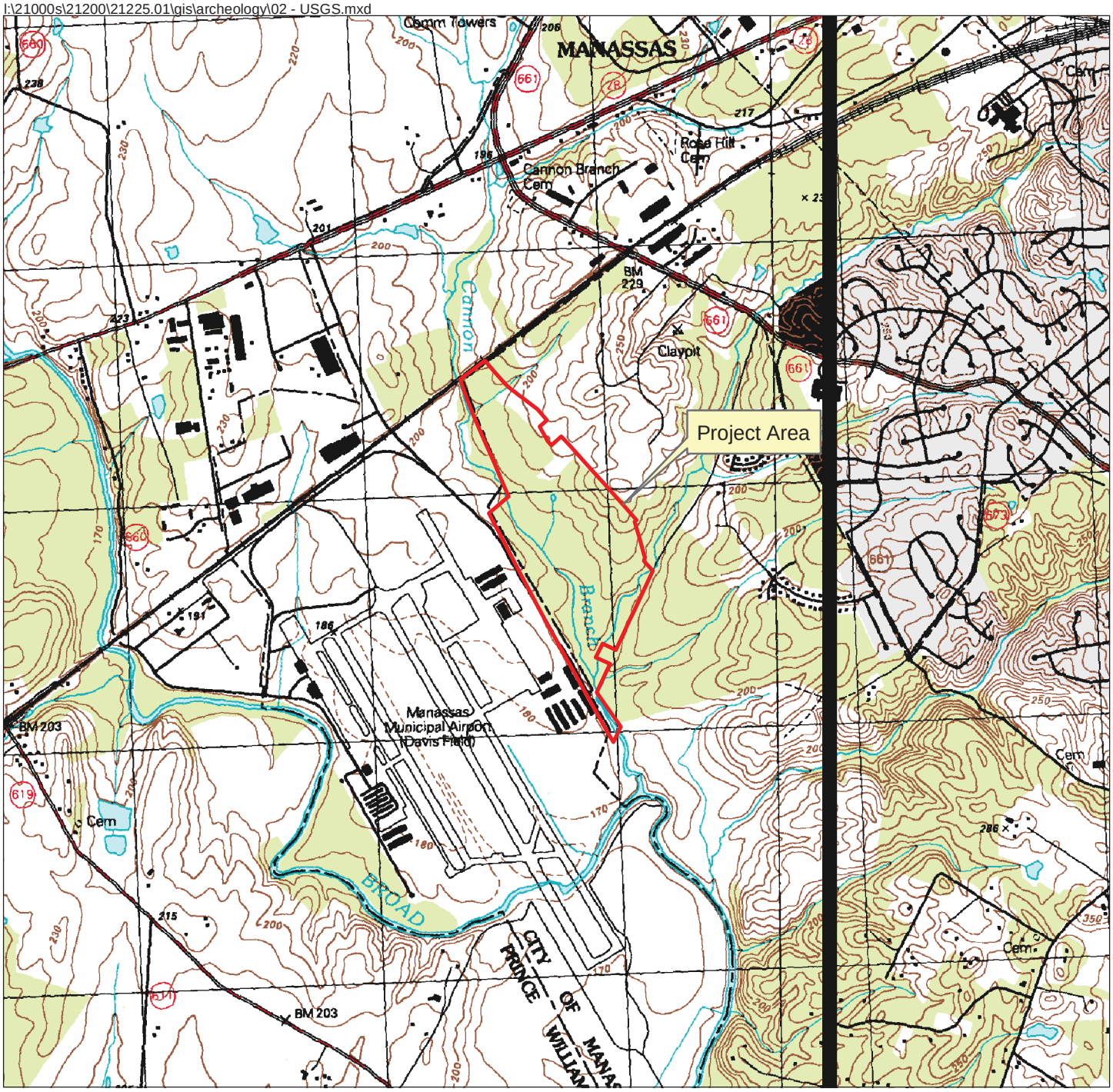
The Piedmont Province has been sub-divided into three sub-provinces: the Outer Piedmont Plateau, the Triassic Lowlands, and the Inner Piedmont Plateau. The project area lies in the Triassic Basin, or Triassic Lowlands. These are long, narrow rift valleys, or basins, formed during the Triassic period. These valleys, underlain by Mesozoic sedimentary and igneous rocks, have filled with sandstones and basalts. Elevations range from 200 to 400 feet a.s.l.

The project area adjoins the City of Manassas corporate limits and is located between the Route 234 bypass and the City-owned Manassas Airport. It is bounded on the northeast by Route 234, on the southeast by Station Access Road, on the southwest by the Manassas Airport and Wakeman Drive, and on the northwest by the Southern Railway. Topographically, the property is situated on terraces on either side of Cannon Branch, which flows through the southwestern portion of the project area (Exhibit 2). Winters Branch, a tributary of Cannon Branch, flows along the southeast edge of the property. Two smaller tributaries of Cannon Branch flow through the property; one in the central portion of the property, and one that flows across the northern edge of the property. Cannon Branch flows into Broad Run approximately 1000 feet south of the project area. Broad Run is a tributary of the Occoquan River, which empties into Belmont Bay on the Potomac River.

A major portion of the project area northeast of Cannon Branch has been severely disturbed by a clay mining operation that extends north beyond the project property on the far side of Route 234 (Exhibit 3). Most of the remaining property is within the floodplain of Cannon Branch; the exception being a small terrace on the southwest side of Cannon Branch.

The wooded portions of the property are mostly confined to the floodplain of Cannon Branch, with the exception of the higher ground along Wakeman Road. The areas disturbed by mining are open fields.

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**USGS Quad Map**
**Nokesville, VA 1994**
**Glen-Gery Brick**
**WSSI #21225.01**
**Scale: 1" = 2000'**

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***Thunderbird Archeology***
***A division of Wetland Studies and Solutions, Inc.***

***Exhibit 2***

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**Spring 2004 Color Infrared Imagery**
**Glen-Gery Brick**
**WSSI #21225.01**
**Scale: 1" = 1000'**

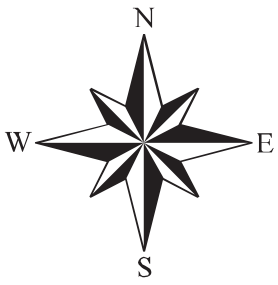



Photo Source: Wetland Studies and Solutions, Inc.

***Thunderbird Archeology***
***A division of Wetland Studies and Solutions, Inc.***

***Exhibit 3***

## PALEOENVIRONMENTAL BACKGROUND

The basic environmental history of the area has been provided by Carbone (1976; see also Gardner 1985, 1987, and 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 so characteristic of the parkland of 14-12,000 years ago. Animals were undergoing a rapid increase in numbers as deer, elk and, probably, 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 between 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 B.C. 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 B.C. 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 B.C., at which time the rise slowed, continuing at a rate estimated to be 10 inches a century (Darmody and Foss 1978). This rate of rise continues to the present. Based on the archeology (c.f. Gardner and Rappleye 1979), it would appear that the mid-Atlantic migratory bird flyway was established circa 6500 B.C.; oysters had migrated to at least the Northern Neck by 1200 B.C. (Potter 1982) and to their maximum upriver limits along the Potomac near Popes Creek, Maryland, by circa 750 B.C. (Gardner and McNett 1971), with anadromous fish arriving in the Inner Coastal Plain in considerable numbers circa 1800 B.C. (Gardner 1982).

During the historic period, at circa A.D. 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 streams tributary 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 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.

## CULTURAL HISTORICAL BACKGROUND

### Prehistoric Overview

A number of summaries of the archeology of the general area have been written (c.f. Gardner 1987; Johnson 1986; Walker 1981); a brief overview will be presented here. Gardner, Walker and Johnson present essentially the same picture; the major differences lie in the terminology utilized for the prehistoric time periods.

*Paleoindian Period (9500-8000 B.C.)*

The Late Pleistocene/Early Holocene of the Late Glacial period was characterized by cooler and drier conditions with less marked seasonal variation than is evident today. The cooler conditions resulted in decreased evaporation and, in areas where drainage was topographically or edaphically poor, could have resulted in the development of wetlands in the Triassic Lowlands (Walker 1981; Johnson 1986:P1-8). The overall cast of the vegetation was one of open forests with mixed coniferous and deciduous elements. The 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 and, to a lesser degree, elk, which would have expanded rapidly into the environmental niches left available by the extinction and extirpation of the herd animals and megafauna characteristic of the Late Pleistocene. As the evidence suggests now, the last of these creatures, e.g. mastodons, would have been gone from the area circa 11,000-11,500 years B.P., or just before humans first entered what is now Virginia.

Diagnostic artifacts of the earliest groups include Clovis spear points (Early Paleoindian), Mid-Paleo points, and Dalton points (Late Paleoindian). Although hard evidence is lacking, the subsistence settlement base of these groups appears to have focused on general foraging with an emphasis on hunting (Gardner 1989 and various). A strong component of the settlement and exploitative system was the preference for a restricted range of microcrystalline lithics, e.g. jasper and chert, a formal tool kit, and the curation of this tool kit. Based on current knowledge and predictive models, Paleoindian usage of the Piedmont was not intensive away from the major rivers, and most of these sites would have been transient hunting camps.

*Early Archaic Period (8500-6500 B.C.)*

The warming trend, which began during the terminal Late Pleistocene, continued during the Early Archaic. Precipitation increased and seasonality became more marked, at least by 7000 B.C. The open woodlands of the previous era gave way to increased closure,

thereby reducing the edge habitats and decreasing the range and numbers of edge adapted species such as deer. The arboreal vegetation was initially dominated by conifers, but soon gave way to a deciduous domination.

Archeologically, temporally diagnostic artifacts shift from the lanceolate spear points of the Paleoindians to notched forms (Johnson 1986:P2-4). Diagnostic projectile points include Palmer Corner Notched, Amos Corner Notched, Kirk Corner Notched, Kirk Side Notched, Warren Side Notched and Kirk Stemmed. Although the populations still exhibited a preference for the cryptocrystalline raw materials, they began to utilize more locally available materials such as quartz (Walker 1981:32; Johnson 1986:P2-1). The tool kit remained essentially the same as the Paleoindian, but with the addition of such implements as axes.

At the beginning of the Early Archaic the settlement pattern was similar to that of the Paleoindians. Changes in settlement become evident from 7500 B.C. on, accelerating after 7200 B.C. Among the major shifts were a movement away from a reliance on a restricted range of lithics and a shift toward expedience, as opposed to curation, in tool manufacture. Johnson feels that this shift is particularly marked during the change from Palmer/Kirk Corner Notched to Kirk Side Notched/Stemmed (Johnson 1983; 1986:P2-6). The changes are believed to be the result of an increase in deciduous trees and the subsequent closure of the forested areas. These changes are reflected in the fact that sites show up in a number of areas not previously exploited. A population increase also seems to be a factor in this increased number of sites.

*Middle Archaic (6500-3000/2500 B.C.)*

The Middle Archaic period, which corresponds to the Atlantic environmental episode, exhibited an acceleration of the warming trend (Walker 1981). Two major sub-episodes were present: an earlier, moister period that lasted until approximately 4500 B.C., and a later, warmer and drier period, the mid-Holocene Xerothermic, which ended at approximately 3000 B.C. A gradual reduction in rainfall and increased evaporation characterized the period, which was marked by an increase in deciduous vegetation, a more marked seasonality of plant resources, a decrease in the deer population (because of the disappearance of edge habitats), and an increase in the numbers of other game animals such as turkey. Importantly for the local area, more of a mosaic of forests and grasslands might have been present because of edaphic factors. The dominance of deciduous species offered a high seasonal mast (acorns, nuts) that provided a nutritious and storable food base (Walker 1981).

Diagnostic projectile points include Lecroy, Stanly, Morrow Mountain, Guilford, Halifax and other bifurcate/notched base, contracting stem and side notched variants. The tool kit is definitively more expedient (Walker 1981) and includes grinding and milling stones, chipped and ground stone axes, drills and other wood working tools.

With the increasing diversity in natural resources came a subsistence pattern of seasonal harvests. Base camps were located in high biomass habitats or areas with the greatest variety of food resources nearby (Walker 1981). These base camp locations varied according to the season; however, they were generally located on rivers, fluvial swamps, or interior upland swamps. 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. In contrast to the earlier preference for cryptocrystalline materials, Middle Archaic populations used a wide variety of lithic raw materials, and propinquity became the most important factor in lithic raw material utilization (Walker 1981 and Johnson 1986). Settlement, however, continued to be controlled, in part, by the distribution of usable lithics.

Early Archaic components show a slight increase in numbers, but it is during the Middle Archaic (Morrow Mountain and later) that prehistoric human presence becomes relatively widespread (Gardner various; Johnson 1986; Weiss-Bromberg 1987). Whereas the earlier groups appear to be more oriented toward hunting and restricted to a limited range of landscapes, Middle Archaic populations move in and out and across the various habitats on a seasonal basis. The Triassic Lowlands, with their numerous upland swamps, would have offered numerous attractive settlement loci (Walker 1981). Diagnostic artifacts from upland surveys along and near the Potomac show a significant jump during the terminal Middle Archaic (e.g. Halifax) and beginning Late Archaic (Savannah River). Johnson notes a major increase in the number of sites during the bifurcate phase (Johnson 1986:P2-14) and the later phases such as Halifax.

*Late Archaic (2500-1000 B.C.)*

During this time period, the climatic changes associated with the Sub-Boreal episode continued, although the climate began to ameliorate. At this time, a major adaptive element was found in the resources offered by the rivers and estuaries.

Diagnostic artifacts include broadspear variants such as Savannah River and descendant forms such as the notched broadspears, Perkiomen and Susquehanna, Dry Brook and Orient, and more narrow bladed, stemmed forms such as Holmes. Gardner (1987) separates the Late Archaic into two phases: Late Archaic I (2500-1800 B.C.) and Late Archaic II (1800-1000 B.C.). 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.

A new item in the inventory was the stone bowl manufactured of steatite, or soapstone. These were carved from material occurring in a narrow belt extending from Pennsylvania south to Alabama and situated, for the most part, along the edge of the Piedmont and Inner Coastal Plain provinces.

An increasingly sedentary lifestyle evolved, with a reduction in seasonal settlement shifts (Walker 1981; Johnson 1986:P5-1). Food processing and food storage technologies were becoming more efficient, and trade networks began to be established.

The most intense utilization of the region begins circa 1800 B.C. with the advent of the Transitional Period and the Savannah River Broadspear derivatives, which include the Holmes and other related points. In models presented by Gardner, this is linked with the arrival of large numbers 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 pattern of using seasonal camps continues. Although hunting camps and other more specialized sites may occur in the Triassic Lowlands, the larger base camps are expected to be found along rivers or in estuarine settings (Walker 1981). Use of the interfluvial Piedmont diminished during the Late Archaic. Sites from this period are less frequent and more widely scattered.

*Early Woodland (1000-500 B.C.)*

At this time during the Sub-Atlantic episode, more stable, milder and moister conditions prevailed, although short term climatic perturbations were present. This was the point at which the climate evolved to its present conditions (Walker 1981).

The major artifact hallmark of the Early Woodland is the appearance of pottery (Dent 1995; Gardner and McNett 1971). The Early Woodland period may be separated into three phases: Early Woodland I, II, and III. The earliest dates for pottery are 1200 B.C. in the Northern Neck (Waselkov 1982) and 950 B.C. at the Monocacy site in the Potomac Piedmont (Gardner and McNett 1971). This pottery is tempered with steatite, and the vessel shape copied that of the soapstone bowl, suggesting a local source for this innovation. This steatite tempered pottery is characteristic of the Early Woodland I period and is widely distributed throughout the Middle Atlantic (Dent 1995; Gardner and Walker 1993). Diagnostic points included smaller side notched and stemmed variants such as Vernon and Calvert. Early Woodland II pottery is characterized by steatite or other heavily tempered ceramics with conoidal bases that were made by the annular ring technique. This ware is referred to as Selden Island Cordmarked. The wide-spread adoption of this pottery type by groups throughout the Middle Atlantic was perhaps due to the fact that sand and grit was such a versatile temper, for groups once far removed from the steatite sources quickly adopted this new medium (Goode 2002:3, 26). Again, small stemmed or notched points are diagnostic artifacts. Sand tempered pottery (Accokeek) is the Early Woodland III descendant of these steatite tempered wares. Rossville/Piscataway points are the diagnostic spear points.

It is important to note that pottery underscores the sedentary nature of these local resident populations. This is not to imply that they 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. The 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 then have operated out of these base camps.

*Middle Woodland (500 B.C.-1000 A.D.)*

Diagnostic artifacts from this time period include various grit/crushed rock tempered pottery types including Albemarle and Popes Creek (common in the Coastal Plain) that appeared around 500 B.C. A local variant of the net marked pottery is Culpeper ware, found in the Triassic Basin. Net marking is characteristic of the Middle Woodland I period; however, it is supplanted by fabric impression and cord marking during the Middle Woodland II (Gardner and Walker 1993:4). Cord marked surfaces also occur on Culpeper ware, a sandstone tempered ceramic occasionally found in the Piedmont (Larry Moore, personal communication 1993). The associated projectile points are unclear, but do include small notched and/or stemmed forms. In general, the period from A.D. 200 to about A.D. 900 sees little population in the Potomac Piedmont.

*Late Woodland (1000 A.D. to Contact/depopulation)*

In the early part of the Late Woodland, the diagnostic ceramics in the Northern Virginia Piedmont region are crushed rock tempered ceramics for which a variety of names, such as Albemarle, Shepherd, etc., are used. The surfaces of the ceramics are primarily cord marked. Later in the Late Woodland, decoration appears around the mouths of the vessels and collars are added to the rims. In the Potomac Piedmont, circa A.D. 1350-1400, the crushed rock wares are replaced by a limestone tempered and shell tempered ware that spread out of the Shenandoah Valley to at least the mouth of the Monocacy. Below the Fall Line, a crushed rock tempered derivative of the earlier types, known as Potomac Creek ware, is found. Triangular projectile points indicating the use of the bow and arrow are diagnostic as well.

Horticulture was the primary factor affecting Late Woodland settlement choice and the focus was on easily tilled floodplain zones where the larger hamlets and villages were found. This was characteristic of the Piedmont as well as the Coastal Plain to the east and the Shenandoah Valley to the west (Gardner 1982; Kavanaugh 1983). The uplands and other areas were also utilized, for it was here that wild resources would have been gathered. Smaller, non-ceramic sites are found away from the major rivers (Hantman and Klein 1992; Stevens 1988).

Most of the functional categories of 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 river 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. The pattern of seasonally shifting use of the landscape begins circa 7000 B.C., when seasonal variation in resources first becomes marked. By 1800 B.C., runs of anadromous fish occur and the Indians spent longer periods of time along the larger rivers, although not necessarily in the Piedmont where the fish runs could not get above Great Falls (Gardner 1982, 1987). It is possible some horticulture or intensive use of local resources appears sometime after 1000 B.C., for at this time the seasonal movement pattern is reduced somewhat (Gardner 1982). However, even at this time and during the post-A.D. 900 agriculture era, extension of the exploitative arm into the upland and inter-riverine area through hunting, fishing and gathering remained a necessity.

Perhaps after 1400 A.D., with the effects of the Little Ice Age, the resulting 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 the exchange networks. A severe drought may have occurred in the 16th century. More centralized forms of social organization may have developed at this time, and 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**

Early English explorations to the American continent began in 1584 when Sir Walter Raleigh obtained a license from Queen Elizabeth of England to search for "remote heathen lands" in the New World, but all of his efforts to establish a colony failed. In 1606, King James I of England granted to Sir Thomas Gates and others of "The Virginia Company of London" the right to establish two colonies or plantations in the Chesapeake Bay region of North America in order to search "…. For all manner of mines of gold, silver, and copper" (Hening 1823, Vol. I:57-75).

It was in the spring of 1607 that three English ships--the *Susan Constant,* the *Godspeed*, and the *Discovery*, under the command of Captains Newport, Gosnole, and John Smith--anchored at Cape Henry in the lower Chesapeake Bay. After receiving a hostile reception from native inhabitants, exploring parties were sent out to sail north of Cape

Henry. Following explorations in the lower Chesapeake, an island 60 miles up the James River was selected for settlement (Kelso 1995:6, 7) and the colonists began building a palisaded fort which came to be called Jamestown. In 1608, Captain Smith surveyed and mapped the Potomac River, locating the various native villages on both sides of the Potomac River. Captain Smith's "Map of Virginia" supplies the first recorded names of the numerous native villages along both sides of the Potomac River. The extensive village network along the Potomac was described as the "trading place of the natives (Gutheim 1986:22, 23, 28). After 1620, Indian trade with the lower Coastal Plain English became increasingly intense. Either in response to the increased trade, or to earlier Indian-Indian hostilities, confederations of former disparate aboriginal groups took place.

Reaffirmed by an "Ancient Charter" dated May 23, 1609, King James outlined the boundaries of the charter of "The Virginia Company":

> "...in that part of America called Virginia, from the point of land, called Cape or Point Comfort, all along the sea coast, to the northward two hundred miles, and from the said point of Cape Comfort, all along the sea coast to the southward two hundred miles, and all that space and circuit of land, lying from the sea coast of the precinct aforesaid, up into the land, throughout from sea to sea, west and northwest; and also all the islands, lying within one hundred miles, along the coast of both seas..." (Hening 1823, Vol II:88)

In 1611, John Rolfe (who later married Pocahontas in 1614) began experimenting with the planting of "sweet scented" tobacco at his Bermuda Hundred plantation, located at the confluence of the James and Appomattox Rivers. Rolfe's experiments with tobacco altered the economic future of the Virginia colony by establishing tobacco as the primary crop of the colony; this situation lasted until the Revolutionary War (O'Dell 1983:1; Lutz 1954:27). Because tobacco was used as a stable medium of exchange, promissory notes, used as money, were issued for the quantity and quality of tobacco received (Bradshaw 1955:80, 81). Landed Virginia estates, bound to the tobacco economy, became independent, self-sufficient plantations, and few towns of any size were established in Virginia prior to the industrialization in the south following the Civil War.

A number of early English entrepreneurs were trading along the Potomac River in the early 1600s for provisions and furs. By 1621, the numbers of fur trappers had increased to the point that their fur trade activities became regulated. Henry Fleet, among the better known of the early Potomac River traders, was trading in 1625 along the Potomac River as far north as the Falls, with English colonies in New England, settlements in the West Indies; and across the Atlantic to London (Gutheim 1986:28, 29, 35, 39).

The first Virginia Assembly, convened by Sir (Governor) George Yeardley at James City in June of 1619, increased the number of "corporations" or boroughs in the colony from seven to eleven. In 1623, the first laws were made by the Virginia Assembly establishing the Church of England in the colony. These regulated the colonial settlements in relationship to Church rule, established land rights, provided some directions on tobacco

and corn planting, and included other miscellaneous items such as the provision "…That every dwelling house shall be pallizaded in for defence against the Indians" (Hening 1823, Vol I:119-129).

In 1617, four parishes--James City, Charles City, Henrico and Kikotan--were established in the Virginia colony. By 1630, the colony had expanded, now comprised of a population of about 5,000 persons; this necessitated the creation of new shires, or counties, to compensate for the courts which had become inadequate (Hiden 1980:3, 6). In 1634, that part of Virginia located south of the Rappahannock River was divided into eight shires called James City, Henrico, Charles City, Elizabeth Citty [sic], Warwick River, Warrosquyoake, Charles River, and Accawmack, all to be "…governed as the shires in England" (Hening 1823, Vol I:224). Ten years later, in 1645, Northumberland County, located on the north side of the Rappahannock River, was established "…for the reduceing of the inhabitants of Chickcouan [district] and other parts of the neck of land between Rappahanock River and Potomack River," thus enabling European settlement north of the Rappahannock River and Northern Virginia (Hening 1823, Vol I:352-353).

Early settlers who had seated plantations in Northern Virginia along the Potomac River shipped their tobacco crops by means of trading ships; these were able to find convenient anchorages at the mouths of the creeks and rivers. In order to control tobacco shipping and trade and to afford protection for the early settlers, the first Acts of the Virginia Assembly for Northern Virginia and the Potomac River were to establish forts "within command of which forts all ships trading to these respective places may conveniently, and in all probability securely ride and load." (Hening 1823, Vol II:256). The first fort in Prince William County was ordered to be built in 1667 on the Potomac River near the mouth of Yehocomico (Neabsco Creek), "ten foote high and towards the [Potomac] river or shipping tenn foote thick at least." (Hening 1823, Vol II:257). The second Act establishing a fort at this location was passed on April 2, 1679:

> "And because there is noe neighbouring Indians on Virginia side resideing near the garrison on Potomack river, the commander in cheife of that garrison is hereby impowered and requested to hyre fowre of the Matteoman Indians in Maryland for the service of that garrison" (Hening 1823, Vol II:438).

Prior to 1692, most lands in the Virginia Colony were granted by the Governor of the colony under the "head right" system and were issued as Virginia Land Grants. In 1618, a provision of 100 acres of land had been made for "Ancient Planters," or those adventurers and planters who had established themselves as permanent settlers prior to 1618. Thereafter, Virginia Land Grants were issued by the "headright" system by which "any person who paid his own way to Virginia should be assigned 50 acres of land...and if he transported at his owne cost one or more persons he should...be awarded 50 acres of land" for each (Nugent 1983:XXIV).

King Charles I was beheaded in January 1648/9 during the mid-17th century Civil Wars in England. His son, Prince Charles II, was crowned King of England by seven loyal

supporters, including two Culpeper brothers, during his exile near France in September 1649. For their support, King Charles granted his loyal followers "The Northern Neck," or all that land lying between the Rappahannock and Potomac Rivers in the Virginia colony; the grant was to expire in 1690. King Charles II was subsequently restored to the English throne in 1660.

In 1677, Thomas, Second Lord Culpeper became successor to Governor Berkley in Virginia, and by 1681, he had purchased the six Northern Neck interests of the other proprietors. The Northern Neck grant (due to expire in 1690) was reaffirmed by England in perpetuity to Lord Culpeper in 1688. Lord Culpeper died in 1689, and four-fifths of the Northern Neck interest passed in 1690 to his daughter, Katherine Culpeper, who married Thomas, the fifth Lord Fairfax. The Northern Neck became vested and was affirmed to Thomas, Lord Fairfax, in 1692 (Kilmer and Sweig 1975:5-9). In 1702, Lord Fairfax appointed an agent, Robert Carter of Lancaster County, Virginia, to rent the Northern Neck lands for nominal quit rents, usually two shillings sterling per acre (Hening 1820, Vol IV:514-523; Kilmer and Sweig 1975:1-2, 7, 9).

The extent and boundaries of the Northern Neck were not established until two separate surveys of the Northern Neck were conducted. These were begun in 1736, and a final agreement was reached between 1745 and 1747 (Kilmer and Sweig 1975:13-14).

In 1730/31, Prince William County was established from the northern part of Stafford County (Hening 1820, Vol IV:303) and was named for William Augusta, Duke of Cumberland, the second son of King George II of England. Parent counties of Prince William County were Northumberland (1645-1651), Lancaster (1651-1653), Westmoreland (1653-1664), and Stafford (1664-1730/31). In 1742, the county was divided in half, and all of the northern part of Prince William County above the Occoquan River and Bull Run became the county of Fairfax (Hening 1819, Vol V:207-208). In 1759, Fauquier County was established from the western part of Prince William County (Hening 1820, Vol VII:311-312).

Dumfries, the oldest town in Prince William County, began with the establishment of Richard Gibson's mill site at the mouth of Quantico Creek in about 1690. By 1713, merchants from Glasgow, Scotland, had moved into the area then known as the settlement town of Quantico and began a flourishing tobacco trade on the Potomac River. To prevent the exportation of bad quality “trash” tobacco from being shipped from Virginia to England, the Virginia Assembly passed an Act in 1730 establishing houses for the inspection and grading of tobacco prior to its shipment. A tobacco warehouse was established at Quantico (Dumfries) on Robert Brent’s land in 1730/31. Until 1763, Dumfries was the second leading port for tobacco shipping in Colonial America (Martin 1836:274).

U. S. Route 1, running through the town of Dumfries, was originally known as the "Potomac Path." Throughout the 1700s and 1800s the Potomac Path had various names including "King's Highway," the "Dumfries and Occoquan Road, and "the Richmond-Washington Highway;" today it is known as the "Jefferson Davis Highway." The first

Prince William County courthouse was located on the Potomac Path, near the south side of the Occoquan River, a short distance above the town of Colchester (Harrison 1987:311-312, 315).

At a Council held at the Capitol at Williamsburg on October 22, 1742, a second Prince William County courthouse was proposed:

> "It was referred to Col Henry Fitzhugh Col Will.m. Fairfax and Col John Colvil to view the several places proposed for fixing the Courthouse of Prince William County...In obedience to which Order they met at the Iron Mines at Niapsco [sic; Neabsco Creek] and having heard all Parties & Evidences are of the opinion that Philemon Water's Plantacon [sic] is the most Convenient place to fix the Courthouse for the sd. County And have accordingly given the same under their hands dated 23d Nov.r. 1742...It is Ordered That the Courthouse of the County of Prince William Be Erected at the Plantation of Philemon Waters accordingly" (Hall 1945:109).

The location of the second courthouse is thought to have been located at the forks of the Dumfries Road on Water's plantation named *Ashmore* (Harrison 1987:316).

Poll lists of inhabitants in Prince William County in 1749 enumerated 2,222 white males of the age of 18 or older. In 1755, the poll lists show 1,384 white males age 18 or older and 1,414 slaves (Greene 1932:151). In 1762, 215 "land holders" paid land taxes in Prince William County. A total of 16 large land holders, or lease holders on this list, held between 1,000 and 10,000 acres of land. The remainder of the Prince William County land holders at this time held an individual average of between 100 and 300 acres of land (Huntington Library 1762).

The Prince William County militia during the French and Indian Wars was made up of 17 officers, 39 troopers and 21 foot soldiers. Wages and claims for military supplies needed for the protection of the colony's frontiers were generally paid in tobacco from an optional tax of one shilling in cash, or 10 pounds of tobacco from each tithable, collected in the respective counties (Hening 1820, Vol VII:11, 24-25); a tithable was a free person aged 16 years and over.

The 18th century witnessed a change from the planting of tobacco crops in the Piedmont counties to the cultivation of wheat and the introduction of plows:

> "…some years before the outbreak of the [Revolutionary] war the cultivation of this grain [wheat] had already been undertaken with more enthusiasm in this region [Prince William County]: that is after the profit from their tobacco had been greatly lessened by the heavy duties imposed in England; and besides, their lands, even then exhausted, not producing such large crops of tobacco, the profitable culture of wheat gave the land a new and greater value" (Harrison 1987:403).

Private claims to fishing shores in Virginia became a contentious issue with the Colony of Maryland along the Potomac River. Maryland's claims on the Potomac included all the fishing and shipping rights from Maryland to the Virginia shoreline (Smith 1980:16). In 1785, representatives from Maryland and Virginia met at George Washington's Mount Vernon estate to mediate, among other issues, fishing regulations and toll fares across the Potomac River. Negotiations reached a compromise, allowing Virginians to fish the Potomac River in exchange for the free entry of Maryland ships thorough the Virginia capes (Wharton 1957:65).

Among the various species of fish in the Potomac River, and the Potomac River tributaries during the eighteenth century, identified by their common names, were: sturgeon, bass, carp, perch, rock fish, and the spring runs of herring and shad. Shad was also identified during the colonial period as "white fish" (Neitzey 1991:48; Wharton 1957:64). Colonial fish preservation depended on curing by salting and packing in barrels either to be sold to local planters for their slaves or to be shipped abroad (Wharton 1956:66; Jackson and Twohig 1976, Vol II:218).

During the first half of the 18th century, siltation of the harbor at Dumfries, a result of upland soils washing down Quantico Creek, had caused increasing economic and shipping problems:

> "For that portion of the 18th century that Dumfries was a major tobacco part, the land that is now Prince William Forest Park was extensively farmed in tobacco. As the land was denuded for this purpose, serious erosion took place. Tons of silt washed down the water shed of the North and South Branches of Quantico Creek and ruined the harbor at Dumfries" (Curtis 1988:40).

During the Revolutionary War, the Virginia General Assembly passed Acts to draft men from each county in Virginia for military service. Colonel Henry Lee of Leesylvania, commander of the Prince William County militia, submitted a final summary on the annual drafts from the county dating from 1776 through 1780, listing 269 men who had been drafted. By a further Act requiring an additional draft in 1780, 48 men were drafted: "2 of whom cut off their fingers after the draft, 1 was discharged as being a Lunatick, 9 deserted, & 1 remains in the County armed" (McIlwaine 1930:163).

British subjects who held land and property in the Virginia colony were deemed to be enemy aliens and their lands and personal property in Virginia, including slaves, were ordered by the Virginia Legislature to be seized as Commonwealth property in 1777 (Hening 1822, Vol X:66-71). Heirs to the Fairfax family holding the Northern Neck were considered enemy aliens and subject to losing their land. “American citizens” in possession of leased Northern Neck lands at the time the Fairfax lands escheated obtained fee simple titles to the property by obtaining a certificate from the Governor of the Commonwealth, completing a Northern Neck Survey of the leased lands and paying a small fee.

Impacts to Prince William County during the Revolutionary War occurred late in the conflict and included the plundering of plantations along the Potomac River by privateers. On the first of April, 1781, a tender to the privateer *Trimer* went up the Potomac River, robbing the plantations as far as Alexandria in Fairfax County, where they were discovered attempting to capture a vessel. Henry Lee had, in the meantime, called out the militia to protect the warehouses on Quantico Creek near Dumfries. Prisoners of the privateer later revealed that they had intended to burn George Washington's houses at Mount Vernon, were planning to plunder Colonel Mason at Gunston Hall and Henry Lee at Leesylvania, and had also planned to take Henry Lee as a prisoner (Palmer 1881:21-22).

In September 1781, the final battle of the Revolutionary War at Yorktown, Virginia, was preceded by the movement of Washington's Continental Army, combined with Rochambeau's French Army, from Mount Vernon in Fairfax County through Prince William County via the town of Dumfries.

In 1787 a new town called Newport, located at the mouth of Quantico Creek on the Potomac, was authorized by the Virginia Assembly to be established on 30 acres of the property of Cuthbert Bullitt (Hening 1823, Vol XII:603-604). In 1788, the Virginia Assembly authorized the town of Carrborough to established on 50 acres of Willoughby Tebbs' property on the south side of Quantico Creek (Hening 1823, Vol XII:684; Harrison 1987:664). Unfortunately, neither the town of Newport nor the town of Carrborough was ever fully developed because of the increasing siltation, and the Scottish merchants moved to more favorable places (Work Projects Administration 1941:91). On December 7, an Act was passed by the Virginia Assembly to discontinue the inspection of tobacco at Dumfries warehouse. Jesse Ewell, proprietor of the warehouse, stated in a petition that the warehouse was no longer necessary for the reception and inspection of tobacco (Shepherd 1970:264).

Madison's *Map of Virginia*, published in 1807, shows three mill sites in Prince William County: one at Dumfries, on Quantico Creek near the Potomac River; one at Buckland, on Broad Run; and one in the town of Haymarket in the interior of Prince William County. The mill site of Buckland was established in 1798 (Harrison 1987:665) and the town of Haymarket was authorized in 1799. Haymarket was established on the land of William Skinker "lying at the place known by the name of the Red House" (Shepherd 1970:179-1980). Dumfries is shown on Madison's map at the head of the tobacco rolling road from Quantico Creek to the town of Winchester in Frederick County, Virginia. Haymarket is shown at the crossroads of the tobacco rolling road with the old Carolina Road. Two other north-south major roadways shown on Madison's map are the Potomac Path (Route 1), running from Stafford County through Prince William County to the town of Alexandria, and a road from Fauquier County through Prince William County to Georgetown, D.C**.** Madison's map does not show anything near the project area.

Martin's *Gazetteer of Virginia,* published in 1836, lists seven towns, or post offices, in existence in the county: Buckland, Dumfries, Hay Market, Liberia, Occoquan, Thoroughfare, and Brentsville, the county seat at that time. Data from the 1830 U.S.

Census Records indicates that the county had been showing a population decrease for the past 20 years, going from 11,311 people in 1810 to 9,320 in 1830 – almost an 18% decrease in the population (Martin 1836:273-275).

Major agricultural shipping and transportation impacts to Prince William County began in the early 1850s when the Orange and Alexandria Railroad was incorporated by an Act of the Virginia Assembly on March 27, 1848 (Commonwealth of Virginia 1850:190-193). Construction of this railroad began in 1850 in Alexandria and reached Tudor Hall (Manassas Junction) in October of 1851 (Harrison 1987:340). The Manassas Gap Railroad, routed through Thoroughfare Gap in northern Prince William County, was incorporated by an Act of the Virginia Assembly on March 9, 1850 (Commonwealth of Virginia 1851:73-74).

The plan for the two railroad systems was to extend the railroad lines from a junction of the two railroads at Tudor Hall (Manassas) through Manassas Gap to Strasburg in Shenandoah County, then to run south to Harrisonburg in Rockingham County, Virginia. The Warrenton branch of the Orange and Alexandria Railroad, with a connection to the Manassas Gap Railroad, was surveyed in 1850 (Salmon 1996:49). After the Civil War, in 1867, the Manassas Gap Railroad merged with the Orange and Alexandria Railroad and, in 1898, the Orange and Alexandria Railroad system become the Southern Railroad line (McCarty 1974:109).

On the night of December 26, 1860, Major Robert Anderson moved his troops from Fort Moultrie to Fort Sumter in the harbor of Charleston, South Carolina. Subsequently, on April 15, 1861, President Lincoln sent a reinforcement fleet of war vessels from New York to Fort Sumter to suppress the rebellion in the southern states. Two days later, the Commonwealth of Virginia seceded from the Union, adopting the Virginia Ordinance of Secession on April 17, 1861, and forming a provisional Confederate government (Gallagher 1989:29; Boatner 1991:729; Church and Reese 1965:134). The State formally seceded from the Union on May 23, 1861, by a vote of 97,000 to 32,000 (Bowman 1985:51, 55).

In Virginia, Confederate regiments formed by Prince William County residents included the "Bull Run Rangers", the "Prince William Calvary", the "Prince William Rifles", the Quantico Guards" and the "Prince William Rangers" (Work Projects Administration 1941:49).

From April 19, 1861, until March of 1862, the Potomac River was blockaded by the U.S. Navy under order of President Lincoln. In return, Confederate army batteries were established at critical points on the Virginia side of the Potomac River. One of the first Confederate batteries was established at Acquia Creek, where the Conferates destroyed the buoys and channel markers on the river, making navigation difficult for those unfamiliar with the channel (Wills 1978:22). Other batteries established in the area that at Evansport, at Shipping Point at the mouth of Quantico Creek, at Possum Point, at Cockpit Point south of Cherry Hill, and at Stoney Point on the Leesylvania Plantation at the mouth of Neabsco Creek. Confederate Brigadier General W. H. C. Whiting's

Brigade, which was camped in and around Dumfries, helped man the batteries and guard the Potomac and Occoquan Rivers against a Union Attack (Wills 1978).

The First Battle of Manassas, occurring along Bull Run from July 18th through July 21, 1861, was the first engagement of the Civil War. It took place north of the town of Manassas, in Prince William County. The second Battle of Manassas, August 29-30, 1862, began at the railroad station at Manassas Junction and extended to the town of Haymarket in Prince William County. Both battles were decisive victories for the Confederate army (Boatner 1991:507; Bowman 1985:111).

On March 8, 1862, the Confederate Army of the Potomac was withdrawn from northern Virginia and moved south to defend Richmond against an easterly advance by the Union Army under General McClellan, coming from Fort Monroe at the mouth of the James River. A Union reconnaissance of northern Virginia on March 15, 1862, found part of the Confederate Army in force at Warrenton Station in Fauquier County, Virginia, as well as two regiments of cavalry with three companies of infantry posted on Cedar Run south of Manassas in Prince William County (Scott 1881:1.5:550).

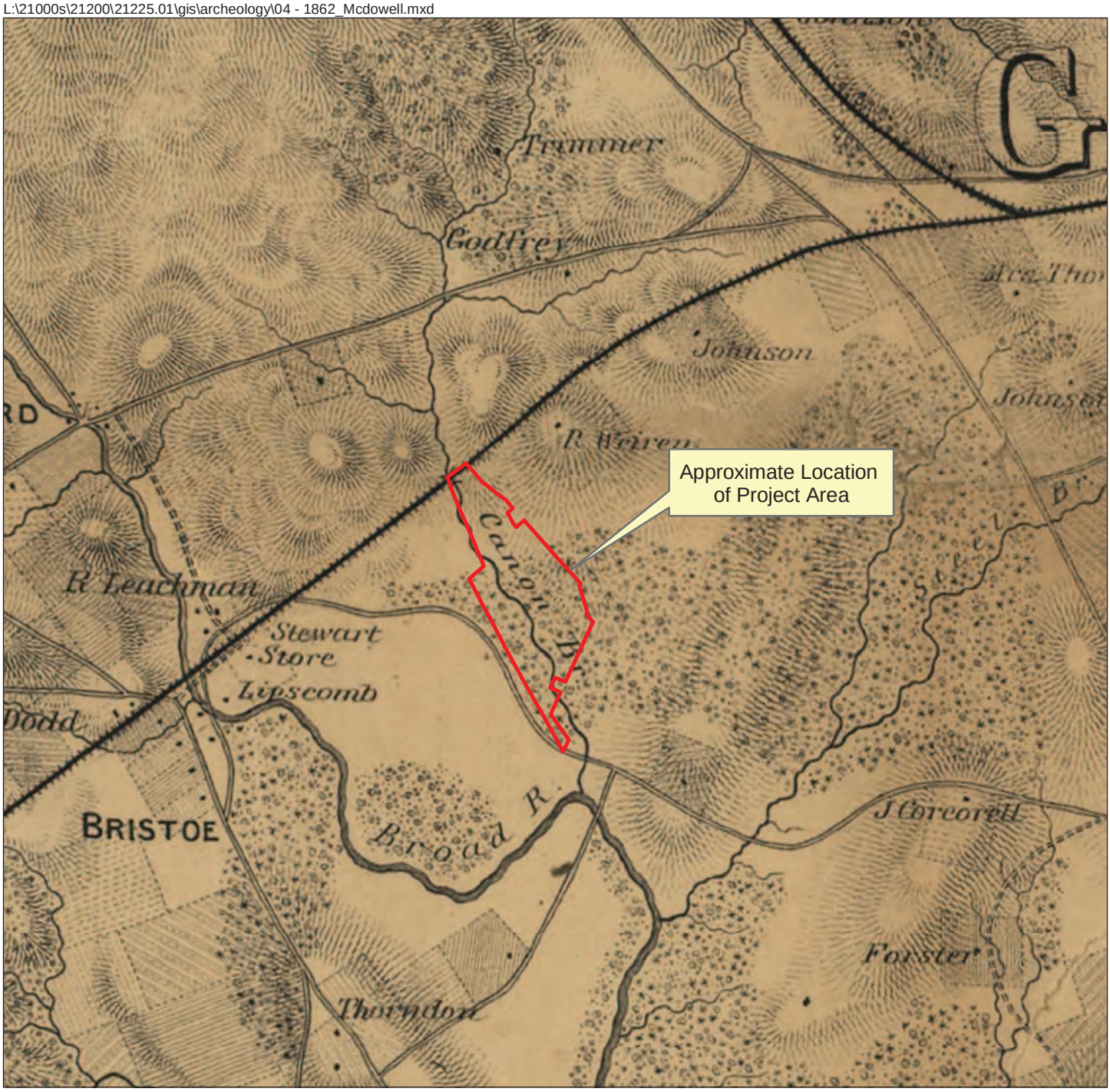
During the winter of 1861/1862, concurrent with the Potomac River blockade, the right flank of the Confederate army commanded by General Johnston was kept on alert in the Occoquan and Dumfries sector to counter a possible attack from either the Occoquan or the Potomac front (Hanson 1951:41). On December 12, 1862, a raid was made on the Confederate telegraph station in Dumfries. Colonel Anson Stager, superintendent of the U. S. Military Telegraph, reported:

> "Hampton, with 800 cavalry, made a raid on Dumfries at 5 o'clock this a.m.; cut telegraph and captured two operators and one repairer; also several officers, orderlies, &c. They left Dumfries about 8 o'clock, taking [the] road toward Bristoe. They stated that they were only a detachment of the force that had crossed with them, saying they expected, and came to meet, a large force of our cavalry. General Steinwehr's division marched into Dumfries at 10 this a. m. We have heard firing near Dumfries and to westward of it, which shows he has met the rebels and engaged them. The rebels paroled the officers, but retained the telegraphers" (Scott 1888:689).

McDowell's 1862 *Map of Northeastern Virginia and the Vicinity of Washington, D.C.* shows that most of the project area was wooded at that time (Exhibit 4). No structures are shown on the property. The Southern Railway bounded the northern edge of the property, and the road from Bristoe ran just to the southwest of the project area. Gilmer's 1864 map shows the same nearby features and the absence of structures on the property itself (Exhibit 5).

Until the late summer and early fall of 1863 the war effort in Prince William County remained relatively quiet. On October 9, 1863, in a maneuver to flank Union General Meade's Army of the Potomac, C.S.A. General Lee moved his army from the Rapidan River to the west and north, towards Mead's army who were occupying Culpeper Court-

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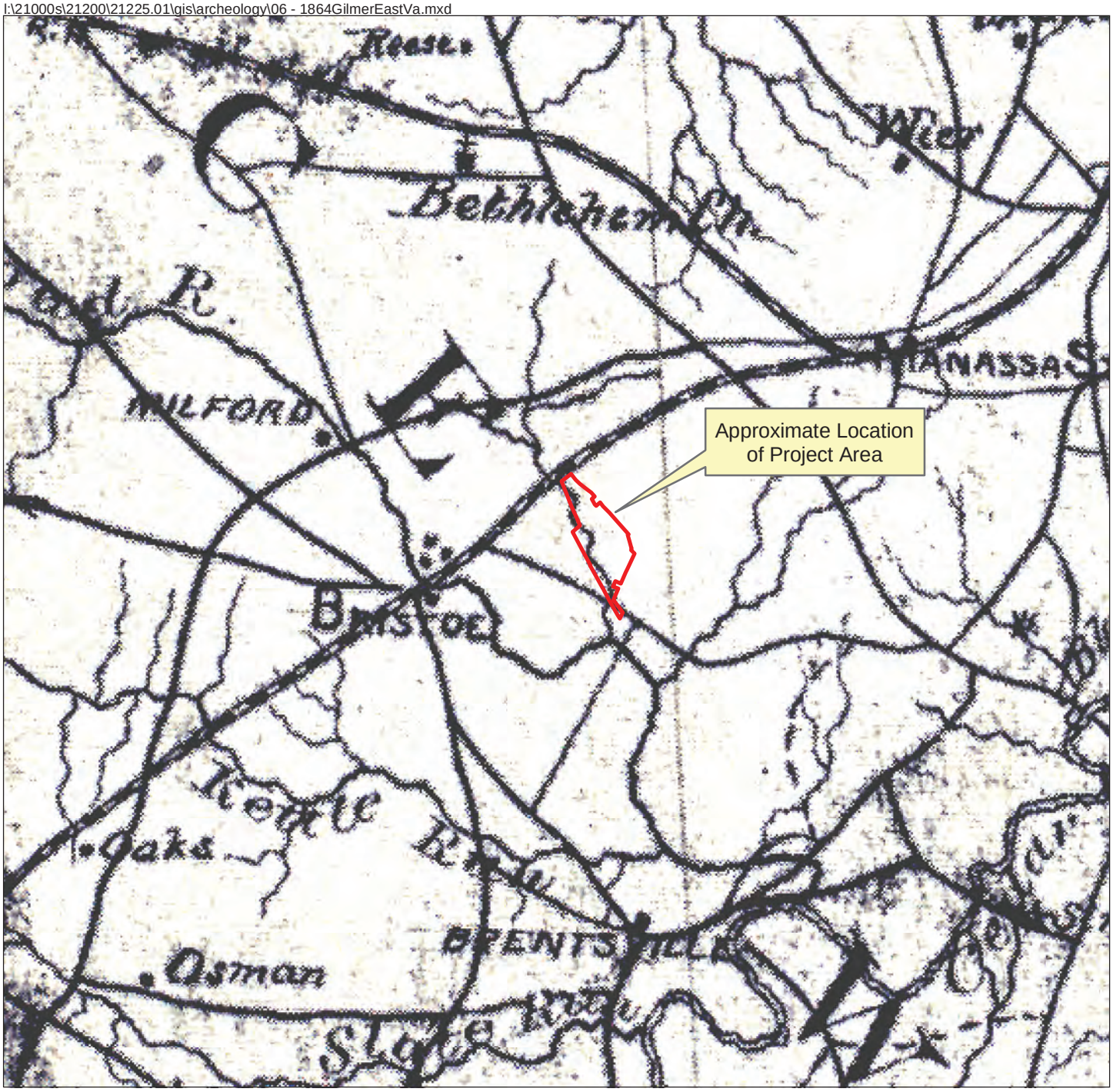



**1862 McDowell Map**
**Northeast Virginia and Vicinity of Washington D.C.**
**Glen-Gery Brick**
**Scale: 1" = ½ mile**

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Map Source: Map of N. Eastern Virginia and Vicinity of Washington. Compiled by General Irvin Mc Dowell, January 1862. United States. Corps of Topographical Engineers". Original Scale: 1" = 1 mile.

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**1864 Gilmer Map**
**Eastern Virginia**
**Glen-Gery Brick**
**Scale: 1" = 1 mile**

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**Map Source: "Eastern Virginia, 1864." Jeremy Francis Gilmer Collection. Virginia Historical Society. Original Scale: unknown.**

House in Culpeper County. (General Meade relieved General Joseph Hooker as commander of the Army of the Potomac in June 1863). Pushing Meade's army towards Washington, C.S.A. General A.P. Hill's Third Corps attacked the Union army near Bristoe Station, south of Manassas, on October 14, 1863. However inconclusive, both armies suffered severe casualties during the short battle and the Confederates did manage to force Meade back towards Washington. Lee's armies remained in the Prince William county area until October 17, 1863, when they retreated south to the Rappahannock River (Bowman 1985:168-172).

During the period of post-Civil War reconstruction, the Underwood Convention held in Richmond from December 1867 through April 1868 led to the new Virginia Constitution of 1869. The Virginia Constitution, ratified on July 6, 1869, provided for the division of each county into townships (later magisterial districts) and for the development of a revolutionary educational system. In 1871-1872 the Virginia Public Free School system was adopted. The Virginia Constitution also disenfranchised all southerners who had served in a civil capacity or in the military and required an oath by anyone seeking public office (Church and Reese 1965:134; Woods 1901:24, 25, 119).

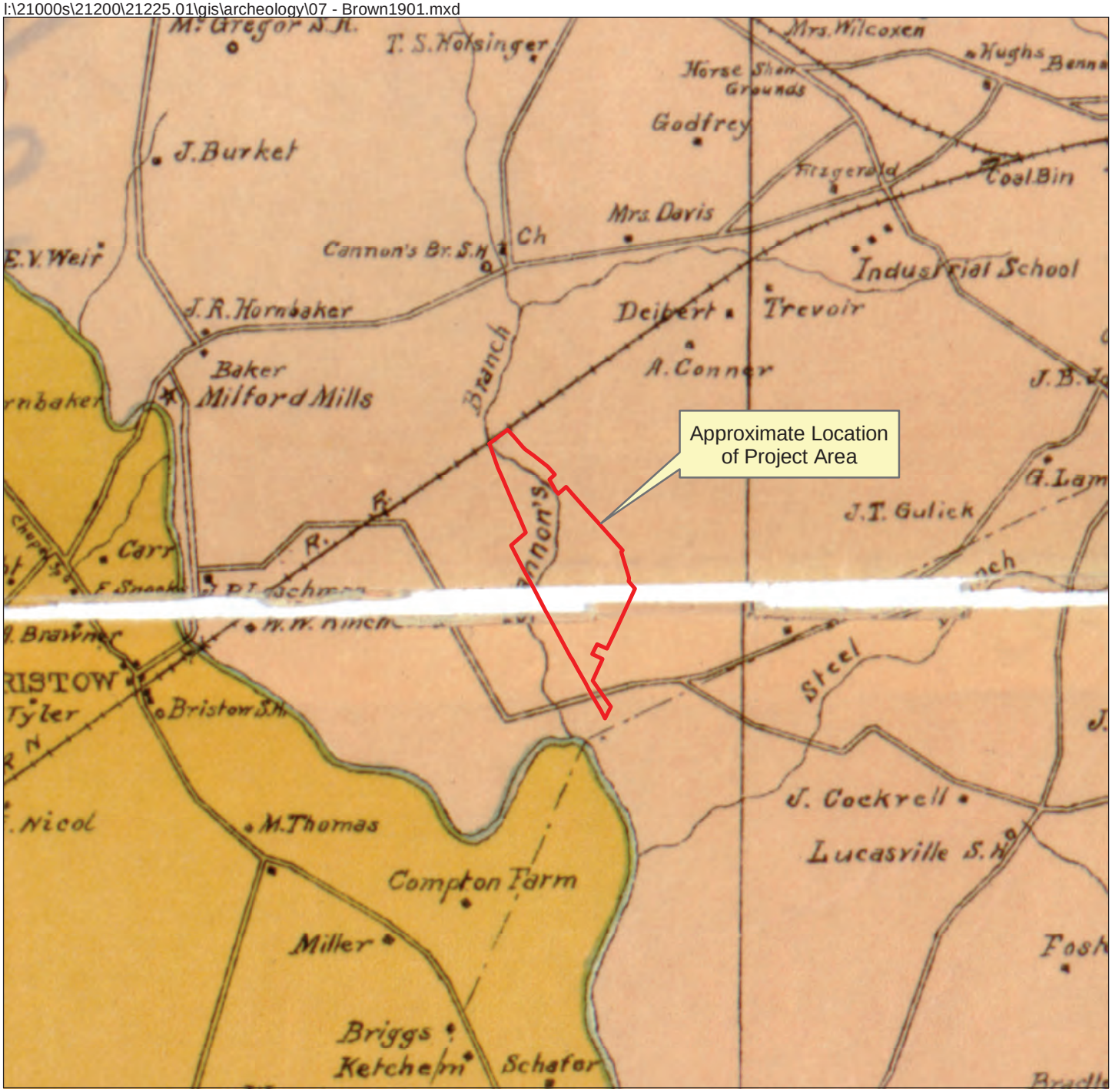
The first railroad in the southeastern part of Prince William County was the Richmond, Fredericksburg and Potomac Railroad, constructed from Richmond to Fredericksburg in Spotsylvania County prior to January of 1837. The railroad line reached Aquia Creek in Stafford County in November of 1842, when the extension of the railroad was abandoned. In 1869/1870, the Alexandria and Fredericksburg Railroad began purchasing rights-of-way through Prince William County (Prince William County Deeds 28:118) and the railroad was extended to Quantico Creek by 1872 (Curtis 1988:65).

The town of Manassas, established in 1854 as the Manassas Gap Railroad station, was incorporated by an Act of the Virginia Assembly on April 2, 1873. On March 1, an Act to allow the citizens of Prince William County to vote on the question of the removal of the court house from Brentsville to Manassas was authorized by the Virginia Assembly (Commonwealth of Virginia 1884:699-700; 1888:370-372). Prince William County residents approved the courthouse move, and the Prince William County seat was moved to Manassas in 1892.

Having been bypassed as a suburban area of Washington, D.C., the interior of Prince William County was considered rural at the turn of the century, with dairying one of the major sources of incomes. Along the Potomac River however, the economic sources changed to commercial fishing and lumbering. Prince William County's population at the turn of the turn of the century was approximately 11,000, showing little or no growth since the Revolutionary War (Prince William County Population Census 1900).

Brown’s 1901 map shows the Southern Railway and the road from Bristoe as shown on the earlier maps (Exhibit 6). No structures are shown on the project area. The *1923 United States Post Office Rural Delivery Routes Map* shows the same features with the addition of the residence of Britton located on or near the northern portion of the project area (Exhibit 7).

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**1901 Brown Map**
**Prince William County, Virginia**
**Glen-Gery Brick**
**Scale: 1" = ½ mile**

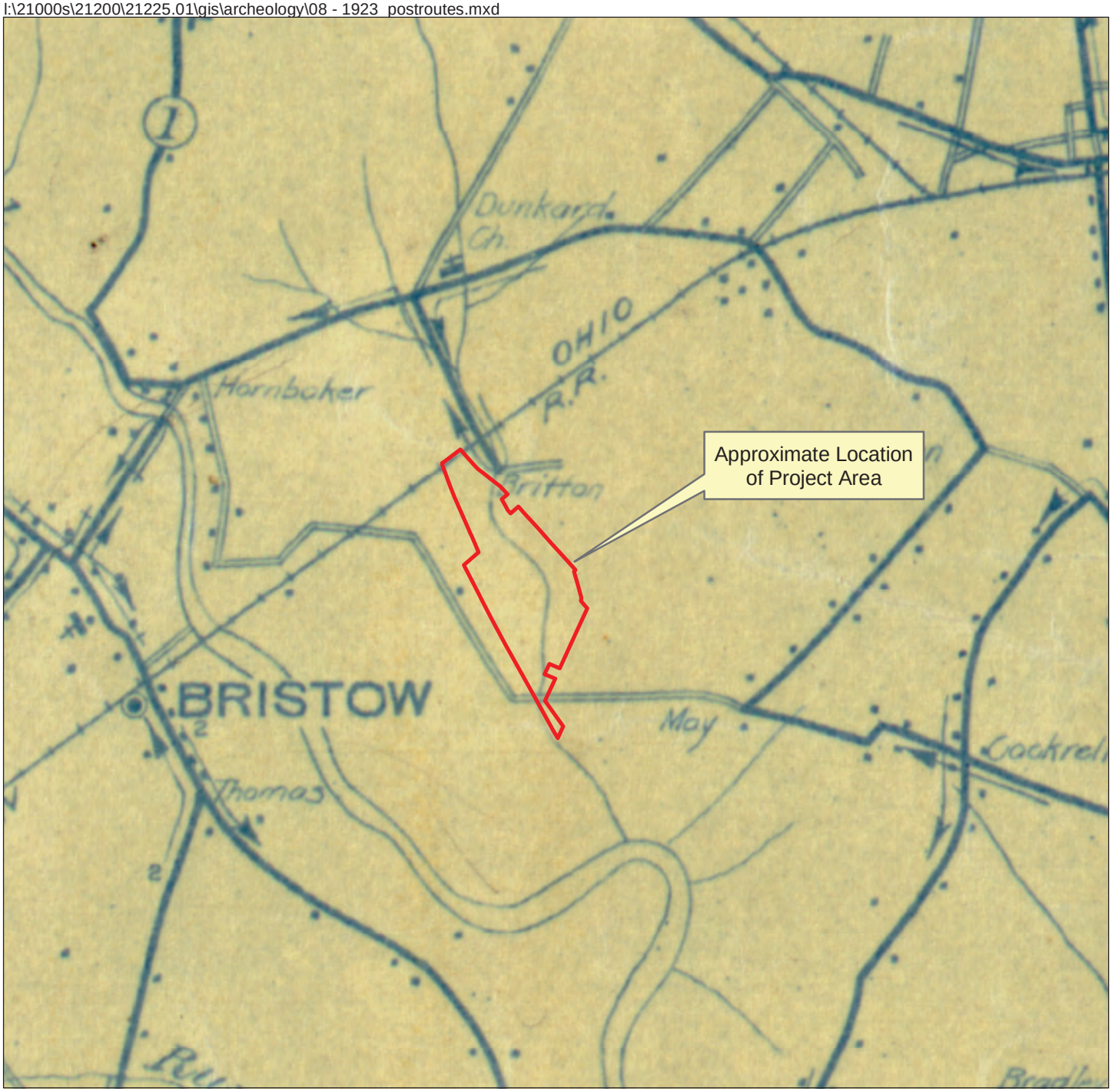
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Map Source: "Map of Prince William County, Virginia". 1901. Compiled from U.S. Geological Society survey and other data by William H. Brown". Library of Congress Geography and Map Division Washington D.C. Original Scale: 1" = 1 mile.

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***Exhibit 6***

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**1923 United States Post Office Rural Delivery Routes Map**
**Prince William County, Virginia**
**Glen-Gery Brick**
**Scale: 1" = ½ mile**

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**Map Source: "Rural Delivery Routes, Prince William County, Virginia. Post Office Department, 1923". Library of Congress Geography and Map Division Washington D.C. Original Scale: 1" = 1 mile**

In 1917, the U. S. Government leased two tracts of land in southeastern Prince William County which included 4,885.096 acres of hard land, 467.06 acres of marsh land, and 3.58 acres of submerged land, for a total of 5,355.736 acres of land collectively known as the "Hutchison Tract" and the "Quantico Company Tract." The Hutchison Tract (3,160.28 acres) was subsequently purchased form Hugh B. Hutchison in 1918, and the Quantico Company Tract (2,102.6 acres) was purchased in 1919. The two purchases were the beginning of the current Quantico Marine Base to which other purchases of land in Stafford County and Fauquier County, as well as in Prince William County, have been added throughout the 20th century (Department of the Navy Bureau of Yards and Docks 1937:371-372). The Quantico Marine Base currently occupies properties adjoining the south side of the Prince William Forest Park.

The Prince William Forest Park was established during the early years of the Great Depression of the 1930s. In 1933, the United States Government declared approximately 15,000 acres of the Quantico Creek watershed in Prince William County as "sub marginal," or "severely depressed farm area" lands in order to develop a "new project called Chopawamsic Demonstration Area" to form the Emergency Conservation Work Program (Civilian Conservation Corps). The Civilian Conservation Corps operated from 1933 until the beginning of World War II as a government agency to provide work for low income young men. Approximately 150 farms were condemned and the families were relocated. In 1940, the property was transferred to the jurisdiction of the U.S. National Park system (Curtis 1988:41; Evans 1989:104, 118; VDHR Site Forms 76-299, 76-135).

The introduction in the 1920s of the automobiles and trucks after World War I and the subsequent development and improvement of roadways throughout the county prior to World War II in the 1940s led to the decline of the railroad system in northern Virginia. Although railroading as a form of transportation and shipping saw a revival during World War I, the revival was only temporary

Following World War II the population of Prince William County doubled from approximately 11,000 individuals enumerated in the 1900 census, to 21,000 people residing in the county in 1950. In 1956, the U.S. Congress passed legislation creating the Highway Trust Fund; this was the beginning of the development of the Interstate Highway System. Condemnations for the route of Interstate 66 across northern Virginia began in circa 1962 (Evans 1989:130; Netherton et al. 1992:596). Construction of I-95 was begun in 1958.

Interstate I-95 was extended south from the Leesburg Pike (Route 7) to a junction with U.S. 1 in Woodbridge in Prince William County, allowing the eastern portion of the county to spread. Within 40 years more than 2.5 million people became new residents of the county (Evans 1989:130).

The 1953 U.S.G.S. Nokesville topographic quadrangle shows no structures or other cultural features on the project area (Exhibit 8). It does show that the nearby road that ran from Bristoe was no longer in use beyond a residence south of the project area and west of Cannon Branch. The 1996 U.S.G.S. Nokesville quadrangle shows no structures on the property and that most of the floodplain of Cannon Branch was wooded, while the remainder of the project area was cleared (Exhibit 9). It also shows that the earliest portions of the Manassas Municipal Airport (Davis Field) had been built by that time.

## PREVIOUS ARCHEOLOGICAL RESEARCH

The following inventory of previously recorded historic sites within and near the project area was established with the use of the online Data Sharing Service of the Virginia Department of Historic Resources (VDHR) as well as examination of cultural resource management reports at the Thunderbird Archeology offices in Chantilly, VA. The inventory includes sites within an approximate one-mile radius of the project area.

A total of 11 archeological sites have been recorded within a one mile radius of the center of the project area; none of these lie within the boundaries of the project area itself. Seven of these sites were prehistoric, two were historic period sites, and two had both prehistoric and historic components.

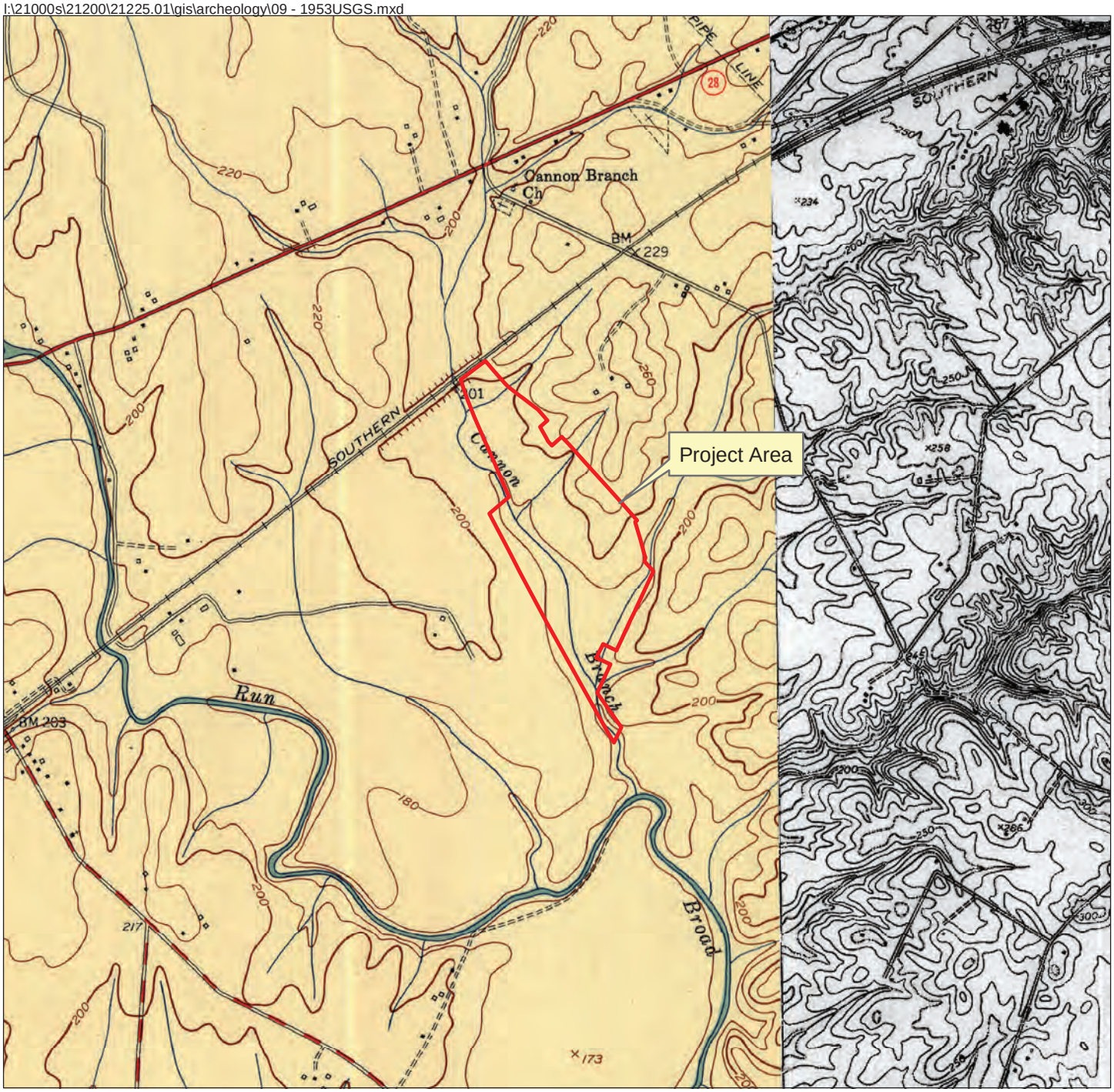
Five sites with prehistoric components (sites 44PW11 – 44PW15) were found during a 1978 survey of the Manassas Municipal Airport. One of these, 44PW12, also had a historic component dating to the 18th and 19th centuries; its prehistoric components dated from the Late Archaic to the Middle Woodland. Site 44PW11 yielded no diagnostic artifacts and could not be dated to a particular prehistoric time period. Site 44PW13 yielded artifacts dating to the Late Archaic. Artifacts from 44PW14 dated from the Early to Late Archaic, and those from 44PW15 dated from the Archaic to the Late Woodland.

Three sites within a mile radius of the project area having prehistoric components (sites 44PW600, 44PW602, and 44PW604) were found in 1992 during a survey of the proposed Broad Run Wetland Mitigation Project by the College of William and Mary. Site 44PW600 had a moderate to high density of prehistoric artifacts dating to the Late Archaic, Middle Woodland and Late Woodland. The site also yielded historic artifacts dating to the late 18th and early 19th centuries, possibly associated with a mill. No diagnostic artifacts were recovered from sites 44PW602 and 44PW604, and the dates of their occupations could not be determined.

Site 44PW729, located above the floodplain of Broad Run, was found during a survey of a planned expansion of the airport. The site yielded ceramic and lithic artifacts dating from the Middle Archaic through the Late Woodland.

Site 44PW486 is a historic domestic site located southeast of the project area and dating to the 20th century. It consists of a stone lined cellar and well and a light scatter of artifacts.

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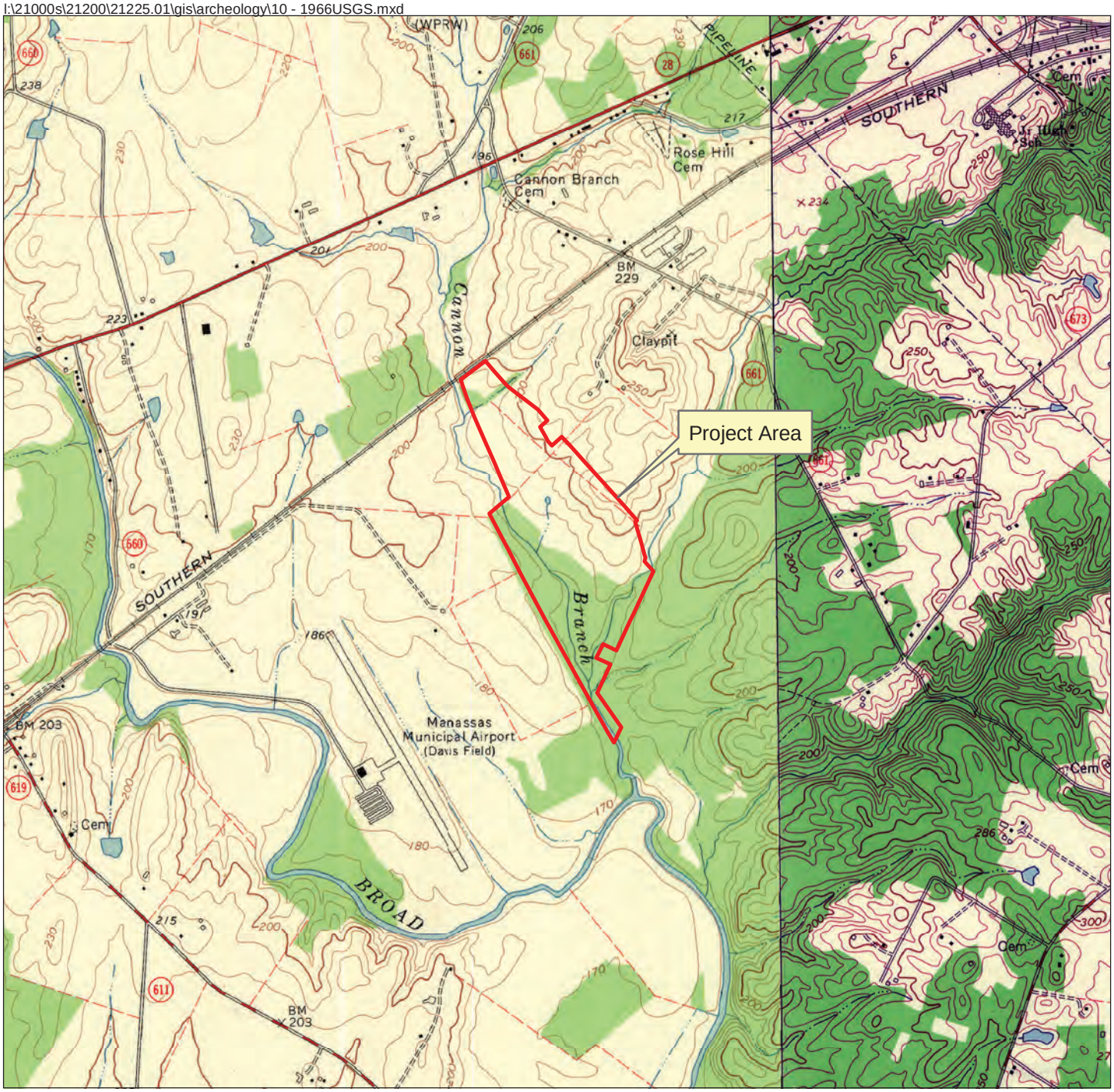

**USGS Quad Map**
**Nokesville, VA 1953 & Independent Hill, VA 1951**
**Glen-Gery Brick**
**WSSI #21225.01**
**Scale: 1" = 2000'**

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***Exhibit 8***

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**USGS Quad Map**
**Nokesville, VA 1966 & Independent Hill, VA 1966**
**Glen-Gery Brick**
**WSSI #21225.01**
**Scale: 1" = 2000'**

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Site 44PW227 is the archeological site associated with the Wakeman Fort (Structure 155-5020), located just northwest of the project area on the opposite side of the Southern Railway tracks. This Civil War earthwork consists of a 125 foot square parapet 3 to 5 feet in height with interior and exterior ditches. The fort was probably constructed by Union troops, but its strategic function is not understood. Subsurface testing around the fort apparently yielded few, if any, artifacts.

Bristow Battlefield District (Structure 76-24) is located approximately one mile west of the project area on the south side of Route 28. The major action that took place in this area is known as the Battle of Bristow and occurred on October 13, 1863. According to the VDHR structure form, this action involved over 100,000 Confederate and Union soldiers and resulted in a reevaluation of strategic plans for the rest of the war for both armies. The project area is not within sight of the Battlefield District, and the planned development of the property will not affect this historic property.

## RESEARCH EXPECTATIONS

The Glen Gery Brick property is located on broad terraces above Cannon Branch, a tributary of Broad Run. Three small tributaries of Cannon Branch also flow through the property. A number of prehistoric sites have been recorded on the terraces of Broad Run and its tributaries, some of them yielding substantial numbers of artifacts from multiple time periods. This would indicate that the property would have a moderate to high probability of containing prehistoric sites. However, a major portion of the property has been severely disturbed by the clay mining operation, thus eliminating the possibility of finding prehistoric – or historic period – sites in those areas. Therefore, the only portions of the project area where there is a moderate to high probability of there being prehistoric sites are those portions of the terrace that have not been mined.

Historic maps from the middle of the 19th century through the 1960s show no structures or other cultural features on the project area. Nevertheless, many historic structures, such as the residences of tenants and enslaved persons, were not shown on early maps. Nearby recorded historic sites include only one 20th century domestic site, one possible mill site, and one Civil War earthwork. Based on this information, there is a low to moderate probability of there having been historic domestic sites within the project area boundaries. The property's proximity to the Wakeman Fort and the Bristow Battlefield District suggest the possibility of there being Civil War related sites on the property. However, this possibility is limited to those small portions of the property that were not disturbed by the mining operation and are not within the floodplain, as the presence of historic sites within the floodplain is unlikely.

## FIELD AND LABORATORY METHODS

### Fieldwork

The Phase I field methodology included both the use of surface reconnaissance and shovel testing to locate and define boundaries of archeological sites. The surface reconnaissance consisted of walking over the area and examining all exposed areas for the presence of artifacts. Exposed areas included cut banks, tree falls, machinery cuts, soils exposed by erosion, etc. The surface reconnaissance was also used to examine the topography of specific areas in order to determine the probability that they contain archeological sites. All high probability areas--areas that were well drained and possessed low relief--were tested at 50 foot (15 meter) intervals. High probability areas also included historic structure areas identified through surface reconnaissance or through archival review of historic maps. Additional shovel tests were excavated at 25 foot (7.6 meter) intervals in a cruciform pattern around the positive shovel tests as necessary to define site boundaries and to delineate artifact concentrations. In general, the low probability areas were those that were sloping, poorly drained or that had been disturbed.

Shovel test pits measured at least 12 inches (30 cm) in diameter. Vertical excavation was by natural soil levels; excavation stopped when gleyed soils, gravel, water, or well developed B horizons too old for human occupation were reached. Soil horizons observed at the site were classified according to standard pedological designations. All soil was screened through 1/4-inch mesh hardware cloth screens. Soil profiles were made of representative units, with soil descriptions noted in standard soil terminology (A, Ap, B, C, etc.). Soil colors were described using the Munsell Soil Color Chart designations. Artifacts were bagged and labeled by unit number and by soil horizon.

### Laboratory

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.

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.

## RESULTS OF FIELD INVESTIGATIONS

The project area is located adjacent to the Manassas Regional Airport in Prince William County, Virginia. The property is situated between the Prince William Parkway (Route 234), which borders the property to the northeast, and Wakeman Drive, which forms the southwest property line. The Southern Railway tracks and Cannon Industrial Park border the project area to the northwest, and Station Access Road creates the southeastern property line (see Exhibit 1).

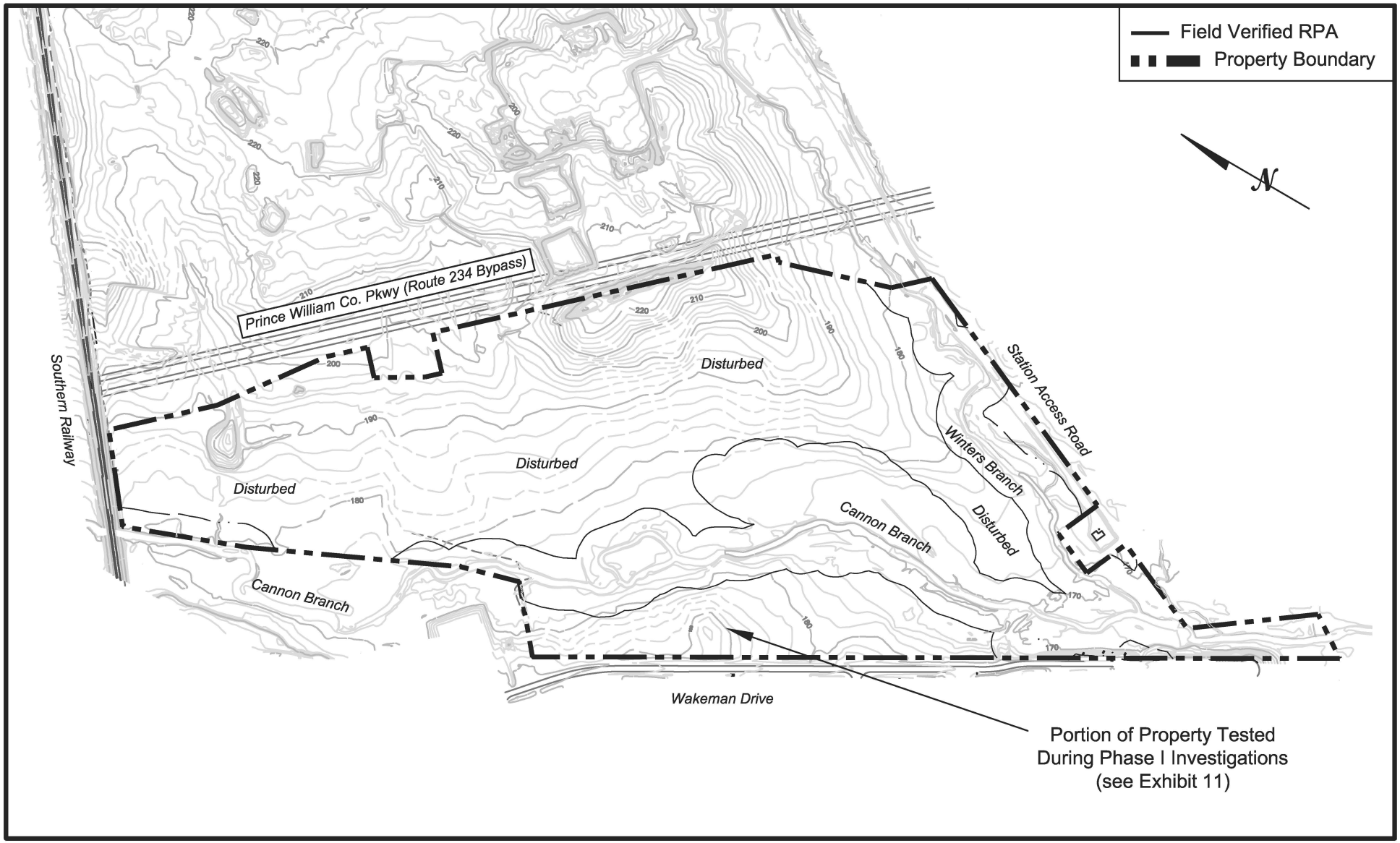
The majority of the property has been disturbed by clay mining operations, which extend beyond the property northward across the Route 234 bypass (see Exhibit 3). The area disturbed by the mining operations had been graded and is extremely compact. It is currently overgrown with various grasses and wildflowers (Plates 1 and 2). The portions of the property not disturbed by the mining operations consist of a small rise overlooking Cannon Branch to the northeast and the floodplain of Cannon Branch. Portions of the floodplain have been previously disturbed by the installation of a sanitary sewer line. With the concurrence of the Prince William County archeologist, the Phase I archeological investigations were confined to those portions of the property not disturbed by clay mining and not within the floodplain of Cannon Branch. The Phase I testing was therefore limited to one undisturbed landform along Wakeman Road (Exhibit 10). The floodplain was not tested during these investigations; however, if the undisturbed portions of the floodplain are to be impacted; once the scope and location is determined, a Phase I investigation must be carried out in the impact area before any work is to be done.

The portion of the property was wooded with relatively immature mixed deciduous trees, including mockernut hickory (*Carya tomentosa*), pin oak (*Quercus palustris)*, dogwood (*Cornus florida*), ailanthus (*Ailanthus altissima)* and sassafras (*Sassafras albidum*). Groundcover consisted of partridgeberry (*Mitchella repens*), Japanese honeysuckle (*Lonicera japonica*), Virginia creeper (*Parthenocissus quinquefolia*) and poison ivy (*Toxicodendron radicans*).

A total of 22 shovel test pits were excavated across the landform; two were positive with prehistoric artifacts (Exhibit 11). The soils consisted of a plow zone overlying subsoil; or plowed B horizons on portions of the sloped areas (Exhibit 12):

STP 12
- Ao/Ap: 0-8.4 inches (0-21.3 cm) below surface - [7.5YR 5/6] strong brown silty loam
- B horizon: 8.4-10.8 inches (21.3-27.4 cm) below surface - [5YR 5/6] yellowish red silty clay

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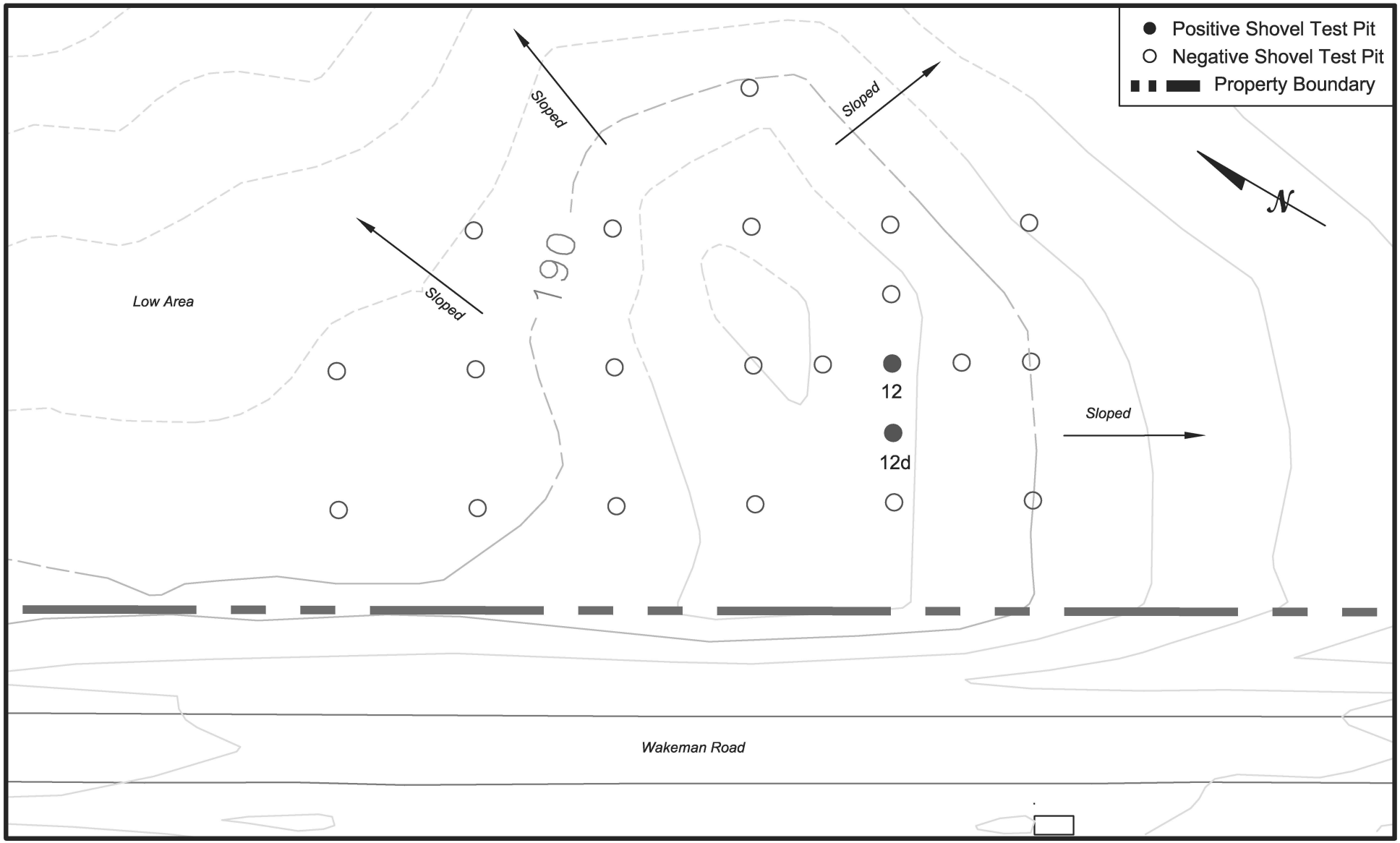



**Map Showing Project Area**
**Glen Gery Brick WSSI # 21225.01**
**Scale 1" = 600'**

***Thunderbird Archeology***
***A division of Wetland Studies and Solutions, Inc.***

***Exhibit 10***

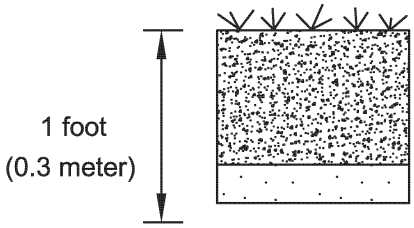
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**Portion of Project Map Showing Location of Phase I Testing**
**Glen Gery Brick WSSI # 21225.01**
**Scale 1" = 50'**

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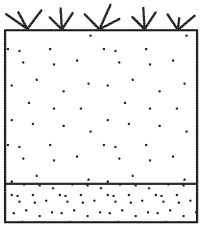
STP 12




Ao/Ap horizon: 7.5YR 5/6 strong brown silty loam

B horizon: 5YR 5/6 yellowish red silty clay

STP 3



Plowed B horizon: 5YR 5/6 yellowish red silty clay loam

B horizon: 7.5YR 4/6 red silty clay

**Representative Soil Profiles**
**Glen Gery Brick WSSI # 21225.01**
**Scale 1" = 1'**

STP 3

Ao/plowed B horizon: 0-9.6 inches (0-24.4 cm) below surface – [5YR 5/6] yellowish red silty clay loam

B horizon: 9.6-12 inches (24.4-30.5 cm) below surface – [2.5YR 4/6] red silty clay

One quartzite flake was recovered from STP 12. Additional shovel tests were excavated at closer intervals in a cruciform pattern around this positive shovel test. A single hornfels flake was found 25 feet to the west in STP 12d. Both flakes were recovered from the plow zone. No other artifacts were recovered from the shovel test pits.

## SUMMARY AND RECOMMENDATIONS

A Phase I investigation was conducted of a portion of the circa-120 acre Glen-Gery Brick property located near the Manassas Municipal Airport in Prince William County, Virginia. Two prehistoric artifacts were recovered from the Phase I testing. These artifacts do not constitute an archeological site; rather, they are considered to be isolated finds, representing transient use of the landform by prehistoric populations. No archeological sites were found on the property and no additional work is recommended.

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**PLATES**



PLATE 1
Southeast View of Disturbed and Graded Area from Route 234 Bypass



PLATE 2
Northeast View of Disturbed and Graded Area from Route 234 Bypass



PLATE 3
Overview of Vegetation, Looking East from STP 1



PLATE 4
Overview of Vegetation, Looking North from STP 1



PLATE 5
View of Tested Portion of Property Looking South from STP 1



PLATE 6
View Along Wakeman Drive Facing Northwest

**APPENDIX I**
**List of Qualifications**

# Christine Jirikowic

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Home: (703) 550-0680
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## PROFESSIONAL EXPERIENCE

**Principal Investigator**, Thunderbird Archeological Associates, Inc. March 2003 -- Present
Responsible for directing contracted archaeological field investigations conducted in compliance with local, state, and federal historic preservation laws and regulations; writing and editing reports; and conducting research in support of selected projects.

**Senior Archaeologist**, Gunston Hall Plantation November 2000 – November 2002
Responsible for directing the archaeology program, which included on-going research projects, public archaeology, interpretive programs, an annual symposium in historical archaeology, and a summer archaeological field school.

**Research Archaeologist**, Fairfax County Park Authority. April 1997 – October 2000
Cultural Resource Protection, Resource Management Division.
Responsibilities included participating in field survey and excavation projects; conducting historical research; supervising the archaeology lab; supervising interns and volunteers; participating on management teams for park development projects; developing recommendations in matters of cultural resources management within the Park Authority; designing database management systems for cultural resource data.

## PREVIOUS EXPERENCE

**Material Culture Researcher,** Smithsonian Institution. September 1994 – July 1997
*Handbook of North American Indians*, Department of Anthropology.
Responsible for researching and procuring illustrations of archaeological and ethnological artifacts for the Plateau volume of the *Handbook of North American Indians.*

**Field Technician,** Smithsonian Institution. September 1996
Paleoindian Program, Department of Anthropology.
Participated in excavations at Stewart's Cattle Guard Paleoindian site in the San Luis Valley, Colorado.

**Adjunct Faculty,** American University. August 1995 – December 1995
Department of Anthropology.
Taught "Seminar in Archaeology," an introductory course on archaeological method and theory.

**Staff Archaeologist,** American University. May 1988 – June 1994
Potomac River Archaeology Survey (PRAS), Department of Anthropology.
Worked intermittently as Field Technician, Crew Chief, and Lab and Field Director for various historic and prehistoric cultural resource management projects in Virginia and Maryland.

**Field Director**, American University. May-August 1990, 1991, 1994
Summer Archaeological Field School, Department of Anthropology.
Directed excavations at the Hughes site, a prehistoric village site in Montgomery County, Maryland.

**Crew Chief,** Smithsonian Institution. July – August 1993
Paleoindian Program, Department of Anthropology.
Directed field crew at the Black Mountain Paleoindian site in Colorado.

**Lab Technician,** Smithsonian Institution. July – August 1988
Department of Anthropology.
Cataloged and analyzed archaeological collection from the Potomac Creek site, Stafford County, Virginia.

**EDUCATION**

Ph.D. Anthropology, American University, Washington, D.C., 1995.
B.A. Anthropology, Grinnell College, Grinnell, Iowa, 1976.

**SELECTED REPORTS, PUBLICATIONS, AND PROFESSIONAL PAPERS**

Jirikowic, Christine, David Shonyo and Myra Lau
2002 *Through a Verdant Lens: Archaeological Investigations in George Mason's Formal Garden at Gunston Hall.* Paper presented at the Annual Meeting of the Middle Atlantic Archaeological Conference, Virginia Beach, Virgina.

Dent, Richard J. and Christine Jirikowic
2001 *Accokeek Creek: Chronology, the Potomac Creek Complex, and Piscataway Origins.* Paper presented the 67th Annual Meeting of the Eastern States Archaeological Society, Solomons, Maryland.

Jirikowic, Christine and Richard J. Dent
1999 *Final Report on Excavations at the Hughes Site*. Report on file at the Maryland Historical Trust, Office of Archeology.

Jirikowic, Christine and Richard J. Dent
1998 *Late Prehistory in the Middle Potomac Valley: Community and Cultural Landscape at the Hughes Site*. Paper presented at the Annual Meeting of the Society for American Archaeology, Seattle, Washington.

1995 *The Hughes Village Site: A Late Woodland Community in the Potomac Piedmont.* Doctoral dissertation, Department of Anthropology, American University, Washington, D.C.

## *John P. Mullen, M.A.*
## *Senior Field Supervisor*

John Mullen brings more than 10 years of experience in cultural resource management to Wetland Studies and Solutions, Inc. He has conducted all phases of archaeological research for Sections 106 and 110 compliance projects in the Middle Atlantic region. He also has experience in analyzing prehistoric and historic artifacts. Prior to joining WSSI, John Mullen was a field supervisor with Thunderbird Archeological Associates. Working extensively in the field and in the classroom with William M. Gardner afforded Mullen the opportunity to experience a multi-disciplinary environmental approach to archeological research.

His primary responsibility at Wetland Studies and Solutions, Inc. is the management of several teams of archeologists assigned to field projects, but also assists in writing proposals, writing and editing technical reports, and editing CAD exhibit drawings.

He has participated in and conducted research on diverse prehistoric and historic period sites including lithic quarries and reduction stations, Late Woodland palisaded villages, early 19th century military forts, Civil War campsites, 19th century iron works, a 19th century prison, historic cemeteries and numerous 19th and 20th century domestic sites.

## *Affiliations and Memberships:*

Society of American Archeology
Middle Atlantic Archaeological Association
Archaeological Society of Virginia
Washington Association of Professional Anthropologists 2005- 2006: President
1997- 2005: Newsletter Editor

## *Education:*

2004 The Catholic University of America, Washington, D.C.
M.A., Anthropology
1989 University of Massachusetts, Amherst.
B.A., Anthropology

## *Continuing Education:*

Section 106: An Introduction (National Preservation Institute), April 2005
AutoCad 2004: Level 1 Essentials, KEI Pearson, July 2004

## *Publications (selected):*

2005 Jirikowic, Christine, Joseph Blondino, John Mullen, Tammy Bryant and Gwen Hurst. *Phase III Data Recovery Excavations of 44SP90, The Landram House, City of Fredericksburg, Virginia.* Report prepared for the Ryland Group, Inc., Fairfax, Virginia.

2004 Mullen, John, Joan Walker and Gwen Hurst. *Phase III Data Recovery Excavations at Site 44SP382, A Civil War Campsite, Spotsylvania County, Virginia.* Report prepared for the Ryland Group, Inc., Fairfax, Virginia.

2003 William Gardner, John Mullen, Gwen Hurst, and Joan Walker. *Phase II Archeological Investigations at Loci 1, 15, 18 and 20 and Phase III Data Recovery at Locus 16,*

*44HT27, Fort Monroe, Hampton, Virginia.* Report prepared for Virginia Engineering and Environment, Inc. Virginia Beach, VA.

2002 *William Gardner, John Mullen, Gwen Hurst. Phase I-III Archeological Investigations of 4840 Eisenhower Avenue, Alexandria, Virginia. February 2002. Report prepared for Eisenhower, L.L.C. of Vienna, Virginia.*

2000 William Gardner, Gwen Hurst, and John Mullen. *Phase II Archeological Evaluations of Loci 6, 8, 16, and 19, 44HA27, Fort Monroe, Hampton, Virginia.* Report prepared for Virginia Engineering and Environment, Inc. Virginia Beach, VA.

1999 William M. Gardner and John Mullen. *A Phase I Archeological Resources Reconnaissance of Portions of the 500 Acre Big Bethel Reservoir Facility, Newport News, Hampton and York County.* Prepared for Engineering and Environment Inc., Virginia Beach, Virginia.

## *Presentations and Speaking Engagements:*

2002 Recent Excavations at Freedom's Fortress. Paper presented at the Middle Atlantic Archaeological Conference, Virginia Beach, Virginia.

2001 On the Pleistocene Terrace Back of Seldon Island. Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, Maryland.

2000 On the Pleistocene Terrace Back of Seldon Island. Paper presented at the Eastern States Archaeological Federation Solomon’s Island, Maryland.

1998 Recent work for Assembly of God, Bristow. Presentation to the Valley Chapter of the Archeological Society of Virginia.

1998 Recent Excavations at 44PW972, an early 19th century site in Bristow, Virginia. Paper presented at the Archeological Society of Virginia Annual Meetings, Winchester, Virginia.

1996 Recent Excavations at the USMMR Complex, Alexandria, Virginia. Presentation to the Washington Association of Professional Anthropologists, Washington, D.C.

## Appendix L: Historical, Architectural, Archaeological, and Cultural Resources Documents

2. Section 106 Technical Report with Project Review Application Form and Cultural Resources Due Diligence Report*

*Catawba Nation response is contained in Appendix E, Consultation Reference Number 1d.
VDHR Response is contained in Appendix E, Consultation Reference Number 24c.

# *Project Review Application Form*

This application must be completed for all projects that will be federally funded, licensed, or permitted, or that are subject to state review. Please allow 30 days from receipt for the review of a project. All information must be completed before review of a project can begin and incomplete forms will be returned for completion.

## I. GENERAL PROJECT INFORMATION

**1. Has this project been previously reviewed by DHR?** YES X NO ___ **DHR File #** 2025-4507

**2. Project Name** Manassas Regional Airport Part 139 Certification and Terminal Redevelopment Programmatic Environmental Assessment

**3. Project Location** Manassas (City) / (Town) / Prince William (County)

**4. Specify Federal and State agencies involved in project (providing funding, assistance, license or permit). Refer to the list of agencies and abbreviations in the instructions.**

| | |
|---|---|
| **Lead Federal Agency** | Federal Aviation Administration |
| **Other Federal Agency** | COE, DOI, EPA, FEMA, NOAA, NRCS, USFWS |
| **State Agency** | Virginia DCR, DEQ, DWR, VDOT, Natural Heritage Resources<br>Local Agencies: City of Manassas Planning and Development, Engineering; Prince William County Environmental Management, Planning<br>Nation/Tribe: Catawba Indian Nation, Chickahominy Indian Tribe, Delaware Nation, Pawmunkey Indian Tribe |

**5. Lead Agency Contact Information**

| | |
|---|---|
| **Contact Person** | Susan B. Stafford |
| **Mailing Address** | Beckley Airports Field Office, 176 Airport Circle Room 101, Beaver, WV 25813 |
| **Phone Number** | 304.252.6216 x 130 **Fax Number** |
| **Email Address** | susan.stafford@faa.com |

**6. Applicant Contact Information**

| | |
|---|---|
| **Contact Person** | Peter Byrne |
| **Mailing Address** | P.O. Box 1991 Apex NC 27502 |
| **Phone Number** | 631.496.6075 **Fax Number** |
| **Email Address** | pbyrne@avionsg.com |

## II. PROJECT LOCATION AND DESCRIPTION

**7. USGS Quadrangle Name** Nokesville USGS 7.5-minute quadrangle

**8. Number of acres included in the project** The 16 projects cumulatively total 133.74 acres

**MAIL COMPLETED FORM AND ATTACHMENTS TO:**
Virginia Department of Historic Resources
Attention: Project Review
2801 Kensington Avenue, Richmond, VA 23221
www.dhr.virginia.gov

**9. Have any architectural or archaeological surveys of the area been conducted?**

**YES_X**
**NO___**

**If yes, list author, title, and date of report here. Indicate if a copy is on file at DHR**

**All of the reports are at DHR except Mullen. It is Attachment 3 of the ASG Response to DHR August 28, 2025 Comments Memorandum which is included as a separate submittal.**
**Deitrick, Veronica L. and Christopher McDaid. 1994 (September 16).** ***A Phase I Archaeological Survey of the Proposed Helicopter Facilities Manassas Regional Airport Prince William County, Virginia C&P Job No. 9214; AIP No. 3-51-0030-10*****. DHR File No. 93-0611-F. Harris, Tery**
**2009 (February).** ***Phase I Archaeological Survey for the Proposed Extension of Runway 16L/34R and Taxiway B, Manassas Regional Airport, City of Manassas, Prince William County, Virginia.*** **DHR PW-323.**
**2017.** ***Archaeological Study for the proposed West Corporate Development and East Parcel Development at Manassas Regional Airport, City of Manassas, Prince William County, Virginia.*** **DHR File No. 2017-0348.**
**Jones, Joe B. and Christopher McDaid. 1992 (May 20).** ***A Phase I Cultural Resource Survey of the Proposed Broad Run Wetland Mitigation Project Prince William County, Virginia Project: WLBO-96A-101, PE101, C501*****. DHR PW-072.**
**McClearen, Douglas C. 1978 (May).** ***Archaeological Reconnaissance of the Manassas Municipal Airport, Prince William County, Virginia*****. DHR PW-2.**
**Mullen, John T. 2005 (August).** ***Phase I Archeological Investigations of the circa 120 Acre Glen Gery Property, Prince William County Virginia.***
**Smith, James M. 1978 (October 18).** ***Phase II Archaeological Survey of the Manassas Municipal Airport, Prince William County, Virginia*****. DHR PW-5.**

---

**10. Are any structures 50 years old or older within or adjacent to the project area?**

**YES___**
**NO_X_**

**If yes, give date(s) of construction and provide photographs.**

---

**11. Does the project involve the rehabilitation, alteration, removal, or demolition of any structure, building, designed site (e.g. park, cemetery), or district that is 50 years or older? If *yes*, this must be explained fully in the project description.**

**YES___**
**NO_X_**

**12. Does the project involve any ground disturbance (e.g. excavating for footings, installing sewer or water lines or utilities, grading roads, etc.)? If *yes*, this must be explained fully in the project description.**

**YES_X_**
**NO___**

**13. DESCRIPTION: Attach a complete description of the project. Refer to the instructions for the required information.**

**A detailed description of the PEA and its projects is presented in the FAA submission to VDHR dated August 13, 2025. That information is repeated here as Attachments A, B, and C.**

To the best of my knowledge, I have accurately described the proposed project and its likely impacts.



Signature of Applicant/Agent

October 13, 2025
Date

**MAIL COMPLETED FORM AND ATTACHMENTS TO:**
Virginia Department of Historic Resources
Attention: Project Review
2801 Kensington Avenue, Richmond, VA 23221
www.dhr.virginia.gov

## The following information must be attached to this form:

____ Completed DHR Archives search
____ USGS map with APE shown
____ Complete project description
____ Any required photographs and plans

____ No historic properties affected _____ No adverse effect
____ Additional information is needed in order to complete our review.
____ We have previously reviewed this project. A copy of our correspondence is attached.

Comments: _____
_____
_____
_____

Signature_____ Date _____

Phone number _____ DHR File # _____

*This Space For Department Of Historic Resources Use Only*

**MAIL COMPLETED FORM AND ATTACHMENTS TO:**

Virginia Department of Historic Resources
Attention: Project Review
2801 Kensington Avenue, Richmond, VA 23221
www.dhr.virginia.gov

# Cultural Resources Due Diligence Review
# Manassas Regional Airport
# Part 139 Certification and Terminal Redevelopment
# Programmatic Environmental Assessment
# (DHR File No. 2025-4507)
# City of Manassas, Prince William County, Virginia

Prepared for: Avion Solutions Group, LLC
Peter Byrne, Director
Apex, North Carolina
Phone: (631) 496-6075
Email: pbyrne@avionsg.com

Prepared by: Carol S. Weed (M.A., RPA #989090)
41 Ridge Road, K
Katonah, NY 10536
Phone: (646) 276-2460
Email: CSW13108@gmail.com

October 2025

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# 1. Program and Project Descriptions

The City of Manassas, Viriginia, and their franchisee (Avports) are proposing a suite of changes to the Manassas Regional Airport (HEF; the Airport) Airport Layout Plan (ALP) (**Appendix A - Figures 1, 2**). The changes to the ALP are in support of Federal Aviation Regulation (FAR) Part 139 Certification and commercial air service improvements including Airport Terminal Redevelopment. The environmental review is evaluating the potential impacts associated with 16 proposed projects (**Figure 3**) at the Airport in order to comply with Federal Aviation Administration (FAA) requirements.

Since the proposed project will involve funding or approvals from federal agencies, National Environmental Policy Act (NEPA) review is necessary. The FAA is the NEPA lead agency for the proposed suite of projects. As detailed in FAA Order 1050.1G 2025, while the federal regulations take precedence when a federal action is being reviewed, state and local cultural resource laws also must be considered. In Virginia, both the Virginia Antiquities Act (§ 10.1-2300 Code of Virginia) and the Virginia Environmental Impacts Report Act ((§ 10.1-2300 Code of Virginia) have applicability. For the PEA, the state authority is the Virginia Department of Historic Resources (DHR), Division of Review and Compliance.

The local authorities are Prince William County, Planning Office/Historical Commission and the City of Manassas City Council/Manassas Historic Resource Board (HRB). Both Prince William County and the City of Manassas are Certified Local Governments (CLGs) under Section 106 of the National Historic Preservation Act (NHPA). As such, they may comment on any federal undertaking within their jurisdiction. Per NHPA and NEPA, Nations/Tribes also were consulted. The Nations/Tribes that hold heritage interest in the area are the Catawba Indian Nation (Rock Hill, South Carolina), Chickahominy Indian Tribe (Providence Forge, VA), Delaware Nation (Anadarko, Oklahoma), and the Pamunkey Indian Tribe (King William, VA).

The DHR was notified of this Programmatic Environmental Assessment (PEA) by the FAA on August 13, 2025. The DHR has assigned the PEA **File Number 2025-4507** and provided comments on August 28, 2025. The FAA is responding separately to those comments.

The other federal, state, local, tribes and nations that were consulted were listed on August 13, 2025, Table 1. Of the entities that received the FAA's agency consultation materials, two others also have responded. These are the Prince William County Planning Office (September 22, 2025) and the Catawba Indian Nation (October 2, 2025). The initial FAA scoping package and the three responses are presented in **Appendix B – Agency Consultation**.

The PEA is being developed by Avion Solutions Group LLC (ASG), which is under contract with Avports. Ms. Carol S. Weed (M.A., RPA #989090), is ASG's Deputy Project Manager for the PEA. Ms. Weed also completed this Section 106 due diligence background and literature review, conducted on-site walkovers of most of the project areas, and prepared the response to the August 28, 2025, DHR comments.

## *Project Summary*

As noted in FAA's August 13, 2025 letter, **Attachment B**, a Programmatic EA (PEA) approach was implemented by the FAA. A programmatic environmental review involves a Tiered approach that allows the FAA to render a decision on those projects that have sufficient design completed (short term) while providing conditional approval on the long term projects that do not yet have sufficient design completed. In January 2024, the FAA directed the proponents (Airport and Avports) to prepare a Programmatic EA (PEA) for this program.

The 16 projects that are subject to this Programmatic review are divided into two tiers and these are defined as:

- Tier 1 projects have sufficient planning to support development and construction in a timeline of 5 years or less and will support FAR Part 139 certification and the initiation of commercial service. Construction of Tier 1 projects is projected to begin in 2026. PEA Projects 1 through 11 are in Tier 1.
- Tier 2 projects are projects with conceptual planning completed but with designs that are not yet finalized. For Tier 2 projects, assumptions are being made in the PEA so that potential impacts may be assessed and disclosed. PEA Project 12 through 16 are in Tier 2.

Photographs of the settings that will be occupied by the various projects were provided to DHR and the other consulted agencies on August 13, 2025, Appendix C and are not repeated here.

### *Agency Responses to Date*

To date, three entities have responded to the FAA's August consultation packages.

- DHR to FAA: August 28, 2025
- Prince William County to ASG (Jamie Morgan): September 22, 2025
- Catawba Indian Nation to Airport: October 2, 2025

The FAA is also providing a response to the DHR's August 28th scoping comments as a separate document uploaded to V-CRIS on October 28, 2025.

## 2. Due Diligence Methods

### *Direct and Indirect Impact Area Definitions*

The direct areas of potential effect (APE) for the 16 PEA projects are defined as the project outlines plus 100-feet around each of them to serve as a construction buffer. The project outlines are depicted on **Figure 3** but the buffers are not because of scale.

Often an indirect APE might be defined as a ½-mile or 1-mile search area around the direct impact APE. For the PEA, however, a 1-mile search area did not adequately consider the possible consequence of changes in noise, vibration resulting from noise, or visual effects that might result from the implementation of commercial air service. The indirect APE boundary, therefore, was drawn as a rectangle bracketing the full extent of the 2040 60 DNL contour (**Figure 4**) which the PEA identifies as five years post completion of the 16 PEA projects. By using the proposed contours, the horizontal extents of the current noise effects were more easily understood and mapped. The indirect APE rectangle measures 29,531 ft north-south and 11,719 ft east west covering a total of about 7945 acres. The direct APE is in the center of the indirect APE

### *Literature Review*

The focus of the literature review was on sources developed by the state, county, and city for cultural resources and on the site-specific reports for compliance work completed in the direct and indirect APEs. The major sources used during the research are listed in Table 1 below. The review of environmental conditions was conducted to determine the extent of grading, filling, and recontouring that might have occurred across the Airport and within the specific project loci. The functional areas are defined as 1) historic activity areas (e.g., an historic surface feature), 2) V-CRIS, county, or city inventoried sites and

properties; and 3) tribal traditional cultural properties.

| Table 1. Data Sources Used and Data Obtained | | |
|---|---|---|
| **Context Domains** | **Source Location(s)** | **Data** |
| Environmental Conditions | USDA SCS Web Soil Survey; Project-specific geotechnical, land use | 1) Custom WSS Report for the project area<br>2) PEA wetlands; stream data |
| Environmental Conditions | USGS/ESRI Historical Topographic Collection and USGS US Topo | 1) Nokesville, VA USGS 7.5 -minute Quadrangles |
| Environmental Conditions, Functional Areas | Prince William County; City of Manassas GIS Viewer | 1) Aerial Photographs |
| Functional Areas | V-CRIS; Prince William County; City of Manassas | 1) Building/Structure forms; Archaeological site forms (direct and indirect APE) |
| Functional Areas | Manassas Regional Airport | 2) Reports and due diligence assessments |

### *Walkover Dates and Conditions*

The walkovers were conducted by Ms. Weed and Ms. Jamie Morgan, ASG's consulting Biologist, in 2024 on January 10, 11 and March 14, and in 2025 on June 3 through 6. The weather was clear and all walkovers conducted in the Airport in-field were done with an Airport escort.

## 3. Due Diligence Results

The on-line research using VDHR's Virginia Cultural Resource System (V-CRIS) was conducted in January 2024 in anticipation of project area field visits in January and March 2024. The V-CRIS site file search was refreshed in 2025 on June 2. The site file searches found that archaeological sites, built resources, districts, and battlefields are present in the indirect Area of Potential Effect (APE; **Figure 5**). However, only archaeological sites and battlefields are in the direct APE (**Figures 6, 7**).

### *Prior Compliance Cultural Resource Assessments*

The V-CRIS file searches returned information on archaeological sites, built resources, districts, and battlefields are present in the direct and indirect APEs. Based on the V-CRIS records search, the earliest survey of the Airport area is Douglas C. McLearen's 1978 *Archaeological Reconnaissance of the Manassas Municipal Airport, Prince William County, Virginia* (DHR Report #PW-02). McLearen's survey resulted in the identification of five archaeological sites (DHR ID 44PW0011 through 44PW0015; **Figure 8**). These archaeological sites were marked by the presence of Nation/Tribal camp use locations assigned archaeologically in the pre-AD 1606 period. Site 44PR0012, however, had an 18th Century (AD 1700-1799) component as well.

While Douglas McLearen's 1978 survey was the first survey, subsequent surveys and site investigations were completed within the Airport boundaries by Smith (1978), Jones and McDaid (1992), Deitrick and McDaid (1994), John T. Mullen (2005), and Tery Harris (2009, 2017). The full citations are presented in *References Cited*.

The only 2025 PEA project setting not considered during these investigations is PEA Project #7, the proposed location of the new Snow Removal Equipment building. Aeriel photographs taken over the Airport in 1994, 2006, and 2008 indicate that Project #7's surface was graded and recontoured (**Figure 9**). The relocated soil now forms a mound in the proposed project location. Attachment C – Photographs to the FAA's cover letter dated August 13, shows the mound on Photographs 19 and 21.

The investigations conducted by McLearen, Mullen, Jones and McDaid, and Harris found archaeological sites in their survey areas. Smith completed the only testing performed on any of the sites and those were the ones identified by McLearen (1978). Sites 44PW0011 through 44PW0015 were identified during McLearen's May 1978 survey of phases II and III of the Airport's *Master Plan of Development of Manassas Municipal Airport* (McLearen 1978: Appendix II, Map 3). Site 44PW0012 is located within PEA Project #14 and Site 44PW0013 within PEA Projects #1 and #4. Sites 44PW0011, 44PW0014 and 44PW0015 are outside of any of the identified PEA project boundaries. DHR maps the area of the 1978 McLearen survey as shown on **Figure 10**.

**Figure 11** illustrates the Airport as depicted on the USGS 7.5-minute Nokesville quadrangles dated 1971, 1983, and 1994. The quadrangles illustrate not only the progression of Airport development between 1971 and 1994 but the impact of that development on the original topography. Between 1971 and 1983, construction progressed from west to east with the west side runway completed and the east side runway begun and finalized to its initial length. Between 1983 and 1998, the east side runway was lengthened by extending it southward across Broad Run. By 1994, all of the original 'high ground' that hosted McLearen's sites had been broken (shown as the dashed contour lines) and recontoured.

By 1994, the east side Airport t-hangars, maintenance building, and fixed base operator (FBO) buildings also had been constructed (see **Figure 11**). However, the current terminal was not constructed until 1995. An aerial photograph dated April 2, 1994, shows that the areas of the terminal and the terminal parking lot were graded. By January 1, 2002, the Terminal was constructed, and one quadrant of the parking lot was paved. Much of the airside between west Runway 16R/34L and east Runway 16L/34R; Taxiway B; taxilanes Delta and Echo, F, and G; and the East Ramp were graded and grassed.

The locations of McClearen's Sites 44PW0011 through 44PR0015 are illustrated on aerial photographs dated 1994, 2002, 2005, 2006, 2016, 2020, and 2025 (**Figures 12, 13**). The plotted locations are based on the latitude and longitude coordinates provided in DHR's V-CRIS. The plotted locations, when applied to aerial photographs, show that each of the site areas was affected by Airport facility construction that involved soil stripping, underground facility development, or both.

His conclusion resulted in the decision that additional archaeological investigations were warranted at Areas 1 (44PW0012), 2 (44PW0014), and 5 (44PW0015) and that less effort could be expended on Areas 3 (44PW0013) and 4 (44PW0011) (**Figure 14**). James Smith began those investigations in September 1978. The results of Smith's testing did not yield substantively different results than those recovered by McLearen. Additional diagnostic artifacts in the form of projectile points were found but they were in plowzone. No Indigenous features or intact historic ones were located though remnants of an historic foundation were

identified. No artifacts were recovered below the plowzone which, overall, was thin averaging less than a foot in thickness.

In 1995, McLearen returned to the Airport area and, in concert with Christopher P. Egghart and Mary Ellen Bushey, completed the *Phase I Archaeological Survey of a Proposed Runway Protection Zone Manassas Regional Airport, Prince William County, VA* (DHR Report # PW-103). The southern extent of the runway protection zone (RPZ) is south of Runway 16L/34R and Taxiway B ends and immediately south of the ALP boundary and Broad Run (see **Figure 6**). In this area, Broad Run forms a narrow floodplain, first, and second terrace backed by a wide third terrace bracketed by well-defined hills. McLearen's survey team found two isolated finds (marked as Finds 1 and 2 on their report's Figure 2) and five archaeological sites (DHR ID 44PW0866 through 44PW0870). All were Nation/Tribal camp use locations and no archaeologically defined temporal markers were found. Thus, V-CRIS lists them as Prehistoric/Unknown (15000BC – 1606 A.D.)

An archaeological survey reported in 2001 by Clifton A. Huston, Matthew Laird, and Justin R. Atkins (*Phase I Archaeological Survey of the Proposed Manassas Municipal Airport Connector Road, Prince William County*) (DHR Report # PW-165) covered a narrow corridor running northeast to southeast across Cannon Branch and also Harry J. Parrish Blvd. The survey of the narrow corridor did not result in the identification of any archaeological sites.

In 2005, Mullen completed a Phase I archaeological survey of the location depicted in orange on **Figure 15**. The work was done for Glen Gery Corporation, and it covered approximately 120 acres of the Glen Gery Brick property. Mullen (2005:3) characterized the location now proposed as the site of the PEA Project #5 - Economy Parking Lot as "…within the floodplain of Cannon Branch; the exception being a small terrace on the southwest side of Cannon Branch." The excavations yielded two flakes (1 hornfels, 1 quartz) but both were recovered from the upper horizon and considered isolated finds.

In 2009, Tery Harris reported a *Phase I Archaeological Survey for the Proposed Extension of Runway 16L/34R and Taxiway B, Manassas Regional Airport, City of Manassas, Prince William County* (DHR Report # PW-323). The survey considered the runway, Taxiway B and also Taxiway K which connects Runway 16L/34R to Runway 34L/16R. The areas under consideration by PEA Project #6, the runway and taxiway bridge replacements were subject to Harris' survey. Though Harris reported the recovery of a very small collection of historic and Nation/Tribal objects she treated them as isolated finds.

Finally, in 2016, RS&H, Inc. submitted a scoping request to the Prince William County Planning Department informing them of future commercial development at Manassas Regional Airport, which subsequently was not constructed. On December 9, 2016, Daniel J McGettigan (Long Range Planning Manager, PWC Planning Department) responded to David Alberts (RS&H). McGettigan said "Some land in the East Parcel Development Area has been subject to archaeological survey. Consultation with the County Archaeologist on the scope of the archaeological survey is requested."

Based on consultation efforts, archaeological survey was completed by Tery Harris in November 2016, and a subsequent metal detector survey was done in February 2017. She reported the results in the April 2017 report entitled *Phase I Archaeological Study for the Proposed West Corporate Development and East Parcel Development at Manassas Regional Airport, City of Manassas, Prince William County, Virginia.* Included in the report was reference to both the McLearen (1978) and the Mullen (2005) surveys. Her team conducted a metal detector survey which identified the presence of objects over the expanse of the East Parcel. As shown in **Figure 15**, the metal objects concentrated in the vicinity of the knoll that had been tested by Mullen.

Harris concluded “No archaeological resources were identified, and no further work is recommended” (Harris 2017:49). The FAA submitted Harris’ report to DHR on May 5, 2017, and stated “the FAA has determined that the Proposed Undertaking would not adversely affect any known properties that Section 106 of the NHPA protects. The FAA respectfully requests your concurrence with this determination per 36 CRF 800(d)(1).” By letter dated June 2, 2017, DHR stated that “It is our opinion that the fieldwork and report are consistent with applicable standards and guidelines…Based on the information provided, we find that the impact to archaeological properties are unlikely and no further archaeological survey is warranted in support of this project.”

### *Archaeological Sites*

In total, 28 archaeological sites are within the direct and indirect APEs. Of this number, four of the sites are within PEA Project areas. **Table 2** provides a summary of the cultural resources surveys and the sites identified both within the Direct APE and the indirect APE. The sites are also summarized in **Table 3**.

| Table 2. Prior Cultural Resource Assessments in the Direct and Indirect APEs | | | | |
|---|---|---|---|---|
| **PEA Project #** | **Location** | **Author, Date** | **DHR Site** | **Notes** |
| 1 | Terminal and Terminal Parking Lot | McLearen 1978<br>Smith 1978 | 44PW0013 (Area 3) | Larger survey area contains 44PW0013 |
| 2 | West of West Ramp Tie-down | Deitrick and McDaid 1994 | | Larger survey area contains 44PW0729 |
| 2 | West Corporate Development | Harris 2017 | | |
| 3 | East Ramp | McLearen 1978 | | |
| 4 | Terminal Parking Lot | McLearen 1978 | 44PW0013 (Area 3) | |
| 5 | Economy Parking Lot | Mullen 2005<br>Harris 2017 | | Isolated finds and Metal detector survey with spot finds |
| 6 | Intersection of Broad Run and Cannon Branch | Jones and McDaid 1992 | | Larger survey area contains<br>44PW0600<br>44PW0601<br>44PW0602<br>44PW0603<br>44PW0604 |
| 6 | North and south of the bridges | Harris 2009 | | |
| 7 | New SRE Building | No survey | | |
| 8 | Taxiway B – Widening; north end | McLearen 1978<br>Smith 1978 | | Larger survey area contains 44PW0011 |
| 8 | Taxiway B – Rehabilitate and Widen Taxiway Bravo with Lighting System Upgrade | Allabaugh 2021 | | |
| 9 | Runway 16L/34R Reconstruction and Strengthening | Harris 2009 | | |
| 9 | Runway 16L/34R Runway Safety Area Drainage Improvements | Allabaugh 2019 | | |
| 10 | Taxiway Echo Fillet Widening | McLearen 1978 | | |
| 11 | Taxiway B Reconstruction and Strengthening south of the Bridge | Harris | | |
| 12 | East Ramp Taxiway | McLearen 1978 | | |
| 13 | Runway 16L/34R Widening | McLearen 1978<br>Harris 2009 | | |
| 14 | Aircraft Deicing Pad and Apron Expansion between Taxiways Delta and Echo | McLearen 1978<br>Smith 1978 | 44PW0012 (Area 1) | |

| | | | | |
|---|---|---|---|---|
| 15 | Expanded East Ramp and Taxilane between Taxiways Delta & Echo | McLearen 1978 | | Larger survey area contains 44PW0012 |
| 16 | New ARFF Facility | McLearen 1978 | | Larger survey area contains 44PW0012 |
| **Outside PEA Project Areas** | | | | |
| Within ALP | Runway 16L/34R Runway Safety Area Drainage Improvements | Allabaugh 2019 | | |
| Within ALP | T-hangar area | McLearen 1978<br>Smith 1978 | 44PW0014 (Area 2) | |
| Within ALP | East of Taxiway Bravo and north of Broad Run | McLearen 1978<br>Smith 1978 | 44PW0015<br>(Area 5) | |
| Within ALP | Taxiway L | Harris 2009 | | |
| Within ALP | Runway 16R/34L and Parallel Taxiway Rehabilitation and Lighting System /PAPI Upgrade | Allabaugh 2019 | | |
| Outside ALP | Between Piper Lane and Observation Road | Klein et al. 2018 | | |
| Outside ALP | Immediately west of ALP, proposed VRE parking lot | Higgins and Hanbury 2013 | | |
| Outside ALP | RPZ – south | McLearen et al. 1995 | | 44PW0866<br>44PW0867<br>44PW0868<br>44PW0867<br>44PW0870 |
| Outside ALP | East of Project #5 | McLearen and Egghart 1997 | | Isolated Find #1 |
| Outside ALP | Harry J. Blvd to eventual Terminal Parking Lot | CRI 2001 | | No finds |
| Outside ALP | South of Broad Run; Airport Business Park | Laird and Fesler 2005 | | 44PW1643<br>44PW1644 |
| Outside ALP | Transmission Line, hills east of airport | Dutton et al. 2012 | | |
| Outside ALP | Immediately east of Route 234 and east of Cannon Branch | Mullen et al. 2012 | | |
| In and out of ALP | North end of ALP | McCoy et al. 2016 | | Evaluated as a high probability area |

*Buildings, Structures, Districts, and Battlefields*

No buildings/structure surveys have been completed within the Airport's boundary according to the V-CRIS survey plots and property listings. However, 51 historic-era buildings, structures, cemeteries, districts, and battlefield areas are present in the direct and indirect APEs (**Table 3).**

The direct APE is overlain by two NRHP-eligible battlefields (DHR 076-0024 and DHR 076-5036). The eligible and listed battlefields are greater in horizontal extent than any of the PEA projects and all of the PEA projects underlay some part of a battlefield (see **Figure 7**). Within the indirect APE, locations associated with the Bristoe Station Battlefield, the Brentsville Historic District, and the Proposed Village of Bristoe Historic District, are included as individual properties not associated with the battlefield or the two districts. The listed or eligible buildings and structures in the indirect APE include the Moor Green House (DHR 076-0014); the Bloom Hill Farm (DHR 076-0149); and the Thomasson Barn (DHR 076-0285).

## 4. Conclusions and Recommendations

Based on the results of the due diligence research, the project direct APEs retain no archaeological sensitivity. The early survey by McLearen (1978) found archaeological sites in the expected locations on high ground within proximity to potable water sources. The potable water sources are Broad Run, Cannon Branch and unnamed intermittent and secondary streams both within the direct and in the indirect study area.

The development sequence of the Airport resulted in buildings and structures to the east and west of the central runway and taxiway complex. The construction of the runways, taxiways, taxilanes, and ramps necessitated grading and recontouring. Based on the aerial photographs and the broken contours on the USGS quadrangles, there are no indications that any of the PEA project locations still retain their original A-horizon which had been agricultural fields or woods before Airport construction. Based on the results of the documentary review, no further cultural resources investigations are recommended for the 16 PEA Project areas described herein.

## 5. Federal Effects Determination

In accordance with 36 CFR Part 800.4(d)(1), no historic properties will be affected by the proposed undertaking. Also, in accordance with Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. § 303), the FAA intends to make a *de minimis* impact determination based on a Section 106 determination of no historic properties affected.

## 6. References Cited

**Books, Correspondence, Forms and Reports**

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Stafford, Susan. 2017 (May). Letter: S. Stafford to Roger Kirchen, Director, Division of Review and Compliance, VDHR re: A Request for Review and Concurrence Regarding the Area of Potential Effect and Other Section 106 Determinations for the West Corporate Development and East Parcel Development at Manassas Regional Airport.

**Internet Links**

City of Manassas Historic Resources Board
https://www.manassasva.gov/things_to_do/manassas_museum/manassas_historic_resources_board.php

**Table 3. Previously Recorded Resources within the Direct and Indirect APEs**

| APE (Direct, Indirect) | PEA Project # | Class | Site Type | DHR_ID | SiteName | Cultural Associations | NRE Eligibility Status (VDHR) |
|---|---|---|---|---|---|---|---|
| Direct | | Archaeology | Camp | 44PW0011 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Direct | 14 | Archaeology | Other | 44PW0012 | null | Late Archaic (3000 - 1201 B.C.), Woodland (1200 B.C. - 1606 A.D.), 18th Century (1700 - 1799) | null |
| Direct | 1, 4 | Archaeology | Camp | 44PW0013 | null | Middle Archaic (6500 - 3001 B.C.) | null |
| Direct | All | Battle (area) | Battle (area) | 076-0024 | Bristow Road, Milford Road, Route 28, Route 619, Route 660 | Bristoe Station Battlefield (Historic/Current) | VLR Listing Removed |
| Direct | All | Battle (areas) | Battle (areas) | 076-5036 | Centreville Road - Alt Route 28; John Marshall Highway - Alt Route 55; Linton Hall Road - Alt Route 619; Sudley Road - Alt Route 234; | Bristoe Station Battlefield (Historic), Bull Run Bridge (Historic), Kettle Run Battlefield (Historic), Manassas Station Operations Battlefield (Historic), Union Mills (Historic) | DHR Staff: Potentially Eligible |
| Indirect | | Archaeology | Mill | 076-0314 | Milford Mill Site (Historic) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Archaeology | Camp | 44PW0014 | null | Late Archaic (3000 - 1201 B.C.) | null |
| Indirect | | Archaeology | Camp | 44PW0015 | null | Late Archaic (3000 - 1201 B.C.), Early Woodland (1200 B.C. - 299 A.D.) | null |
| Indirect | | Archaeology | Camp | 44PW0016 | Kettle Run | Archaic (8500 - 1201 B.C.), Woodland (1200 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | Earthworks | 44PW0227 | The Wakeman Site Cannon Branch Fort | 19th Century: 3rd quarter (1850 - 1874) | NRHP Listing, VLR Listing |
| Indirect | | Archaeology | Well | 44PW0486 | null | 20th Century (1900 - 1999) | null |
| Indirect | | Archaeology | Bloom Hill Farm (Farmstead, Ice house) | 44PW0487 | null | 19th Century (1800 - 1899), 20th Century (1900 - 1999) | null |
| Indirect | | Archaeology | Other | 44PW0600 | null | Late Archaic (3000 - 1201 B.C.), 18th Century: 2nd half (1750 - 1799) | DHR Staff: Potentially Eligible |
| Indirect | | Archaeology | Camp, temporary | 44PW0601 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | Camp, temporary | 44PW0602 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | Camp, temporary | 44PW0603 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | Camp, temporary | 44PW0604 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | 2 | Archaeology | Camp | 44PW0729 | null | Middle Archaic (6500 - 3001 B.C.), Woodland (1200 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | null | 44PW0866 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | null | 44PW0867 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | null | 44PW0868 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | null | 44PW0869 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | null | 44PW0870 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Archaeology | Dwelling, single, Outbuilding | 44PW1339 | Lucaville 4 | 20th Century (1900 - 1999) | null |
| Indirect | | Archaeology | Trash scatter | 44PW1340 | Lucaville 5 | 19th Century (1800 - 1899) | null |

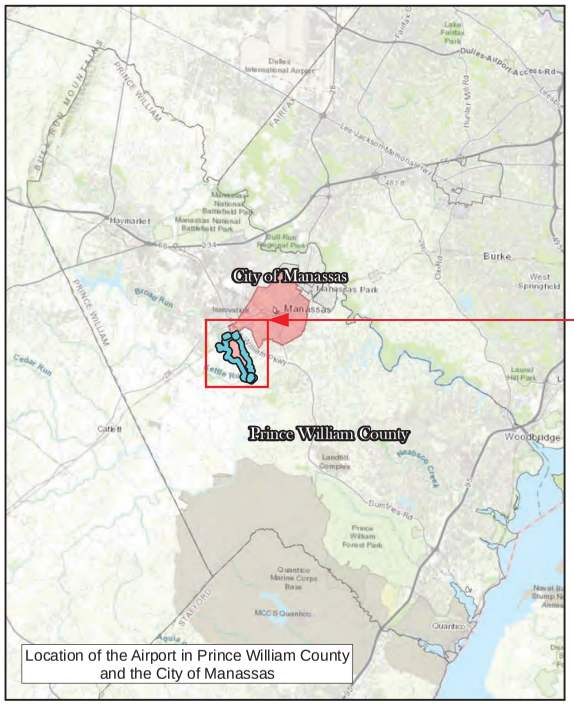
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Indirect | | Archaeology | Dwelling, single | 44PW1393 | null | 19th Century (1800 - 1899), 20th Century (1900 - 1999) | null |
| Indirect | | Archaeology | Camp, temporary | 44PW1643 | null | Early Woodland (1200 B.C. - 299 A.D.) | null |
| Indirect | | Archaeology | Farmstead | 44PW1644 | null | 20th Century: 2nd quarter (1925 - 1949), 20th Century: 2nd half (1950 - 1999) | null |
| Indirect | | Archaeology | Dwelling, single | 44PW1889 | null | Pre-Contact, Contact Period (1607 - 1750), Colony to Nation (1751 - 1789), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916) | null |
| Indirect | | Archaeology | Camp, temporary | 44PW1925 | null | Prehistoric/Unknown (15000 B.C. - 1606 A.D.) | null |
| Indirect | | Battlefield, District | Single Dwelling | 076-0603 | House, 10813 Bristow Road (Rt 619) (Function/Location) | Bristoe Station Battlefield and the Proposed Village of Bristoe Historic District | null |
| Indirect | | Battlefield, District | Single Dwelling | 076-0604 | House, 10823 Bristow Road (Rt 619) (Function/Location) | Bristoe Station Battlefield and the Proposed Village of Bristoe Historic District | null |
| Indirect | | Battlefield, District | Single Dwelling | 076-0605 | House, 10825 Bristow Road (Rt 619) (Function/Location) | Bristoe Station Battlefield and the Proposed Village of Bristoe Historic District | null |
| Indirect | | Battlefield, District | Single Dwelling | 076-0606 | House, 10804 Bristow Road (Rt 619) (Function/Location) | Bristoe Station Battlefield and the Proposed Village of Bristoe Historic District | null |
| Indirect | | Battlefield, District | Single Dwelling | 076-5392 | House, 10808 Bristow Rd (Rt 619) (Function/Location) | Bristoe Station Battlefield and the Proposed Village of Bristoe Historic District | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0245 | Davis-Beard House, 10726 Bristow Rd (Historic/Location), Glee Hall (Historic), White Elephant Antiques & Bristow Book Nook (Current) | Bristoe Station Battlefield | NRHP Listing, VLR Listing |
| Indirect | | Battlefield, element | Single Dwelling | 076-0584 | House, 10815 Milford Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0596 | House, 10722 Bristow Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Commercial Building | 076-0597 | Rollins Store (Historic/Current), Store, 10720 Bristow Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0598 | House, 10708 Bristow Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0599 | House, 10710 Bristow Road (Function/Location), Layton House (Historic) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0600 | House, 10717 Bristow Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0601 | House, 10721 Milford Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Commercial Building | 076-0602 | Store, 10805 Bristow Road (Rt 619) (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-0607 | House and Farm, 10604 Bristow Road (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Single Dwelling | 076-5393 | House, 10829 Bristow Rd (Rt 619) (Function/Location) | Bristoe Station Battlefield | null |

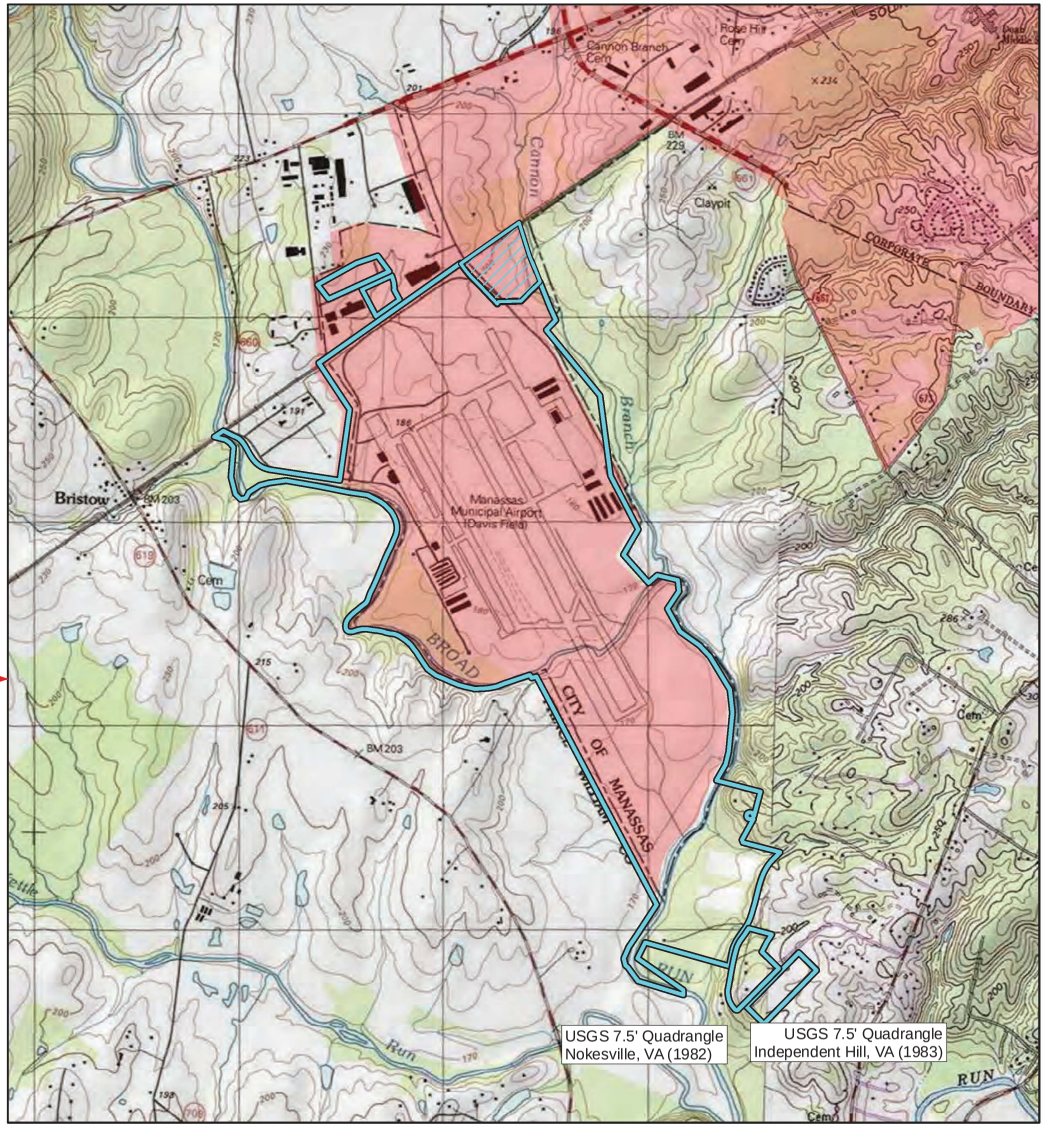
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Indirect | | Battlefield, element | Single Dwelling | 076-5394 | House, 10905 Bristow Rd (Rt 619) (Function/Location) | Bristoe Station Battlefield | null |
| Indirect | | Battlefield, element | Rail-Related | 076-5399 | Orange and Alexandria Railway section (Descriptive), Train Tracks, South of the Route 28 and 234 Intersection (Function/Location) | Bristoe Station Battlefield | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Battlefield, element | Fortification/Military Base | 155-5020 | Cannon Branch Fort (Current Name), Cannon Branch Fort (NRHP Listing), The Wakeman Site (Historic) | null | NRHP Listing, VLR Listing |
| Indirect | | Building | Single Dwelling | 076-0014 | Moor Green (Historic/Current), Moor House (Historic) | null | NRHP Listing, VLR Listing |
| Indirect | | Building | Single Dwelling | 076-0148 | Boardman (Historic), Fostern (Historic) | null | null |
| Indirect | | Building | Single Dwelling | 076-0149 | Bloom Hill Farm (Historic/Current) | null | Eligible (DHR Staff: Eligible) |
| Indirect | | Building | Barn,Dairy | 076-0285 | Thomasson Barn (Historic/Current), W.J. Thomasson House and Barn (Historic) | null | Eligible (DHR Board Det. Eligible) |
| Indirect | | Building | Single Dwelling | 076-0608 | House & Farm, 10806-10810 Bristow Road (Rt 619) (Function/Location), Rollins Tract, Bristoe Station Battlefield (Descriptive) | null | Not Eligible (DHR Evaluation Committee: Not Eligible) |
| Indirect | | Building | Single Dwelling | 076-0609 | House, 10106 Piper Lane, Route 660 (Current) | null | null |
| Indirect | | Building | Single Dwelling | 076-0610 | House, 10104 Piper Lane, Route 660 (Current) | null | null |
| Indirect | | Building | Single Dwelling | 076-0611 | House, 10204 Piper Lane, Route 660 (Current) | null | null |
| Indirect | | Building | Single Dwelling | 076-5019 | House, Nokesville Road (Descriptive) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Building | Single Dwelling | 076-5043 | House, 9550 Godwin Drive (Function/Location), Land Bay 25 (Descriptive), Prince William LLC House (Descriptive) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Building | Single Dwelling | 076-5146 | Farm Site, 11009 Bristow Rd (Rt 619) (Function/Location), M. Thomas House (Current) | null | null |
| Indirect | | Building | Single Dwelling | 076-5147 | House, 10833 Bristow Road (Rt 619) (Function/Location) | null | null |
| Indirect | | Building | School | 076-5175 | Lucasville School (Historic/Current) | null | null |
| Indirect | | Building | Single Dwelling | 076-5288 | de Gastyne House (Current) | null | null |
| Indirect | | Building | Single Dwelling | 076-5395 | Blue Grass Acres Farm, 11105 Bristow Rd (Rt 619) (Function/Location) | null | null |
| Indirect | | Building | Single Dwelling | 076-5397 | Commercial Building, 10236 Residency Road (Function/Location), Hersch House (Historic) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Building | Shed | 076-5398 | Outbuilding, 9850 Chevalle Road (Function/Location) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Building | Commercial Building | 076-5871 | Commercial Building, 11013 Nokesville Rd (Function/Location) | null | null |
| Indirect | | Building | Commercial Building | 076-5872 | Commercial Building, 11017 Nokesville Rd. (Function/Location) | null | null |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Indirect | | Building | Office/Office Building | 155-5035 | Glen-Gery Masonry Supply Center (Current Name), Industrial Complex, 9905 Godwin Drive (Function/Location), Marion Brick Corporation (Historic) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Cemetery | Cemetery | 076-0294 | Carr Family Cemetery (Historic), Ruins and Graveyard, Route 619 (Descriptive) | Bristoe Station Battlefield | null |
| Indirect | | Cemetery | Cemetery | 076-5073 | Roberston Cemetery, Bristow Rd (Rt 619) (Historic/Current) | Bristoe Station Battlefield Historic District and the Proposed Village of Bristoe Historic District | null |
| Indirect | | Cemetery | Cemetery | 155-5025 | Cannon Branch Cemetery (Current), Cemetery, 9756 Godwin Drive (Function/Location) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | District | Courthouse | 076-0021 | 4th Prince William County Courthouse (Historic), Brentsville Courthouse and Jail (NRHP Listing), Brentsville Courthouse Complex (Descriptive), Prince William County Courthouse, Brentsville (Historic) | Brentsville Historic District | NRHP Listing, VLR Listing |
| Indirect | | District | Single Dwelling | 076-0273 | House, 12214 Bristow Road (Function/Location), Nelson House (Historic), Woodyard House (Historic) | Brentsville Historic District | null |
| Indirect | | District | School | 076-0278 | Brentsville Schoolhouse (Historic/Current), Schoolhouse, 12235 Bristow Road (Function/Location) | Brenstville Historic District | null |
| Indirect | | District | Church/Chapel | 076-0295 | Brentsville Pentecostal Church (Current), Brentsville Union Church (Historic), Church, 12231 Bristow Road (Function/Location) | Brenstville Historic District | null |
| Indirect | | Structure | Complex | 076-5889 | VDOT, 10228 Residency Road (Function/Location) | null | Not Eligible (DHR Staff: Not Eligible) |
| Indirect | | Structure | Rail-Related | 076-5892 | Bridge, Piper Lane (Function/Location) | null | Not Eligible (DHR Staff: Not Eligible) |

# Appendix A - Figures




LEGEND

- Airport Property
- Amazon Data Center Parcel
- City of Manassas

0 500 1,000 Meters

0 2,000 4,000 Feet

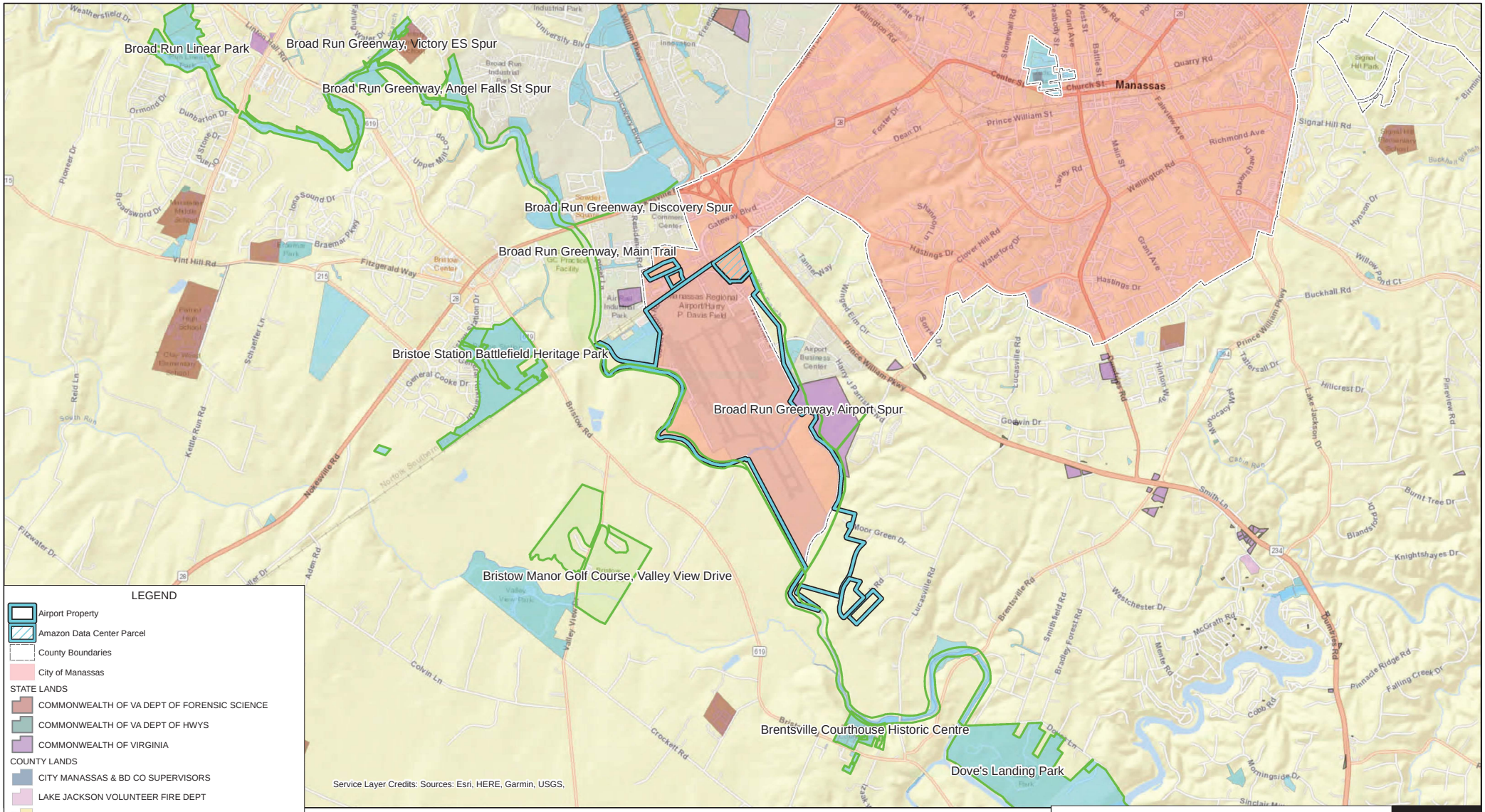
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Figure 1

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Location of the Airport**

*Project 23-98001.002, Version: 10/22/2025 @ 11:53:28 AM*



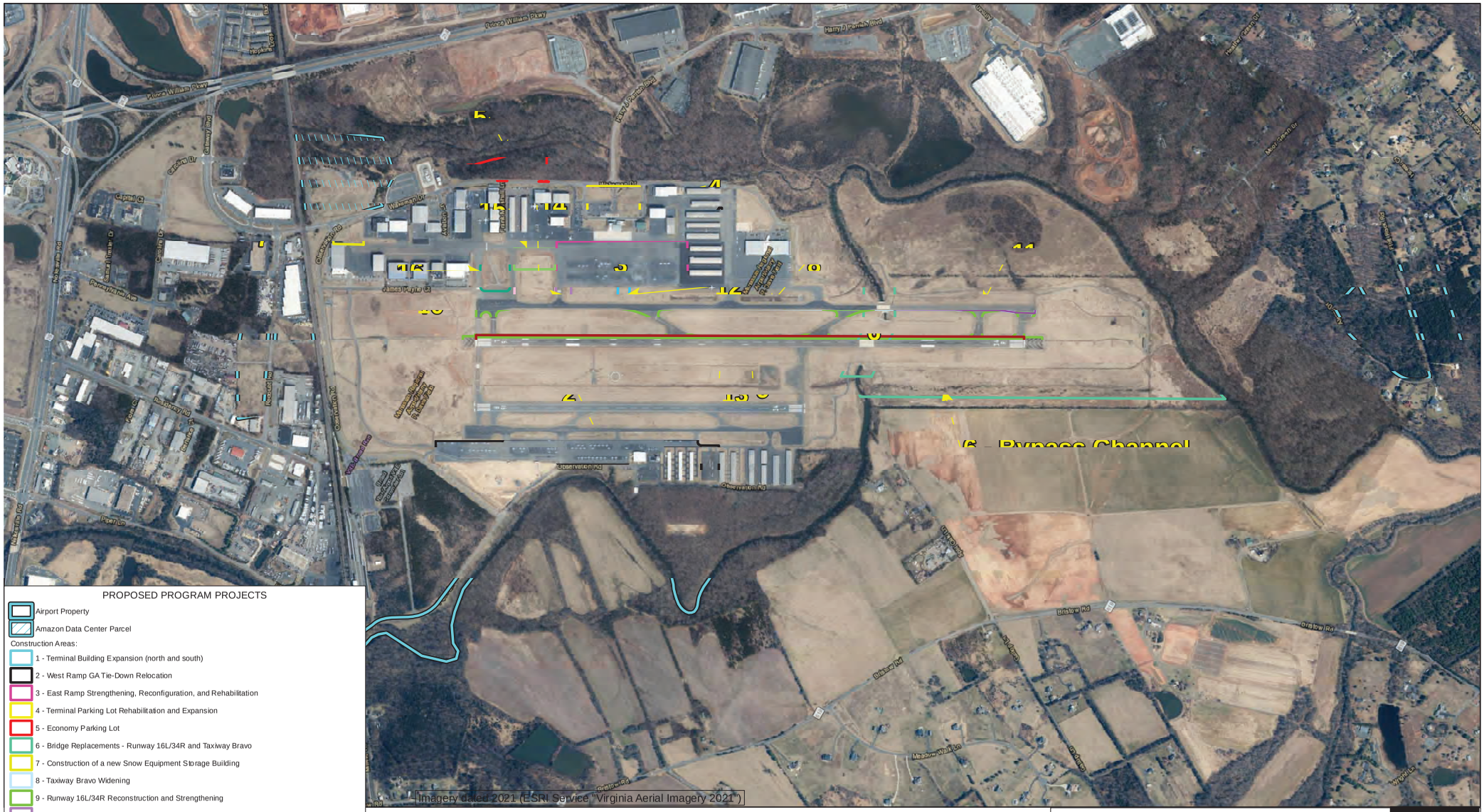

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Figure 2

**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

**State, County, and Local Jurisdictions**

*Project 23-98001.002, Version: 10/22/2025 @ 11:56:21 AM*

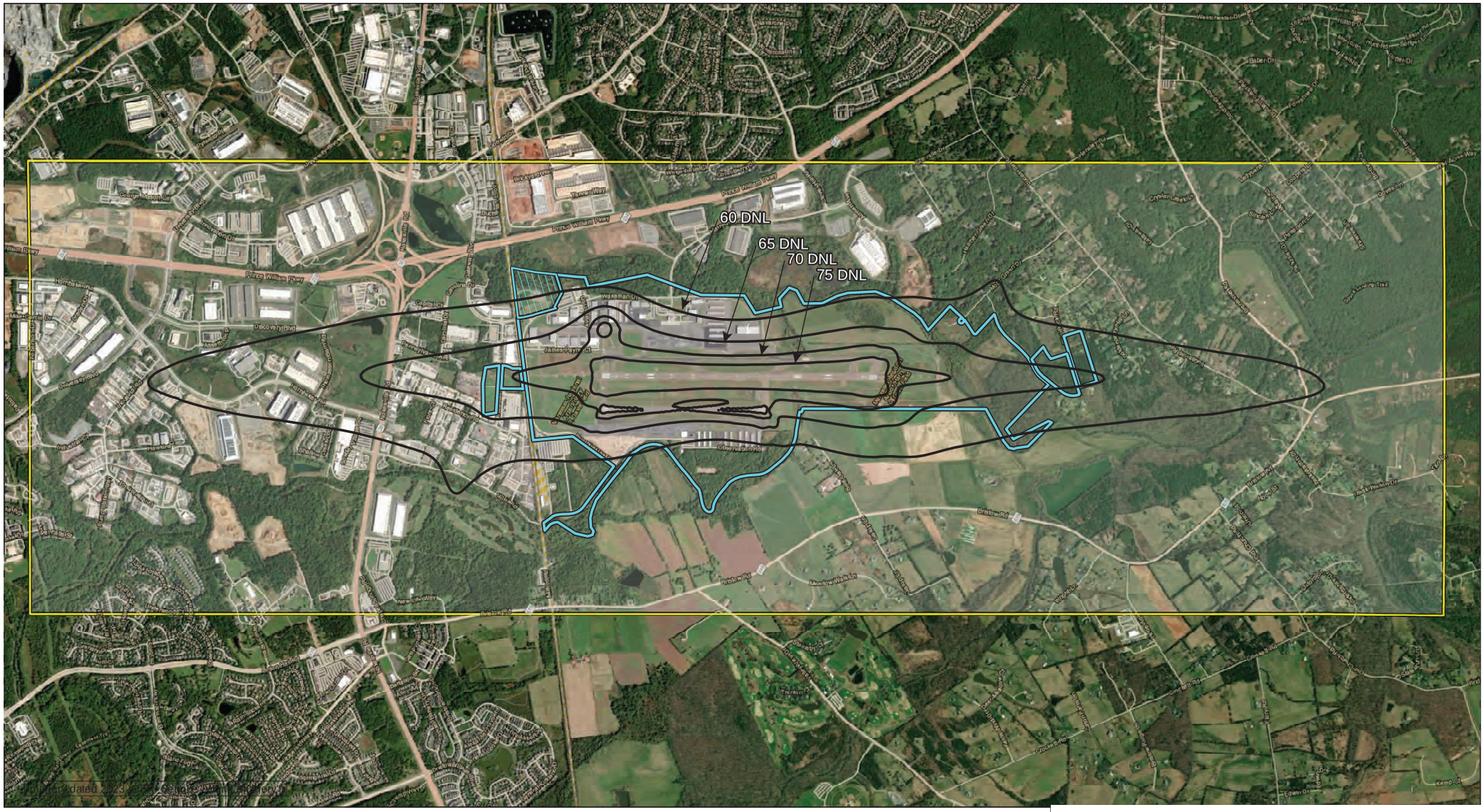



# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## PEA Projects

Figure 3

*Project 23-98001.002, Version: 10/22/2025 @ 11:58:13 AM*




LEGEND

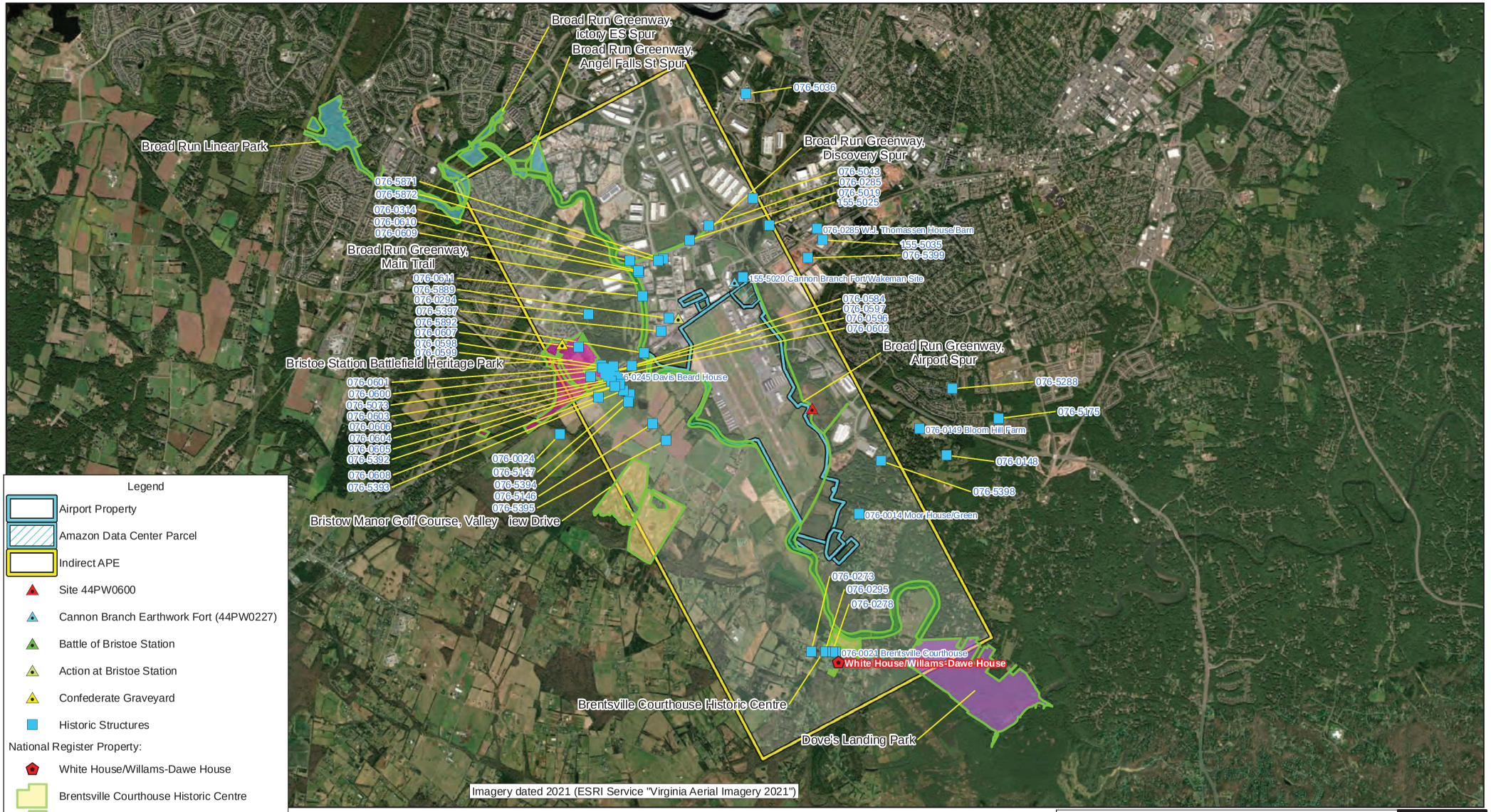
- Airport Property
- Amazon Data Center Parcel
- Indirect APE
- Noise Contour (DNL) - Preferred Action, 2040

0 500 1,000 Meters

0 1,000 2,000 Feet

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*Project 23-98001.002, Version: 10/22/2025 @ 12:01:10 PM*




Legend

- Airport Property
- Amazon Data Center Parcel
- Indirect APE
- Site 44PW0600
- Cannon Branch Earthwork Fort (44PW0227)
- Battle of Bristoe Station
- Action at Bristoe Station
- Confederate Graveyard
- Historic Structures

National Register Property:

- White House/Willams-Dawe House
- Brentsville Courthouse Historic Centre
- Bristoe Station Battlefield Heritage Park
- Bristow Manor Golf Course, Valley View Drive
- Broad Run Greenway
- Broad Run Linear Park
- Dove's Landing Park

0 1,000 2,000 Meters

0 3,000 6,000 Feet

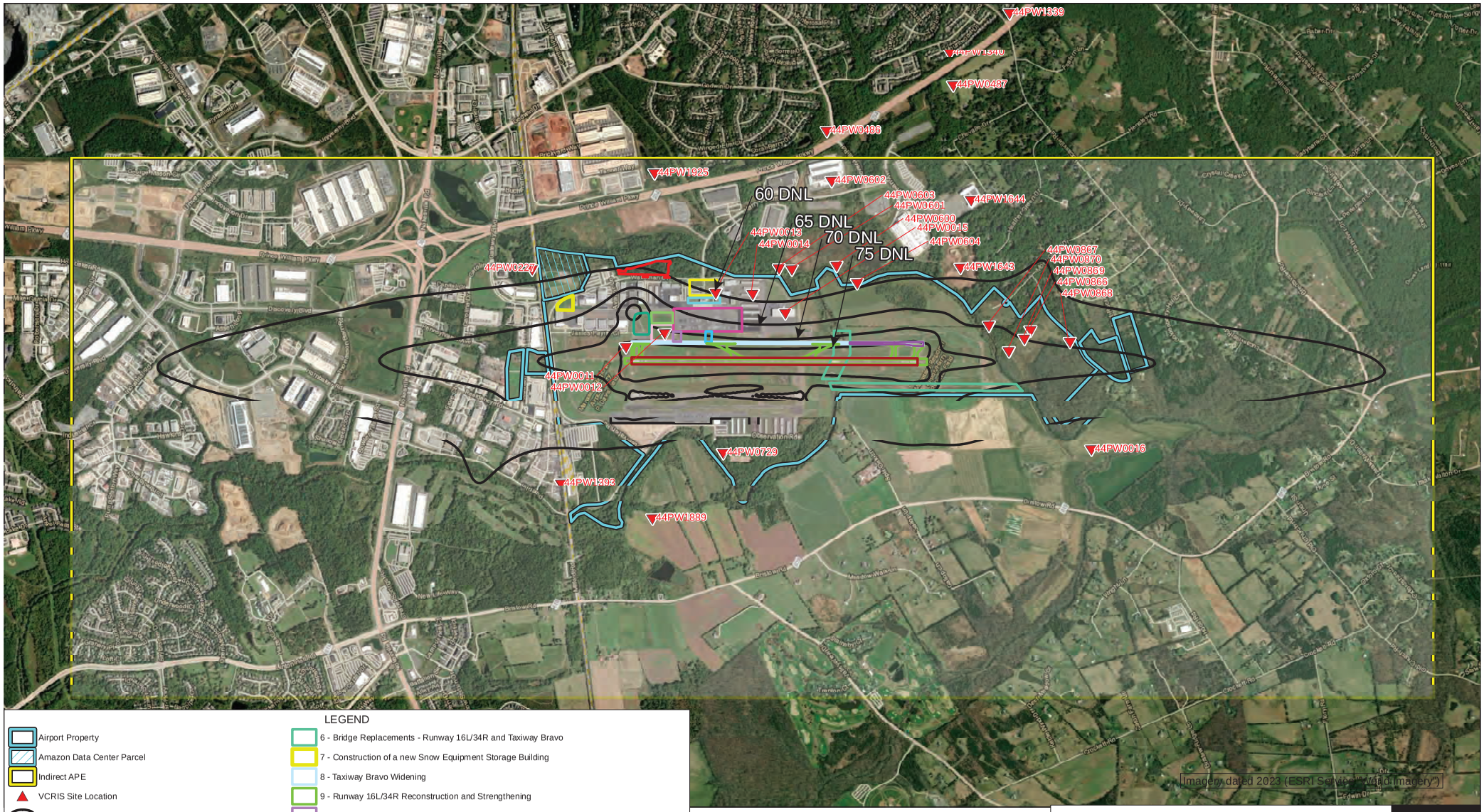
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Figure 5

# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## Section 4(f) Resource Locations (3.1.5-3)

Project 23-98001.002, Version: 10/22/2025 @ 12:02:39 PM




LEGEND

- Airport Property
- Amazon Data Center Parcel
- Indirect APE
- VCRIS Site Location
- Noise Contour (DNL) - Preferred Action, 2041

Construction Areas:

1. Terminal Building Expansion (north and south)
2. West Ramp GA Tie-Down Relocation
3. East Ramp Strengthening, Reconfiguration, and Rehabilitation
4. Terminal Parking Lot Rehabilitation and Expansion
5. Economy Parking Lot
6. Bridge Replacements - Runway 16L/34R and Taxiway Bravo
7. Construction of a new Snow Equipment Storage Building
8. Taxiway Bravo Widening
9. Runway 16L/34R Reconstruction and Strengthening
10. Taxiway Echo Fillet Widening
11. Taxiway B Reconstruction and Strengthening (South of the Bridge)
12. Construction of a new East Ramp Taxiway
13. Runway 16L/34R Widening
14. Aircraft Deicing Pad (between Taxiway D and E)
15. Construction of new Expanded East Ramp and Taxilane between Taxiways Delta and Echo
16. Construction of a new ARFF Facility

0 250 500 Meters

0 1,000 2,000 Feet

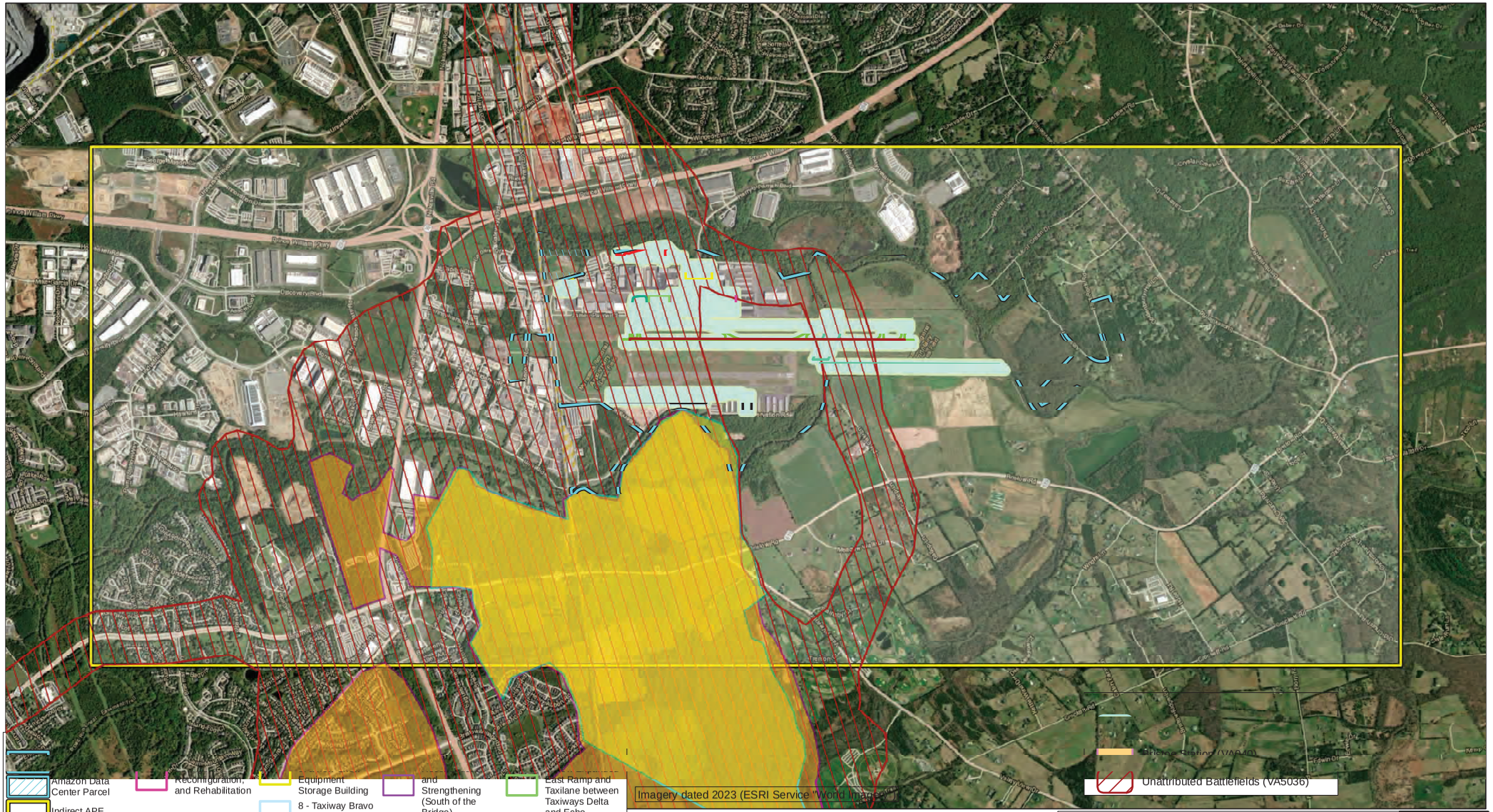
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Figure 6

# Manassas Regional Airport PART 139 Certification and Terminal Redevelopment

## VCRIS Site Locations and Proposed Action Alternative (2041) 60-75 DNL Contours

*Project 23-98001.002, Version: 10/22/2025 @ 12:12:46 PM*




# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## HEF-EA Direct and Indirect APEs with Projects and Battlefields

Figure 7

Project 23-98001.002, Version: 10/22/2025 @ 12:14:37 PM

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

**Legend**

- Archaeological Resources
- Archaeology Labels
- DHR Easements
- County Boundaries




N

Feet

0 200 400 600 800

1:9,028 / 1"=752 Feet

**Title: McLearen 1978 (11,12,13, 14,15** **Date: 9/18/2025**

*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.*

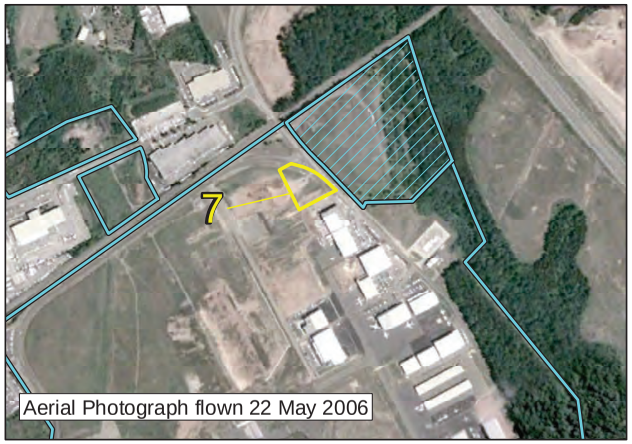
AVION SOLUTIONS GROUP LLC

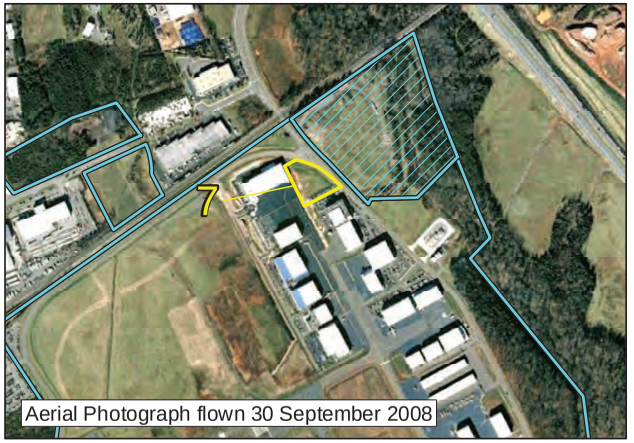
**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**DHR V-CRIS Plotting of McLearen 1978 Sites 44PW11, PW12, PW13, PW14, and PW15**

Figure 8




Legend

- Airport Property
- Amazon Data Center Parcel

Construction Area:

- 7 - Construction of a new Snow Equipment Storage Building

0 100 200 Meters

0 500 1,000 Feet

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**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

Figure 9

**PEA Project #7 SRE Building Location Overlaid Overlaid on 1994, 2006, and 2008 Historical Aerial Photographs**

*Project 23-98001.002, Version: 10/22/2025 @ 12:17:30 PM*

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

**Legend**

- Archaeological Resources
- Archaeology Phase 1 Survey
- DHR Easements
- Streams (NHD)
- County Boundaries



N

Feet

0 500 1000 1500 2000

1:18,056 / 1"=1,505 Feet

**Title: McLearen 1978 coverage area** **Date: 10/29/2024**

*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.*

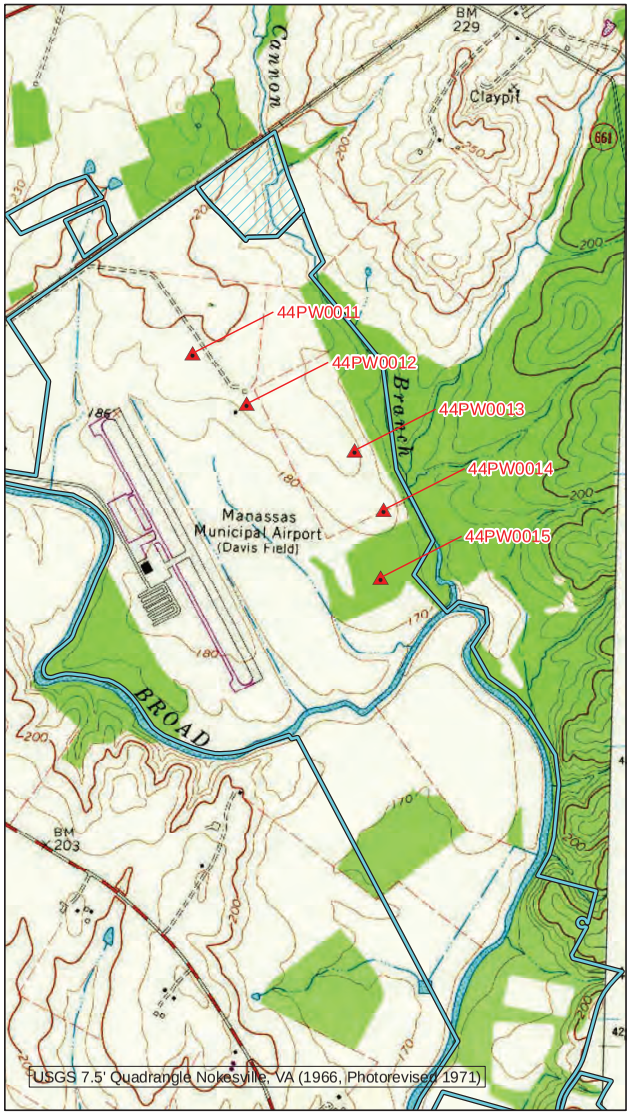
*Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.*

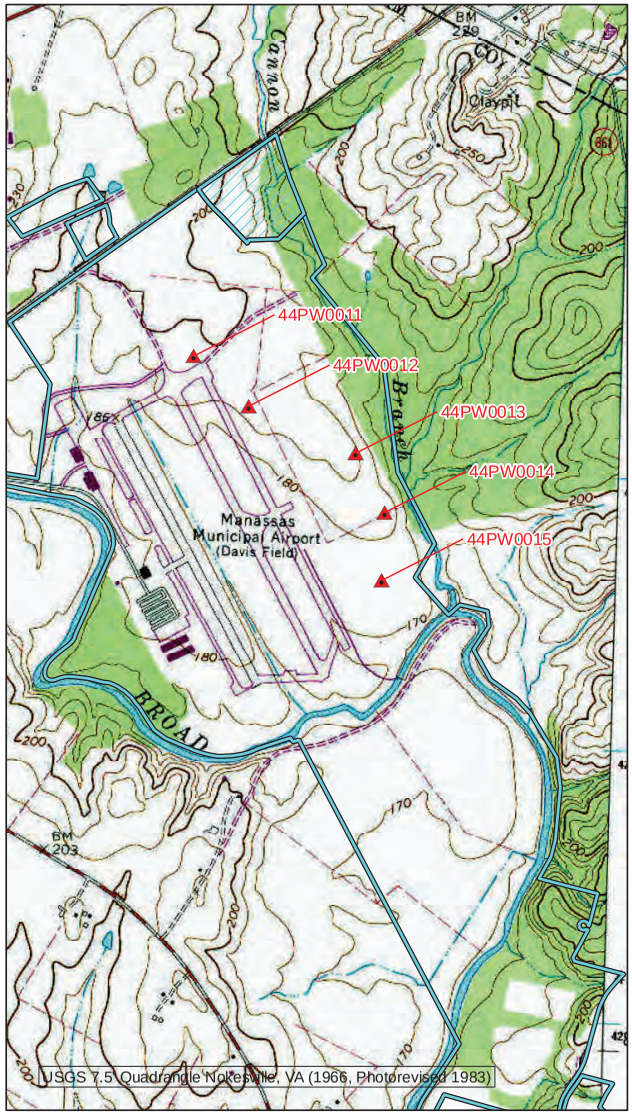
AVION SOLUTIONS GROUP LLC

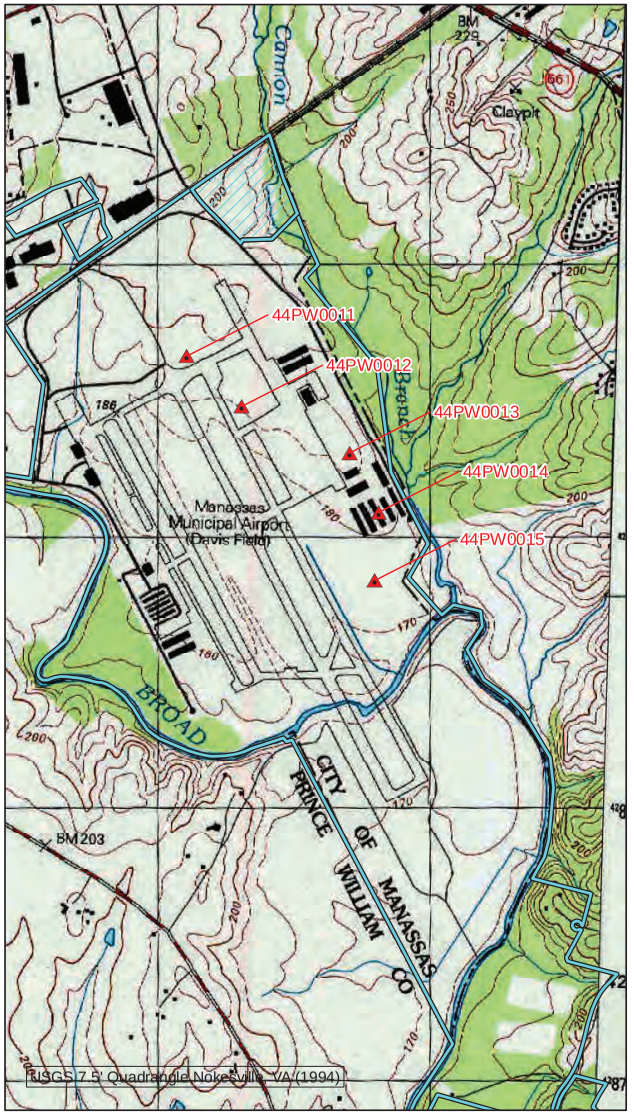
Figure 10

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**VCRIS McLearen 1978**




Legend

- Airport Property
- Amazon Data Center Parcel
- Archaeological Site

0 250 500 Meters

0 1,000 2,000 Feet

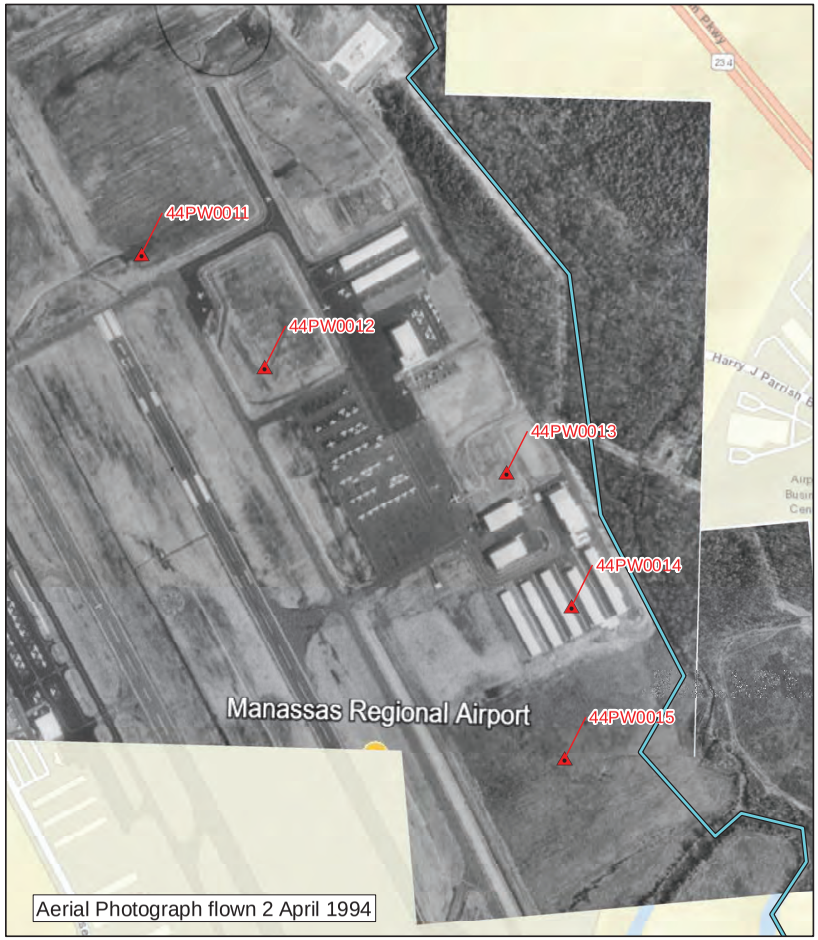
AVION SOLUTIONS GROUP LLC

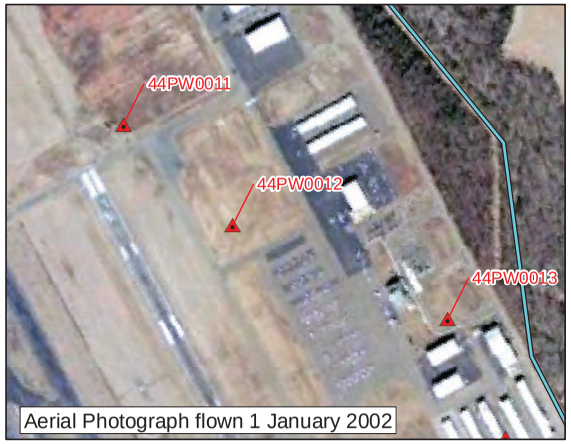
Figure 11

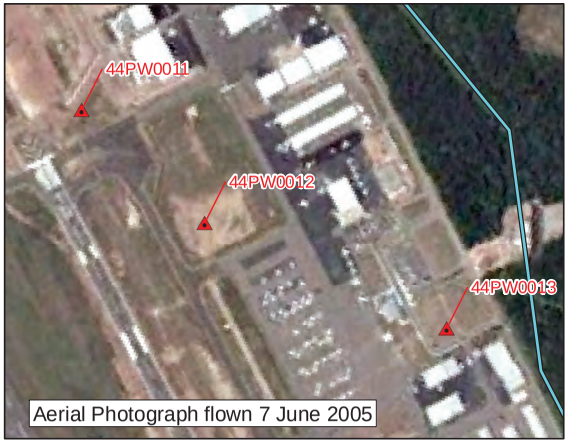
**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

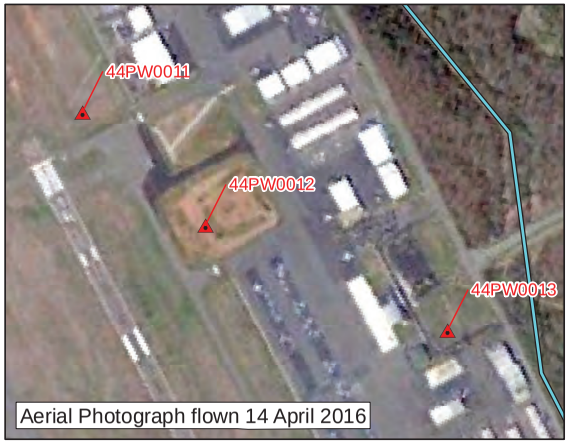
**McLearen's Archaeological Site Datums Overlaid on USGS Nokesville, VA 7.5' Quadrangles from 1971, 1983, and 1994**

*Project 23-98001.002, Version: 10/22/2025 @ 12:21:18 PM*




Legend
- Airport Property
- Archaeological Site

0 100 200 Meters
0 500 1,000 Feet

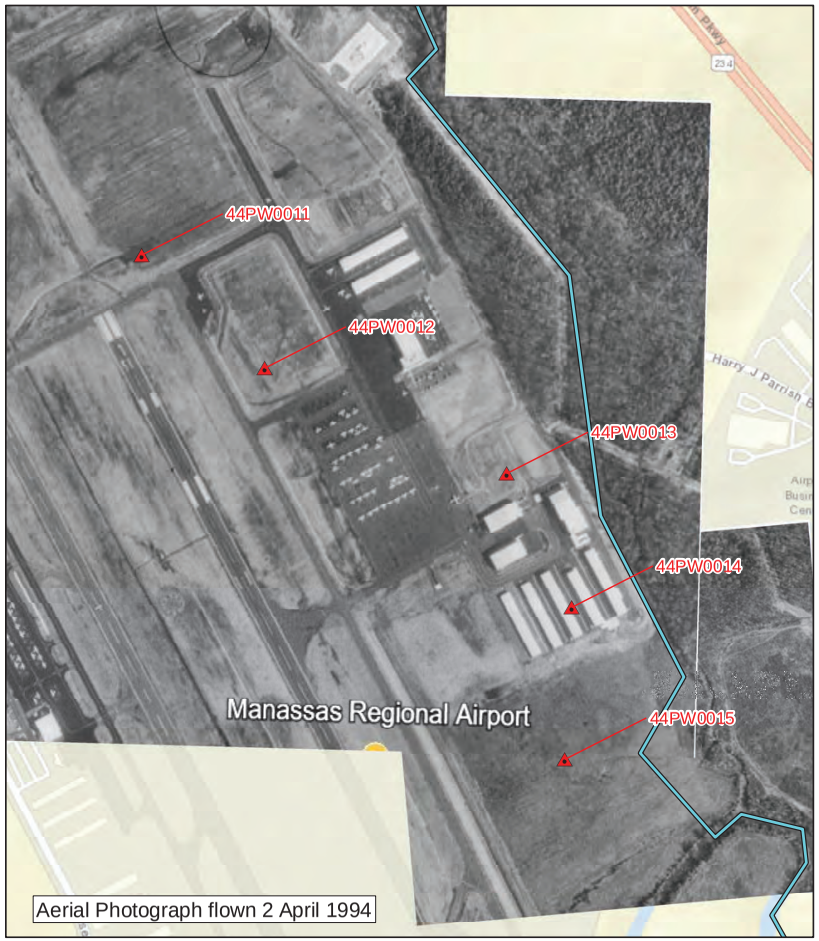
AVION SOLUTIONS GROUP LLC

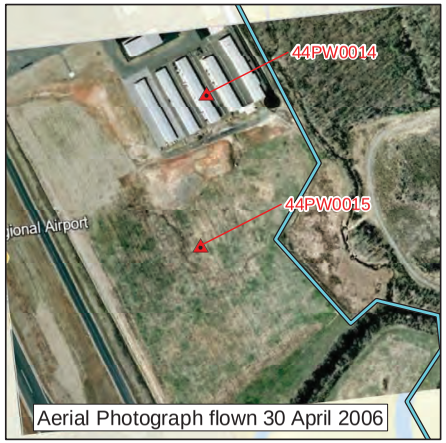
**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

Figure 12

**McLearen's Archaeological Site Datums 44PW0011, 44PW0012, and 44PW0013 Overlaid on 1994, 2002, 2005, and 2016 Historical Aerial Photographs**

*Project 23-98001.002, Version: 10/22/2025 @ 12:22:42 PM*










Legend
- Airport Property
- Archaeological Site

0 100 200 Meters
0 500 1,000 Feet

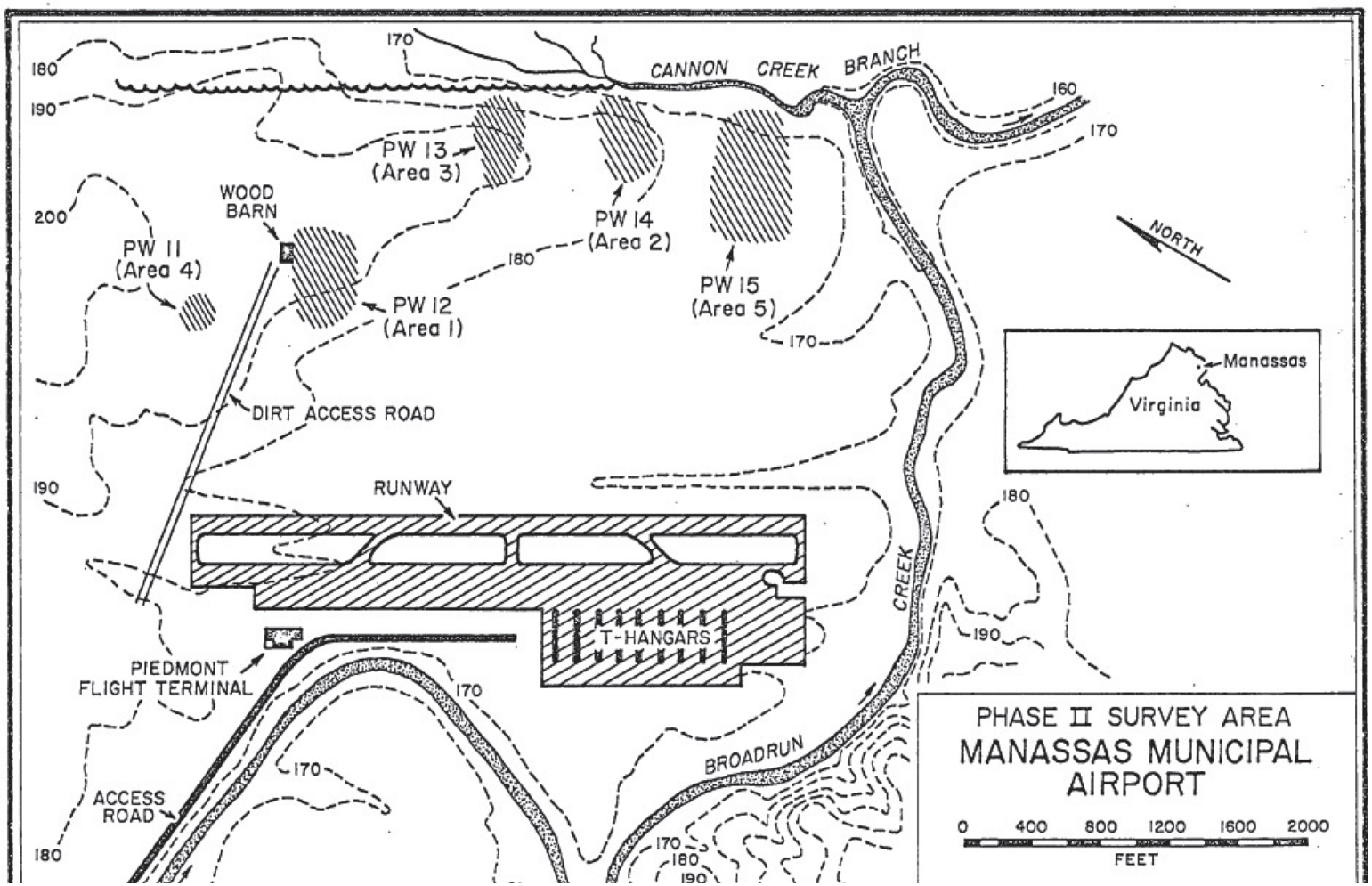
AVION SOLUTIONS GROUP LLC

**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

Figure 13

**McLearen's Archaeological Site Datums 44PW0014 and 44PW0015 Overlaid on 1994, 2006, 2020, and 2025 Historical Aerial Photographs**

*Project 23-98001.002, Version: 10/22/2025 @ 12:24:11 PM*

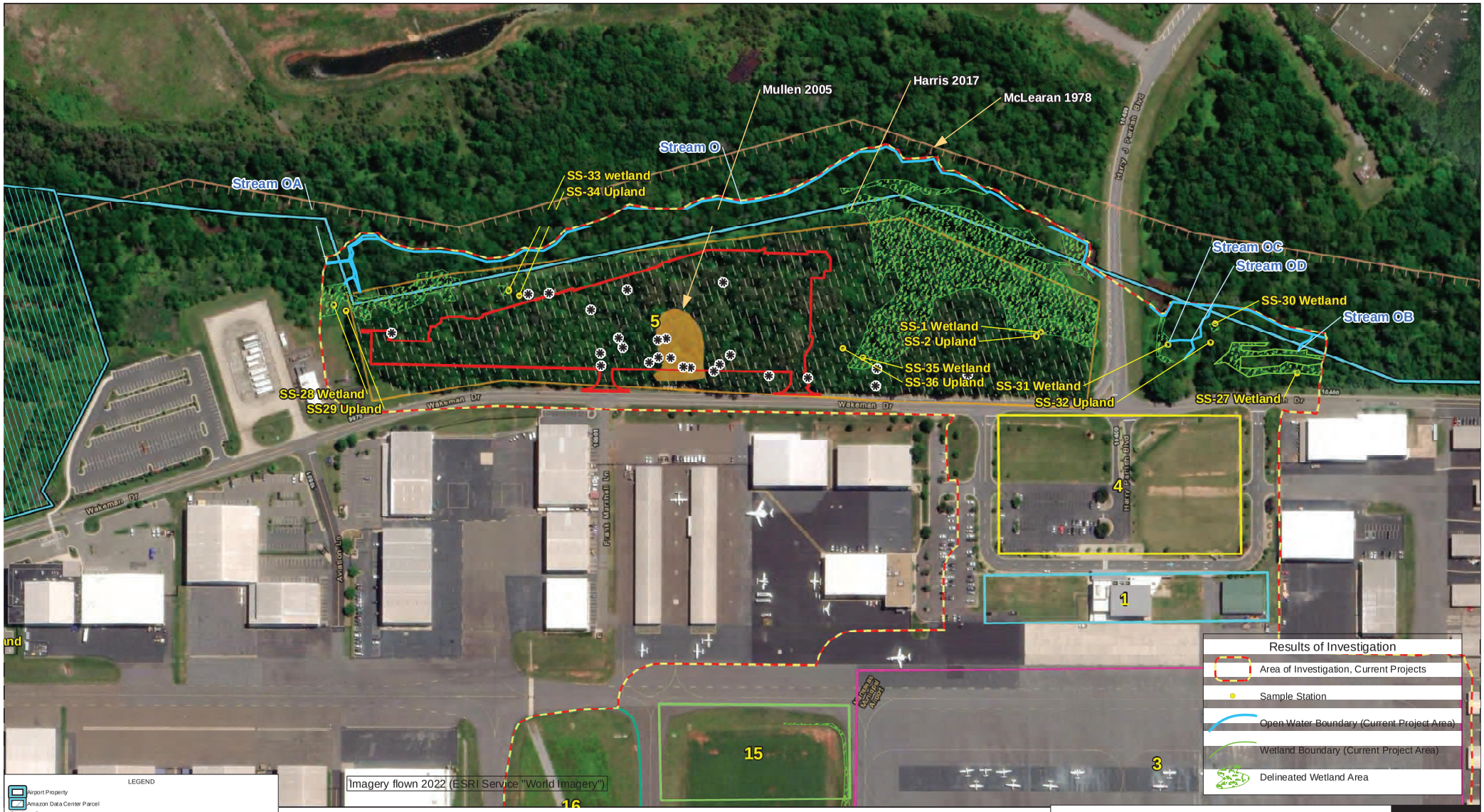



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**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Part of Smith (1978) Figure 1 Showing Locations of McLearen's Sites**

Figure 14




Delineated wetlands and watercourses defined by Davey Resource Group (DRG) on March 11-14, 2024, June 5, 2025, and July 7-8, 2025.

AVION SOLUTIONS GROUP LLC

Figure 15

# Manassas Regional Airport PART 139 Certification and Terminal Redevelopment

## Previous Survey at Economy Parking Lot

*Project 23-98001.002, Version: 10/22/2025 @ 12:28:06 PM*

# Appendix B – Agency Correspondence

**U.S. Department of Transportation**
Federal Aviation Administration

**Beckley Airports Field Office**
176 Airport Circle, Room 101
Beaver, West Virginia 25813
Telephone: 609 916-5790

August 13, 2025

Mr. Roger Kirchen, Director
Division of Review and Compliance Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

**Re: Manassas Regional Airport (HEF), Proposed FAR Part 139 Certification and Terminal Redevelopment Project Environmental Assessment, Prince William County and City of Manassas, Virginia**

Dear Mr. Kirchen:

The City of Manassas and their franchisee (Avports) are proposing a suite of changes to the Manassas Regional Airport (HEF; the Airport) Airport Layout Plan (ALP) (**Attachment A - Figures 1, 2**). The changes to the ALP are a major federal action subject to review pursuant to the National Environmental Policy Act (NEPA). The Federal Aviation Administration (FAA) is the lead federal agency for the proposed project.

The Airport is currently pursuing Federal Aviation Regulation (FAR) Part 139 Certification to initiate commercial air service. Associated with the certification is a suite of airport improvements to support commercial air service including Airport Terminal Redevelopment. The environmental review will evaluate the potential impacts associated with 16 proposed projects at the Airport.

The purpose of this letter is to initiate early coordination with your agency, elicit your comments, and request pertinent information. The other federal, state, local agencies, and tribal nations that are being consulted are listed in **Table 1**.

A Programmatic Environmental Assessment (PEA) is being prepared to evaluate the 16 planned projects identified for introduction of commercial service and Part 139 certification. The PEA facilitates consideration and analysis of projects that have sufficient planning (Tier 1) and projects where planning has not been completed (Tier 2). For projects with incomplete planning, assumptions are made in the PEA so the potential impacts may be assessed and disclosed. **Table 2** lists the 16 projects and **Figure 3** presents the locations of these projects. **Attachment B** provides more detailed information on the PEA and the individual projects by Tier and includes references to additional figures contained in **Attachment A**. **Attachment C** contains the photographs referenced in **Attachment B**.

We would appreciate a response to this inquiry by September 15, 2025. If you have any questions regarding the proposed project, please contact me at (609) 916-5793, or by e-mail at Susan.Stafford@faa.gov. Thank you for your assistance.

Sincerely,

Susan B. Stafford
*Environmental Protection Specialist*
*FAA, Beckley Airports Field Office*

*Enclosed:* *Table 1 – Consulting Agencies*
*Table 2 – PEA Projects*
*Attachment A – Figures*
*Attachment B – PEA and Project Descriptions*
*Attachment C - Photographs*

cc: FAA: Marie Jenet, Chad Carper
Manassas Regional Airport: Juan Rivera and Jolene Berry
Avports: Pranav Trivedi
Avion Solutions Group: Peter Byrne and Carol S. Weed

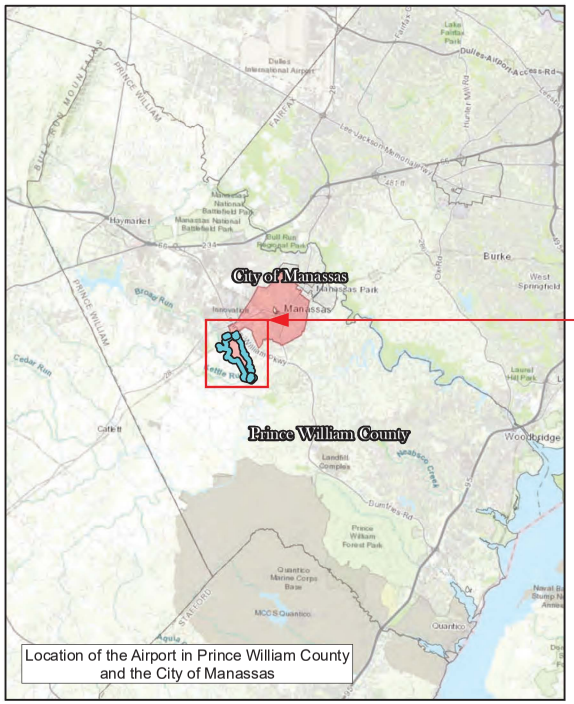
| Table 1. Consulting Agencies | | |
|---|---|---|
| **Jurisdiction** | **Agency** | **Date Response Received** |
| 1. Federal (US) | Army Corps of Engineers, Northern Section | |
| 1. Federal (US) | Department of Agriculture, Natural Resources Conservation Service, Virginia State Conservationist's Office | |
| 1. Federal (US) | Department of the Interior, Office of Environmental Policy and Compliance, Philadelphia Region | |
| 1. Federal (US) | Environmental Protection Agency, Region 3, Office of Communities, Tribes and Environmental Assessment | |
| 1. Federal (US) | Federal Emergency Management Agency, Region 3; Environment & Historic Preservation | |
| 1. Federal (US) | Fish & Wildlife Service, Virginia Field Office | |
| 1. Federal (US) | National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Greater Atlantic Region Office | |
| 2. Nation/Tribe | Catawba Indian Nation | |
| 2. Nation/Tribe | Chickahominy Indian Tribe | |
| 2. Nation/Tribe | Delaware Nation | |
| 2. Nation/Tribe | Pamunkey Indian Tribe | |
| 3. Virginia | Department of Aviation, Airport Service Division | |
| 3. Virginia | Department of Conservation and Recreation, Division of Planning and Recreation | |
| 3. Virginia | Department of Conservation and Recreation, Dam Safety and Floodplains | |
| 3. Virginia | Department of Environmental Quality, Office of Environmental Impact Review | |
| 3. Virginia | Department of Game and Inland Fisheries, Environmental Services Section | |
| 3. Virginia | Department of Historic Resources, Division of Review and Compliance | |
| 3. Virginia | Department of Transportation, Northern Virginia District VDOT | May 3, 2025 |
| 4.Prince William County | Environmental Management | |
| 4.Prince William County | Planning Division | |
| 5. City of Manassas | Engineering Department | |
| 5. City of Manassas | Planning and Development | |

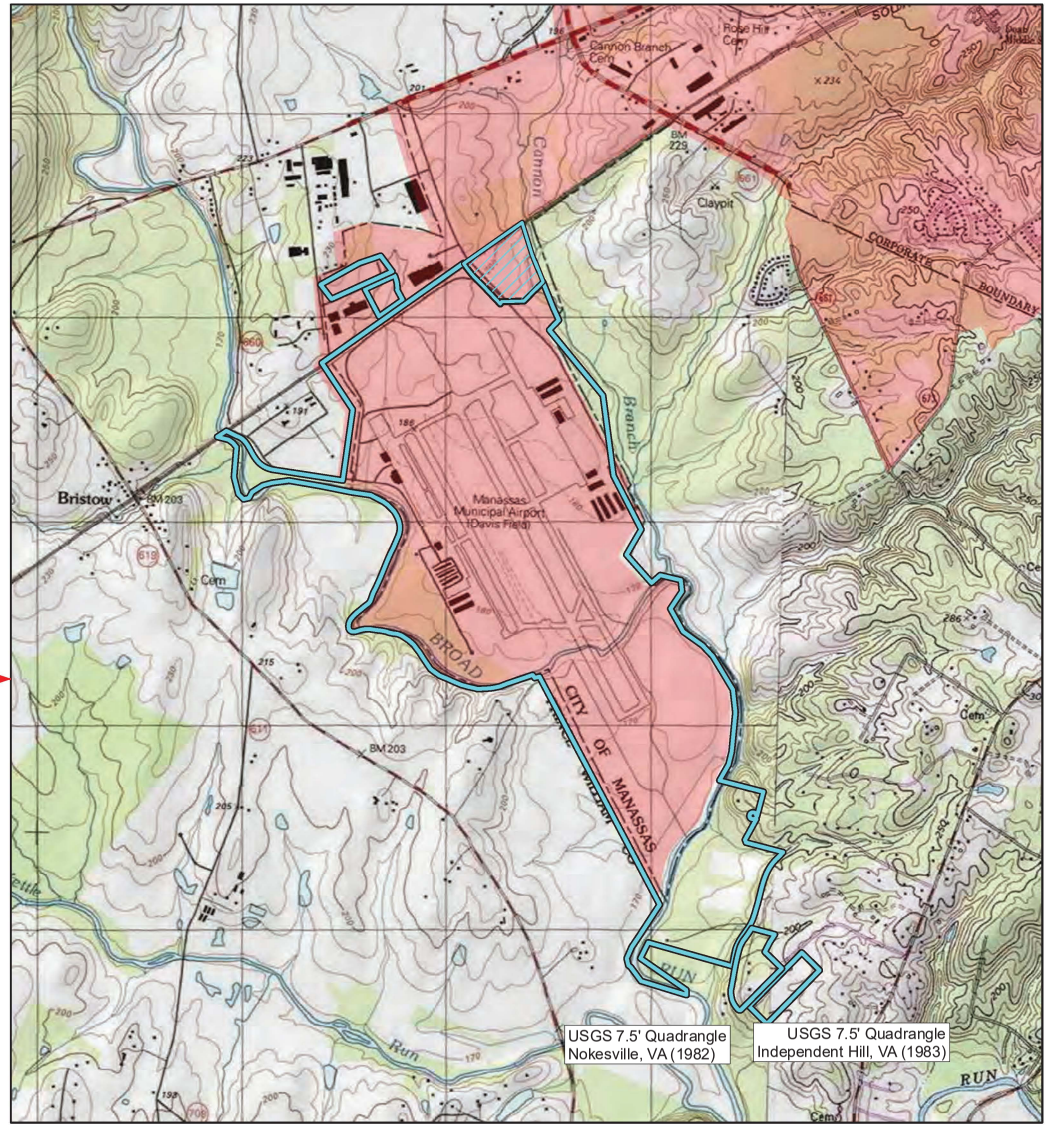
| Table 2 – PEA Projects | | | |
|---|---|---|---|
| **Project Number** | **Project Name** | **Program Tier Construction Year Start-End** | **Project Supports** |
| 1 | Terminal Building Expansion (north, south, and west) | Tier 1: 2026-2026 | Commercial Service |
| 2 | West Ramp General Aviation Tie-Down Replacement | Tier 1: 2026-2026 | Part 139 Certification & Commercial Service |
| 3 | East Ramp Strengthening, Reconfiguration, and Rehabilitation | Tier 1: 2026-2028 | Part 139 Certification & Commercial Service |
| 4 | Terminal Parking Lot Rehabilitation and Expansion | Tier 1: 2026-2026 | Commercial Service |
| 5 | Economy Parking Lot Construction | Tier 1: 2026-2026 | Commercial Service |
| 6 | Bridge Rehabilitation - Runway 16L/34R and Taxiway Bravo | Tier 1: 2026-2027 | Part 139 Certification & Commercial Service |
| 7 | Construction of a new Snow Removal Equipment (SRE) Building | Tier 1: 2027-2028 | Commercial Service |
| 8 | Taxiway Bravo Widening | Tier 1: 2027-2028 | Part 139 Certification |
| 9 | Runway 16L/34R Reconstruction and Strengthening | Tier 1: 2027-2029 | Part 139 Certification & Commercial Service |
| 10 | Taxiway Echo Fillet Widening | Tier 1: 2027-2029 | Part 139 Certification |
| 11 | Taxiway B Reconstruction and Strengthening (South of the Bridge) | Tier 1: 2029-2030 | Part 139 Certification & Commercial Service |
| 12 | Construction of a new East Ramp Taxiway | Tier 2: 2032-2034 | Part 139 Certification & Commercial Service |
| 13 | Runway 16L/34R Widening | Tier 2: 2033-2033 | Part 139 Certification |
| 14 | Construction of an Aircraft Deicing Pad and Apron Expansion between Taxiways Delta and Echo | Tier 2: 2033-2034 | Part 139 Certification |

| Table 2 – PEA Projects | | | |
|---|---|---|---|
| **Project Number** | **Project Name** | **Program Tier Construction Year Start-End** | **Project Supports** |
| 15 | Construction of new Expanded East Ramp and Taxilane between Taxiways Delta and Echo | Tier 2: 2033-2036 | Part 139 Certification & Commercial Service |
| 16 | Construction of new Aircraft Rescue and Fire Fighting (ARFF) Facility | Tier 2: 2035-2036 | Part 139 Certification |

# ATTACHMENT A - FIGURES




LEGEND

- Airport Property
- Amazon Data Center Parcel
- City of Manassas

0 500 1,000 Meters

0 2,000 4,000 Feet

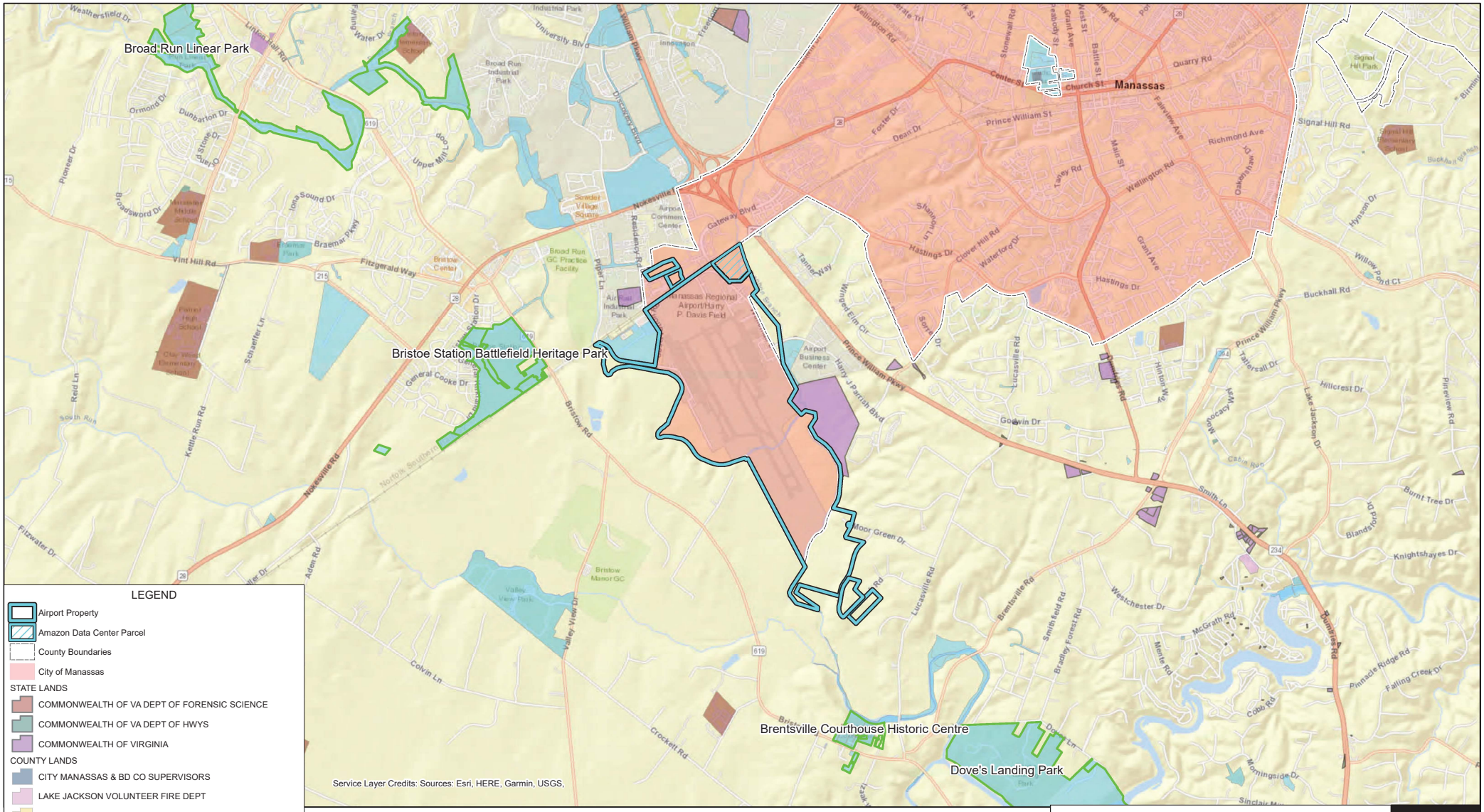
AVION SOLUTIONS GROUP LLC

Project 23-98001.002, Version: 7/15/2025 @ 3:26:34 PM

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Location of the Airport**

Figure 1




AVION SOLUTIONS GROUP LLC

Figure 2

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**State, County, and Local Jurisdictions**

*Project 23-98001.002, Version: 7/31/2025 @ 10:58:01 AM*




PROPOSED PROGRAM PROJECTS

- Airport Property
- Amazon Data Center Parcel

Construction Areas:

1. Terminal Building Expansion north and south)
2. West Ramp GA Tie-Down Relocation
3. East Ramp Strengthening, Reconfiguration, and Rehabilitation
4. Terminal Parking Lot Rehabilitation and Expansion
5. Economy Parking Lot
6. Bridge Replacements - Runway 16L/34R and Taxiway Bravo
7. Construction of a new Snow Equipment Storage Building
8. Taxiway Bravo Widening
9. Runway 16L/34R Reconstruction and Strengthening
10. Taxiway Echo Fillet Widening
11. Taxiway B Reconstruction and Strengthening South of the Bridge)
12. Construction of a new East Ramp Taxiway
13. Runway 16L/34R Widening
14. Aircraft Deicing Pad between Taxiway D and E
15. Construction of new Expanded East Ramp and Taxilane between Taxiways Delta and Echo
16. Construction of a new ARFF Facility

0 200 400 Meters

0 500 1,000 Feet

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# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## PEA Projects

Figure 3

Project 23-98001.002, Version: 8/11/2025 @ 5:29:44 PM




LEGEND

Airport Property

New Lease Parcel Boundary

0 25 50 Meters

0 100 200 Feet

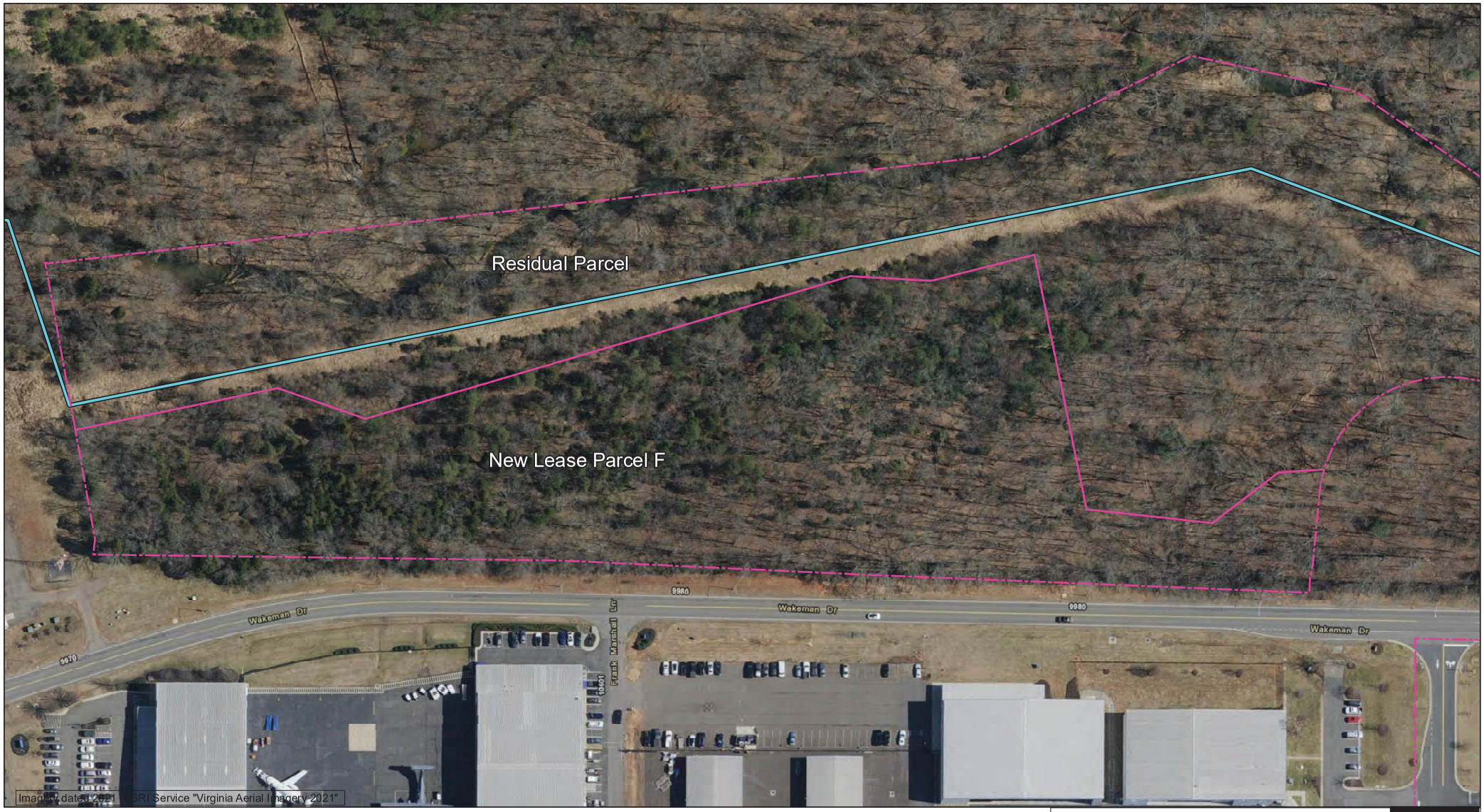
AVION SOLUTIONS GROUP LLC

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Franchise Agreement Lease Parcels A, B, C, D, E.**

Figure 4

*Project 23-98001.002, Version: 7/15/2025 @ 3:37:51 PM*




0 25 50 Meters

0 100 200 Feet

LEGEND

Airport Property

New Lease Parcel Boundary

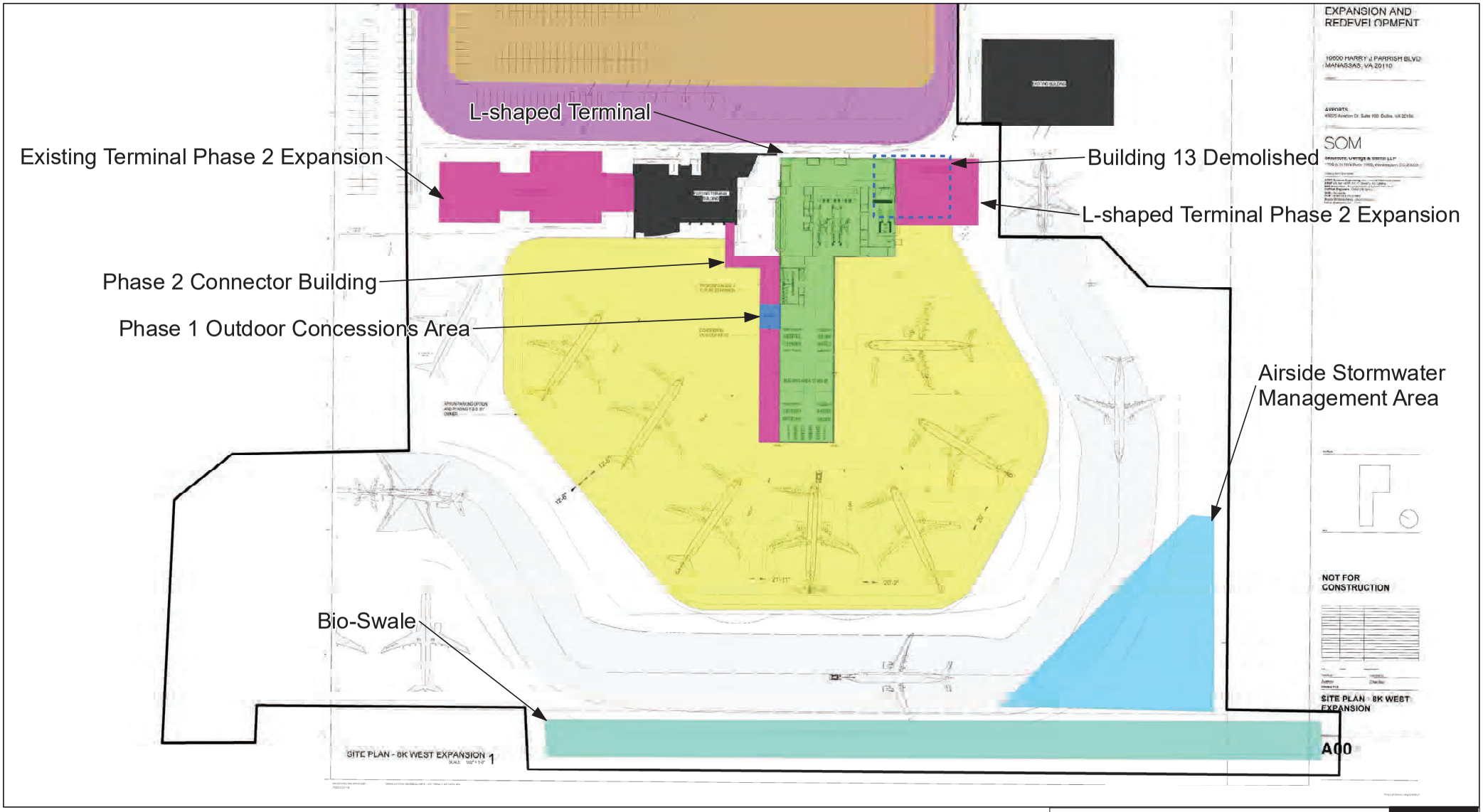
AVION SOLUTIONS GROUP LLC

Figure 5

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Franchise Agreement Lease Parcel F**

*Project 23-98001.002, Version: 7/15/2025 @ 3:39:41 PM*



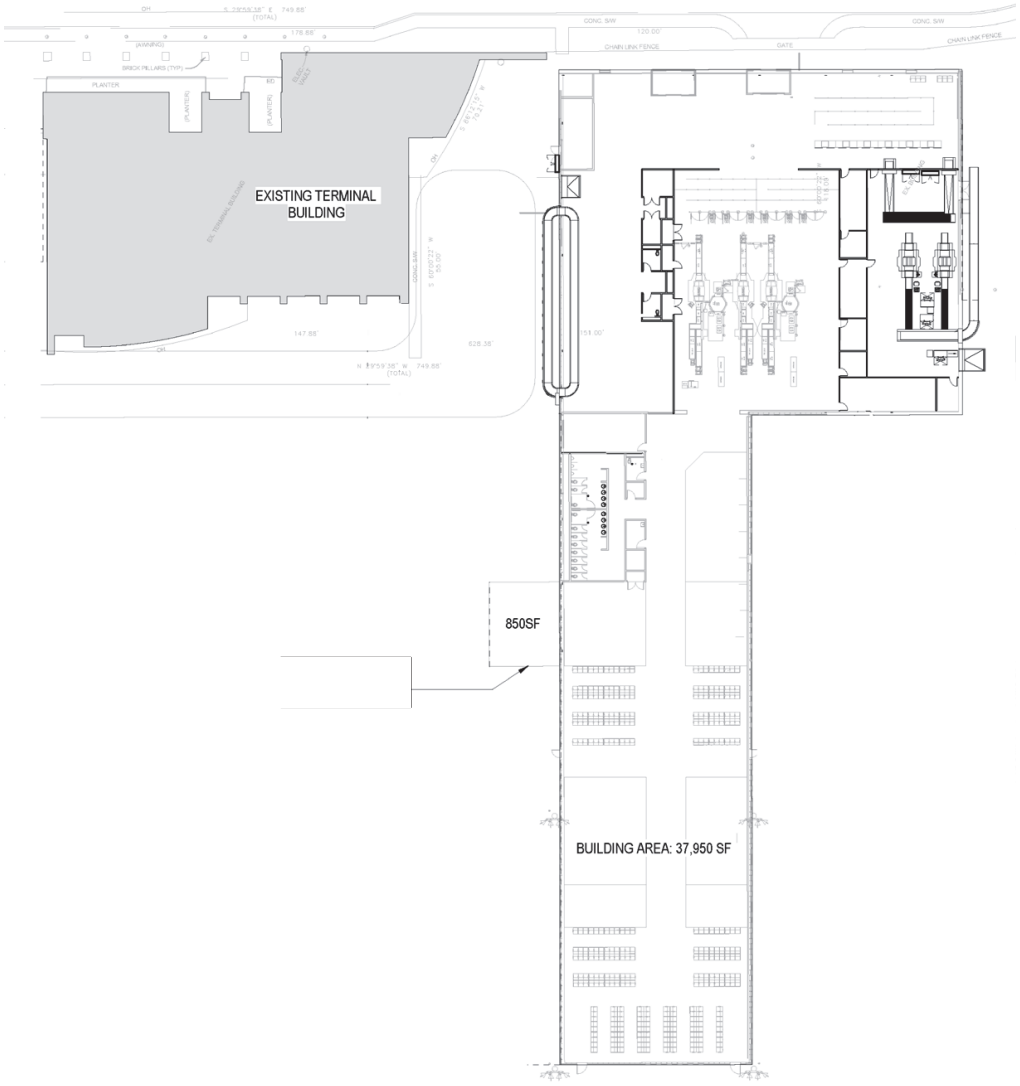

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**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Terminal Construction Plan Phases 1 and 2**

Figure 6

*Project 23-98001.002, Version: 7/31/2025 @ 11:06:31 AM*




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**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Phase 1 L-shaped Terminal Service Areas**

Figure 7

*Project 23-98001.002, Version: 7/31/2025 @ 11:05:43 AM*




LEGEND

- Airport Property
- Amazon Data Center Parcel

Construction Areas:

- 1 - Terminal Building Expansion (north and south)
- 2 - West Ramp GA Tie-Down Relocation
- 3 - East Ramp Strengthening, Reconfiguration, and Rehabilitation
- 7 - Construction of a new Snow Equipment Storage Building
- 8 - Taxiway Bravo Widening
- 9 - Runway 16L/34R Reconstruction and Strengthening
- 10 - Taxiway Echo Fillet Widening
- 12 - Construction of a new East Ramp Taxiway
- 13 - Runway 16L/34R Widening
- 14 - Aircraft Deicing Pad (between Taxiway D and E
- 15 - Construction of new Expanded East Ramp and Taxilane between Taxiways Delta and Echo
- 16 - Construction of a new ARFF Facility

0 100 200 Meters

0 500 1,000 Feet

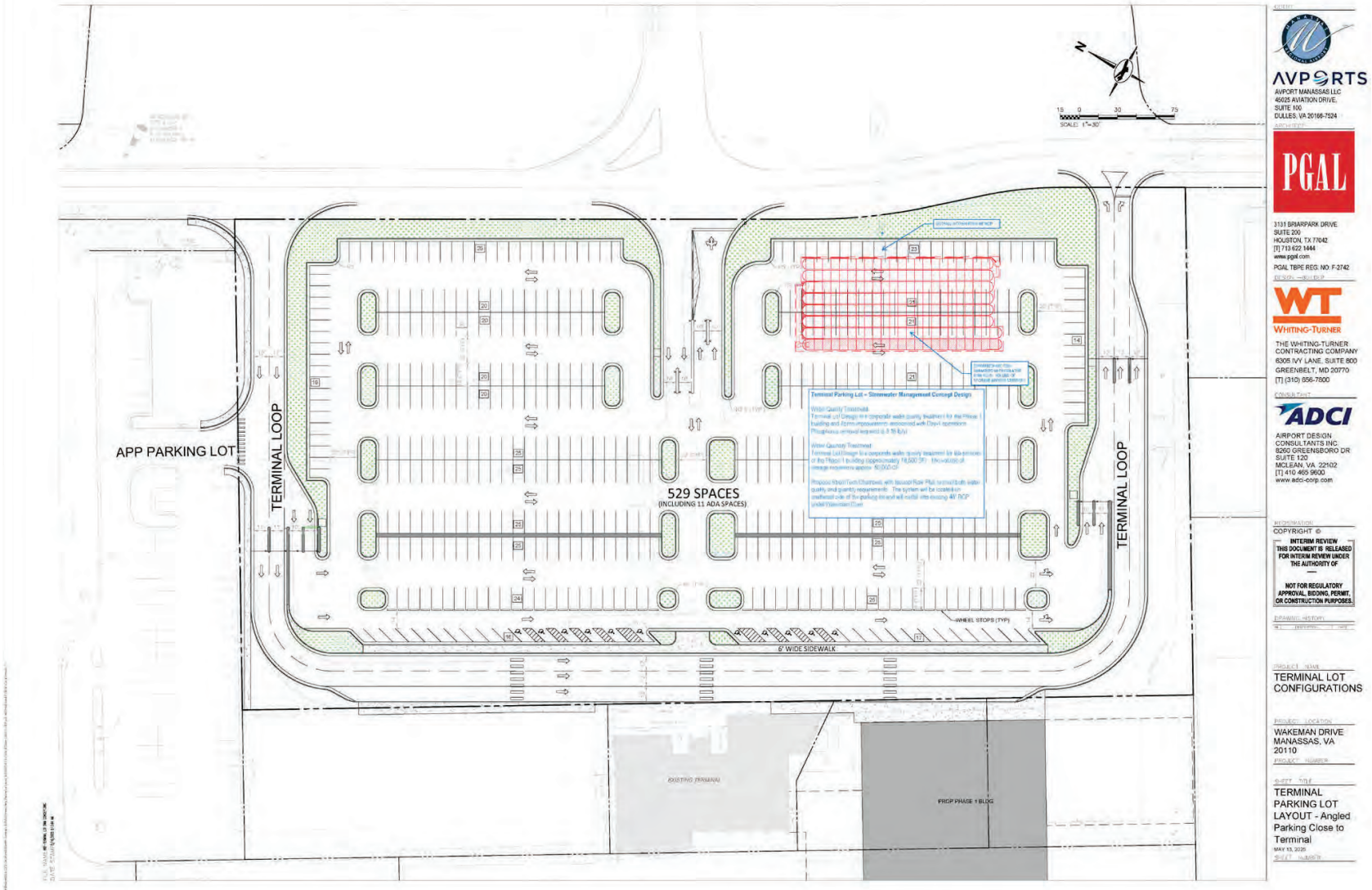
AVION SOLUTIONS GROUP LLC

# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## Extent of West Ramp to be Used for GA Aircraft Tie-Down Locations

Figure 8

*Project 23-98001.002, Version: 8/11/2025 @ 4:49:34 PM*

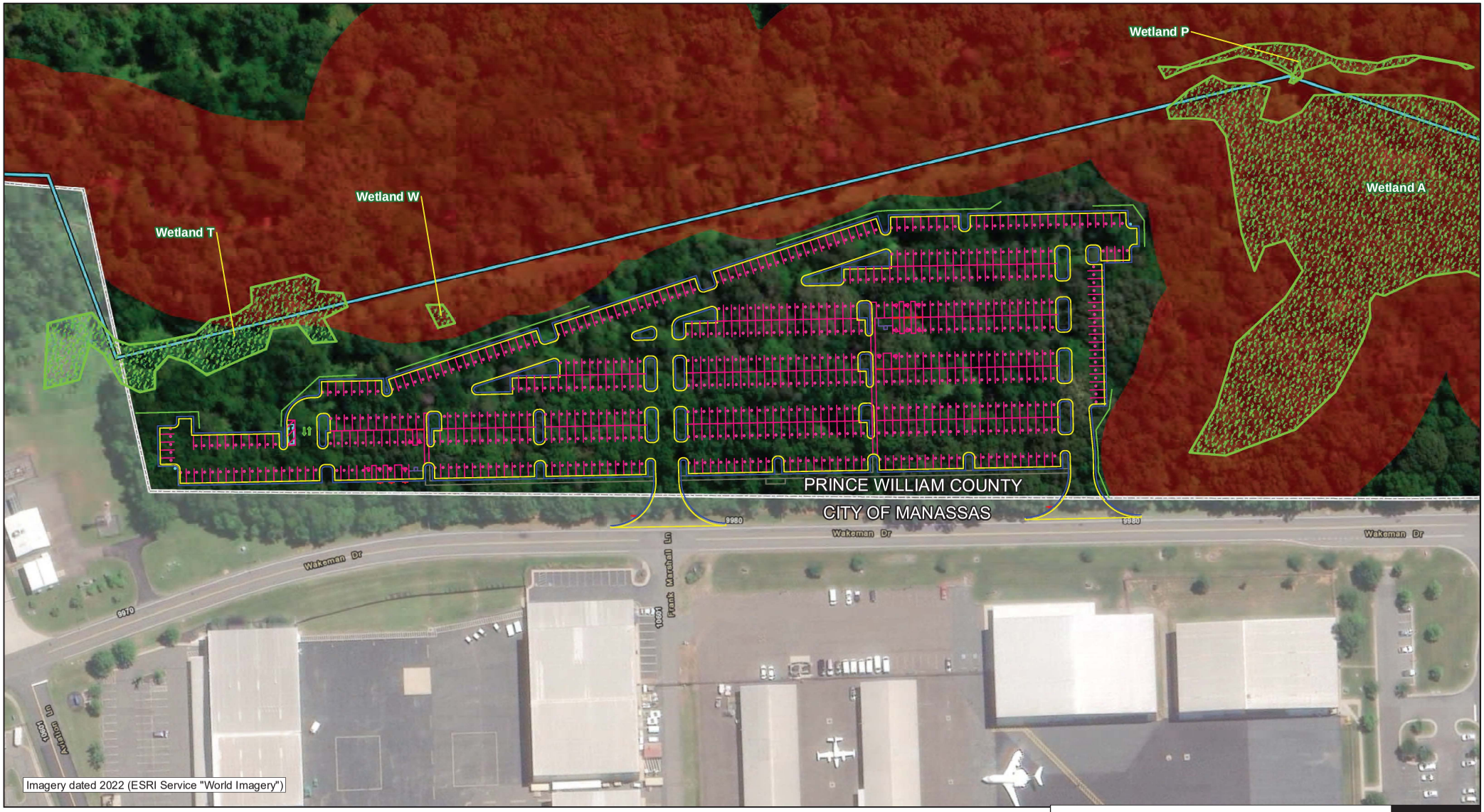



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**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Proposed Terminal Parking Lot Detail**

Figure 9




LEGEND

- Airport Property
- City of Manassas Boundary
- Retaining Wall
- Newly Defined Wetland Boundary
- Resource Protection Area (RPA, PW Co.

0 25 50 Meters

0 100 200 Feet

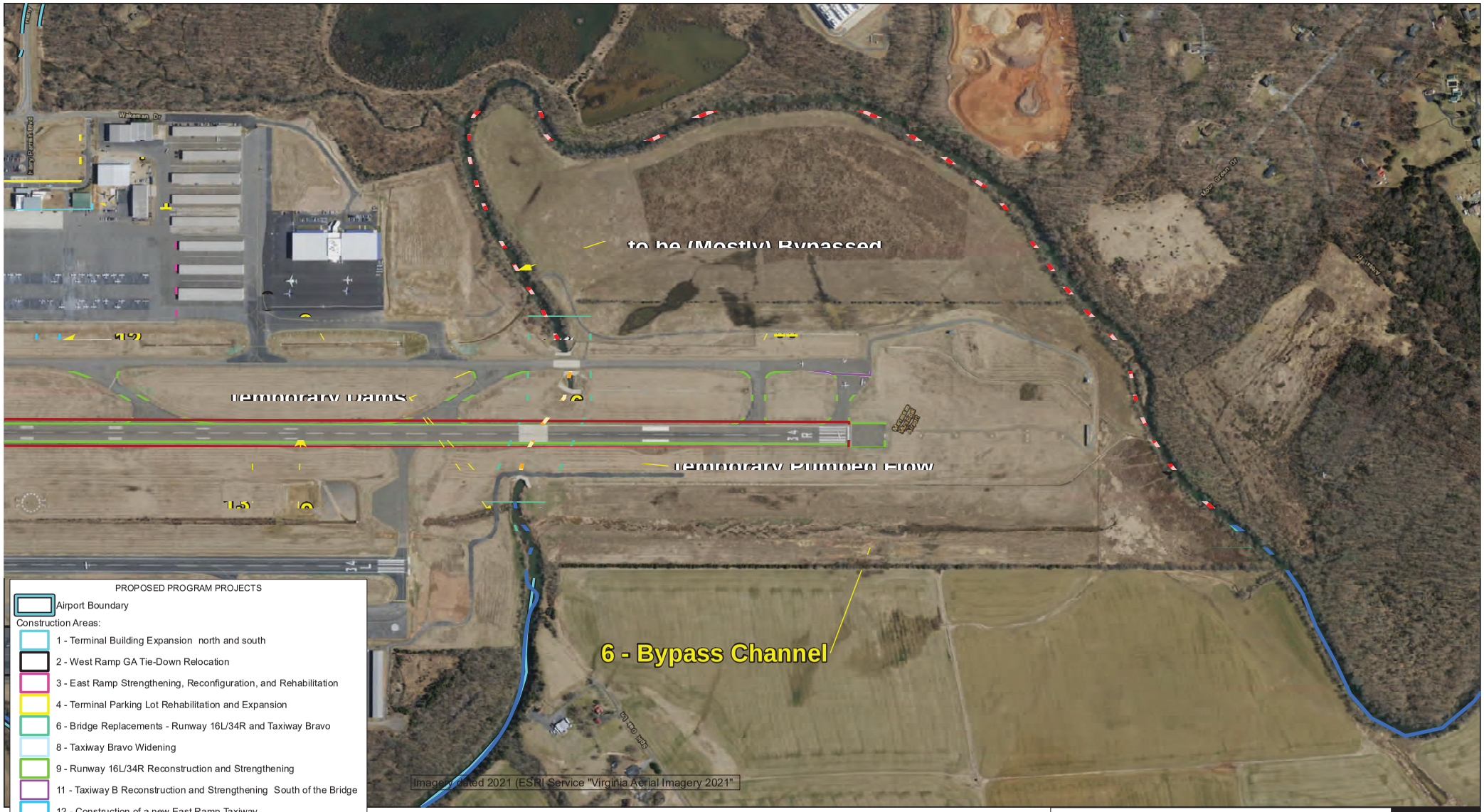
AVION SOLUTIONS GROUP LLC

Figure 10

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Economy Parking Lot Layout**

*Project 23-98001.002, Version: 7/31/2025 @ 11:01:25 AM*




PROPOSED PROGRAM PROJECTS

- Airport Boundary

Construction Areas:

- 1 - Terminal Building Expansion north and south
- 2 - West Ramp GA Tie-Down Relocation
- 3 - East Ramp Strengthening, Reconfiguration, and Rehabilitation
- 4 - Terminal Parking Lot Rehabilitation and Expansion
- 6 - Bridge Replacements - Runway 16L/34R and Taxiway Bravo
- 8 - Taxiway Bravo Widening
- 9 - Runway 16L/34R Reconstruction and Strengthening
- 11 - Taxiway B Reconstruction and Strengthening South of the Bridge
- 12 - Construction of a new East Ramp Taxiway
- 13 - Runway 16L/34R Widening

Broad Run Temporary Bypass:

- Broad Run
- Section of Broad Run to be (Mostly Bypassed
- Temporary Pumped Flow
- Temporary Dam

0 100 200 Meters

0 250 500 Feet

AVION SOLUTIONS GROUP LLC

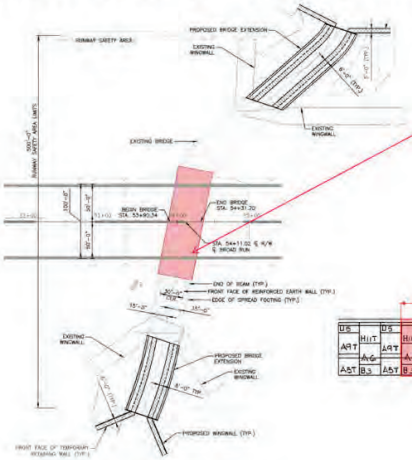
# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## 2025 R/W 16L/34R and T/W B Bridge Strengthening Action Areas

Figure 11

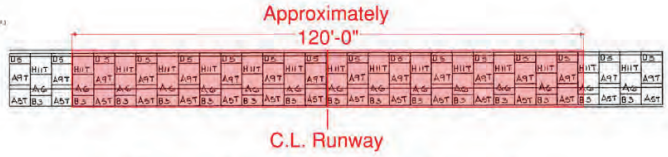
Project 23-98001.002, Version: 8/11/2025 @ 4:47:14 PM

## MSE Wall – Conceptual Strengthening Extents (Runway)



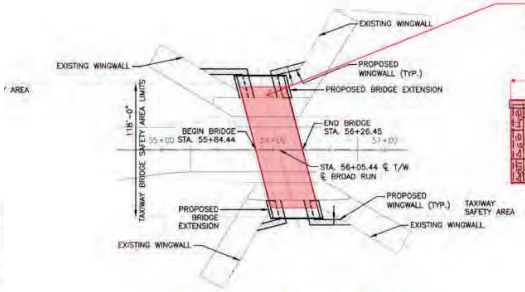
Approximate Extent of Reinforcing Zone

Plan View - Runway Bridge



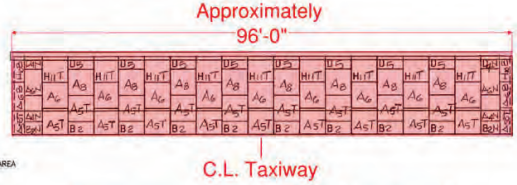

Elevation View - Runway Bridge Abutment 2

## Wall – Conceptual Strengthening Extents (Taxiway)



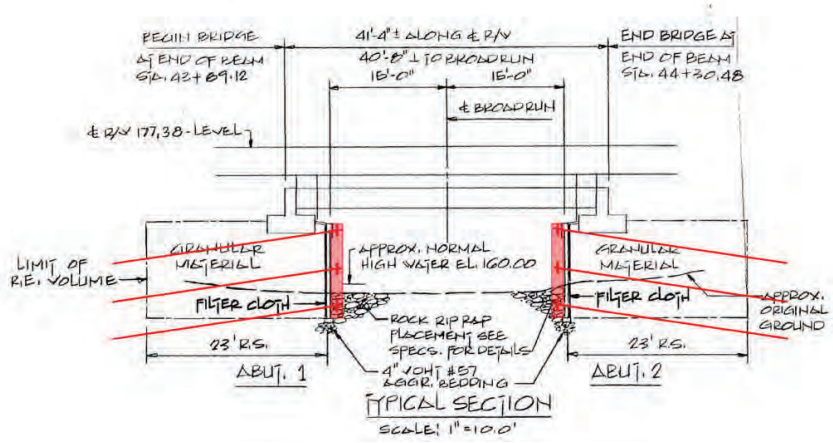

Approximate Extent of Reinforcing Zone

Plan View - Taxiway Bridge




Elevation View - Taxiway Bridge Abutment 1

## MSE Wall – Conceptual Strengthening Soil Nail Wall




AVION SOLUTIONS GROUP LLC

Figure 12

**The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program**

**Bridge Action Area Detail**

# ATTACHMENT B –
# PEA AND PROJECT DESCRIPTIONS

# Attachment B

## PEA Program Introduction and Project Descriptions

On November 13, 2023, the Federal Aviation Administration FAA notified the Manassas Regional Airport HEF, the Airport; **Attachment A - Figures 1 and 2** that it would need an Environmental Assessment EA for the following:

1. FAA issued Federal Aviation Regulation (FAR Part 139 Airport operating certificate
2. FAA approval of the airport layout plan ALP) changes: expand terminal building; reconfigure terminal apron East Ramp); and strengthen and widen Runway 16L/34R and Taxiway B;
3. Connected landside actions (automobile parking, roadway improvements, etc.)
4. FAA approval of aircraft operating specifications

A total of sixteen 16) projects would be required to complete the four actions above. In a series of discussions with the FAA, it was determined that while all 16 projects listed by the FAA are ultimately needed for FAR Part 139 certification and are needed to support commercial service, not all are needed to begin commercial service. Of these projects, some are needed in the short term 5 years or less to initiate commercial service beginning in 2026 and ending in 2030. Other projects also needed for commercial service may be completed over a longer term from 2032 to 2036. The short-term projects have been advanced with sufficient planning and design for the purposes of National Environmental Policy Act NEPA) review. The long-term projects are in the conceptual stage with preliminary planning completed, such as location, physical dimensions, pavement depth, etc., but design has not been advanced that would fully inform the scope of the long-term projects sufficient for NEPA review.

As FAR Part 139 certification and commercial service could be initiated with the short-term projects and understanding that the related long-term projects could come later, a Programmatic EA PEA) approach was considered for this program by the FAA. The PEA would support a "Tiered" decision document by the FAA of both the short term and long-term projects. This Tiered approach would allow the FAA to render a decision on those projects that have sufficient design completed short term while providing a conditional approval on the long term projects that do not yet have sufficient design completed.

In January 2024, the FAA noted that a Programmatic EA would be an acceptable procedural approach to evaluate the projects regardless of when those projects are needed. The FAA directed the preparation of a Programmatic EA (PEA) for this program.

There are a total of 16 projects that are subject to this Programmatic review. The projects are divided into two tiers and these are defined as:

- Tier 1 projects have sufficient planning to support development and construction in a timeline of 5 years or less and will support FAR Part 139 certification and the initiation of commercial service. Construction of Tier 1 projects is projected to begin in 2026.

- Tier 2 projects are projects with conceptual planning completed but with designs that are not yet finalized. For Tier 2 projects, assumptions are being made in the PEA so that potential impacts may be assessed and disclosed. For projects subject to conditional determination, the FAA may require a reevaluation to determine if the information remains valid and adequate, prior to construction start of each Tier 2 project. If FAA determines that the information is no longer valid, a reevaluation will be needed once the planning process for these facilities has been completed, and they are ripe for analysis.

The 16 PEA projects are shown in **Attachment A** - **Figure 3**. Tables 1 and 2, respectively, are lists of the agencies that are being notified of the projects and the 16 projects that are being considered under the PEA. These tables are included at the end of the agency consultation cover letters.

The eleven 11) Tier 1 Projects are proposed for construction start and completion between 2026-2030. The Tier 1 projects include both Part 139 certification projects and those outlined in the commercial service Franchise Agreement.[1] **Attachment A** - **Figures 4 and 5** illustrate the lease parcels that are being developed by the Franchisee (Avports .

The five 5 Tier 2 Projects are proposed for construction start and completion post Tier 1 development which is anticipated to be 2032-2036. Except for the Aircraft Rescue and Fire Fighting ARFF facility, the Tier 2 Projects are longer term infrastructure projects needed to improve existing facilities and expand the commercial service capability of the Airport.

In this PEA, the available information about each of the projects is presented. Analyses of these projects are based on current assumptions included in the project descriptions below**.** As the planning advances on Tier 2 Projects, the supplemental information will be assembled and the updates provided to FAA to determine the appropriate level of further analyses.

## 2025 PEA Project Descriptions

All airfield construction projects will be coordinated with the Airport Traffic Control ATC) tower personnel prior to construction start and appropriate Notices to Airmen NOTAMs [2] will be issued. Overall, all airfield development will be designed in accordance with applicable FAA design standards and will be approved by the FAA prior to construction start.

[1] Avports and the City entered into a Franchise Agreement in July 2023. As part of this agreement, Avports proposed to re-develop and expand the existing Terminal building, expand the terminal parking lot, build an economy parking lot, provide support for the reconstruction and strengthening of Runway 16L/34R, and provide support for the construction of a new Snow Removal Equipment (SRE) building. The Franchise Agreement required the City to lease parcels A through F to Avports. These parcels currently contain the existing terminal (Parcel A), vacant land north of the terminal (Parcel B), existing Building 13 (Parcel C), the East Apron (Parcel D), the terminal parking lot (Parcel E), and wooded area associated with the Economy Parking Lot (Project #4).

[2] NOTAM is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means. It states the abnormal status of a component of the National Airspace System (NAS) – not the normal status. https://www.faa.gov/about/initiatives/notam/what_is_a_notam. Site accessed May 20, 2025.

## Tier 1 Projects (Years 2026-2030)

Construction work on the 11 Tier 1 Projects will begin after the FAA environmental determination is issued on the PEA. The Tier 1 work is expected to continue for five years after the Finding of No Significant Impact (FONSI) is issued.

### Project #1 - Terminal Building Expansion (north, south, and west)

The existing terminal was constructed in 1995 and was made operational in 1996 **Attachment C - Photographs 1-6** . It was built to pre-9/11 security standards. Furthermore, components of the existing terminal do not meet current Americans with Disabilities Act (ADA) standards. The existing 21,000 square foot SF terminal was intended to support operations of small regional aircraft. The existing terminal contains no baggage system, no security screening, and it lacks the necessary security separations between landside and airside functions. It currently houses the Airport offices, meeting spaces, tenant offices and restroom facilities.

Under the Franchise Agreement, Avports will develop an expansion of the terminal consistent with accepted design standards for functionality, safety and security. Avports is advancing a terminal expansion that will be anchored by the existing terminal which will be expanded in two phases **Attachment A – Figure 6** . Prior to the first phase, the initial action in the terminal area will be the demolition of Building 13, which is currently the Airport Maintenance building. The Airport Maintenance function will be relocated to a new building **Attachment C – Photographs 5, 6** . The new building is Project #7 which is discussed later herein.

After the Building 13 demolition, the first phase of the terminal expansion will begin on the south side of the existing terminal building. The terminal expansion will be “L-shaped,” and the foot end of the L-shape will be in-line with the south end of the existing terminal. The leg of the ‘L’ will be oriented east-west and extend onto the East Ramp. The terminal expansion will be a pre-engineered metal building and utilities for the terminal expansion will be extended from services at the existing terminal and Building 13. An outdoor concessions area will be constructed on the north side of the L-shape terminal as shown on **Figure 6.** It will be 30 feet ft) by 28 ft 840 SF). Overall, the L-shaped terminal building will be 38,491 SF.

The L-shape terminal interior will be subdivided and will contain baggage claim, holdrooms, office space, passenger screening, and restrooms **Attachment A** – **Figure 7**). The utility connections that serviced Bldg 13 remained in place and those connections will be used.

The second phase of construction includes construction of a connector building between the existing terminal and the L-shape terminal extension; an extension to the north end of the existing terminal; and an extension on the south side of the L-shaped terminal in line with the existing terminal (**Figure 7**). The three Phase 2 extensions will cumulatively include an additional 36,608 SF.

The proposed terminal expansion project is being designed according to the International Air Transport Association IATA), the Airport Cooperative Research Program (ACRP), Transportation

Security Administration TSA) standards, Design and Construction Standards Manual City of Manassas , and the Airport Development Reference Manual.

The terminal project is being designed in accordance with the IATA "Optimum" range to service the target Design Day Flight Schedule (DDFS)[3]. As an example, hold room sizing utilizes IATA v12 standards calling for 19.4 to 23.7 SF per seated passenger and 13 to 16.1 SF per standing passenger with a target of 50-70 percent seating offered per occupant. These criteria yield a range of areas between 2,400 and 3,300 SF per room. Similar approaches are being used for all terminal project use areas, referencing existing standards and benchmarked against facilities currently in use.

### Project #2 – West Ramp General Aviation Tie-Down Relocation

Until recently, the East Ramp had 86 tie-downs for light General Aviation GA aircraft[4] **Attachment C – Photograph 7** . In 2025, the Airport installed 43 new tie-downs in the West Side Corporate Area to accommodate the relocation of light GA aircraft from the East Ramp to the West Corporate Area ramp **Attachment A – Figure 8**).

To facilitate construction of Project #1, 43 light GA aircraft that are currently tied down on the East Ramp will be relocated to the existing West Ramp. The West Ramp is currently configured for light GA operations, and no construction is required to accommodate the aircraft relocated from the East Ramp to support the construction of Project #1.

### Project #3 - East Ramp Strengthening, Reconfiguration, and Rehabilitation

Once the new terminal's Phase 1 footprint is in place, the East Ramp will be repaved, and seven aircraft hardstands and a service road will be created for airport vehicles. The proposed work on the East Ramp will be performed in two stages and will be started in 2026 and completed in 2028. The first stage will be the demolition of 840,000 SF of existing asphalt and concrete. This stage will accommodate construction of the terminal expansion see Project #1 above).

Repaving will occur in the second stage. Once the Terminal is in place, the East Ramp paving and strengthening will be constructed. From base to surface, the strengthening and paving layers will consist of 6-inches of P209 aggregate base, 6-inches of P304 cement treated base, and 16-inches of P501 concrete. There will be no aircraft operations on the East Ramp or on Taxiway Echo during the demolition, repaving, and strengthening work.

The hardstands are sized to initially accommodate four Airplane Design Group ADG III aircraft Group III) aircraft[5]. Pavement markings for the initial four hardstands that will be used by the

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[3] DDFS is an estimation of the number of expected passengers that could use an airport during an average day of the peak month of activity. The DDFS may be found in the Forecast section of the PEA.

[4] Light GA aircraft are typically aircraft with one or two engines that weigh less than 12,500 pounds (lbs). These types of aircraft are generally used for training and recreational use.

[5] ADG classifications group aircraft based on wingspan and tail height. The characteristics of Group III aircraft are 1) a wingspan that can range from 79 ft to 118 ft and 2) a tail height of 30 feet to 45 feet. Typical aircraft in the Group III category include the 737-800 and A320 aircraft which falls within this category and are common aircraft used for scheduled passenger service.

commercial aircraft also will be completed after pavement construction. The hardstand area has been sized to eventually accommodate up to seven Group III aircraft with associated hardstands for each aircraft.

At the west side of the East Ramp, a bioswale has been called out on the design plan **Attachment A – Figure 6 and Attachment C – Photograph 8** . The bioswale is 1020 ft in length and 50 ft wide. The structure will accept run-off from both the East Ramp and Project #9.

### Project #4 - Terminal Parking Lot Rehabilitation and Expansion

The existing ground-level terminal parking lot is located immediately east of the existing terminal building. The parking lot is a large rectangle divided into four quadrants. Only the northwest quadrant is paved, and it currently has 119 striped parking spaces **Attachment A – Figure 9 and Attachment C – Photographs 9-12**). Project #4 involves:

- paving the three grass covered quadrants,
- creating landscaped islands that will delimit the end of parking slot sets; and
- reconfiguring the parking slot arrangements within the existing paved lot.

Ingress into the parking lots will be at the north terminal loop entrance off Wakeman Drive Dr and in the existing center aisle entrance west of the Harry J Parrish Blvd and Wakeman Dr intersection. Egress will occur at the south end of the terminal parking lot loop and also in the central aisle. At completion, the lot will contain approximately 529 slotted spaces including 11 ADA accessible parking locations.

### Project #5 - Economy Parking Lot Construction

Project #5, the economy parking lot, will lie between Wakeman Dr west , Cannon Branch east , Harry J. Parrish Blvd south , and the Airport Fuel Farm (north **Attachment A – Figure 10**). The proposed location was subject to a previous environmental review in 2018 as part of an EA for West Side Corporate Development and East Parcel Development EA RS&H 2018) and a Finding of No Significant Impact was issued by the FAA[6]. The West Side Corporate Development and East Parcel Development did not proceed.

The area that will accommodate the Economy Parking Lot is presently undeveloped **Attachment C - Photographs 13 and 14**). The proposed parking lot will encompass approximately 590,000 SF and the space will eventually accommodate 647 parking spaces and a shuttle bus station. The economy parking lot will be accessed from the east side of Wakeman Dr **Attachment A – Figure 10**).

[6] March, 2018.

### Project #6 - Bridge Rehabilitation: Runway 16L/34R and Taxiway Bravo

In 2014-2015, the existing crossings for R/W 16L/34R and T/W B were constructed over Broad Run. **Attachment C** containing **Photographs 15, 16, 17, and 18** illustrate the existing conditions in various action areas. The existing bridges were widened during the 2014-2015 bridge work. The existing bridges are not designed with sufficient strength to accommodate routine operations by Group III aircraft 737-800 and A320 aircraft) which are expected to operate from the Airport; therefore, the existing bridges must be strengthened to accommodate those aircraft operations. Their overall sizes will not be changed as part of this program.

Based on 2025 field testing and subsequent test result analyses, Walter P. Moore and Associates, Inc. Manafpour and Treser 2025) developed an approach that will strengthen the existing structures. **Attachment A – Figure 11** illustrates the locations that will be subject to the strengthening actions in 2026-2027. The approach has been accepted by Avports and the Airport and will entail four actions:

1) Site Work Preparation: Re-routing Broad Run, removing rip-rap, erecting scaffolding, and opening the by-pass channel.
2 Strengthening A: Soil nailing, tensioning soil nails, reinforcing shotcrete walls, installing drainage mats, and weep holes
3) Strengthening B: Box Beam dowel reinforcement with structural steel reinforcement and anchorage to Box Beams
4) Site Work Closing: Close by-pass channel and remove coffer or retaining dams, replace rip-rap, remediate floodplain disturbance areas

**Figure 12 - Bridge Action Area Detail** shows the locations and actions associated with Strengthening A and B. The design set for these is in preparation and will be provided to the FAA and applicable agencies upon completion. **Attachment A – Figure 12** presents the June 2025 concepts of both actions.

In order to complete the proposed stream bank and under bridge work, the stream waters from Broad Run will have to be temporarily retained or diverted. The initial site work will re-open a bypass channel that was subject to geotechnical investigation and that was used during the 2014-2015 bridge work. The by-pass channel will continue from its north opening to re-join Broad Run.

Stream waters flowing from the northeast of the work area from Cannon Branch will be retained with coffer dams or retaining walls **Attachment A – Figure 12**). The rip-rap will be removed and stockpiled within the construction zone. ASG assumes that the construction zone will be sized to correspond to that defined for use in 2013-2014. Upon completion of the stream bank work and the under bridge strengthening, the bypass channel's north diversion opening will be closed and the coffer or retaining dams will be removed.

### Project #7 - Construction of a new Snow Removal Equipment (SRE) Building

Building 13, which will be demolished during Project #1, is the existing Airport maintenance building **Attachment C – Photographs 5 and 6** . According to the 2025 City of Manassas Proposed Fiscal Year FY 2026 Budget and Five-Year Capital Improvement Plan, Project #7 "..entails building a Maintenance Equipment Storage MES)/Snow Removal Equipment (SRE

Facility to accommodate a new larger multi-use SRE building and provide a storage facility with a layout which meets the growing needs of the airport" Keen 2025:347). The proposed new maintenance facility will be located on the northeast corner of the airport on undeveloped land adjacent to Wakeman Dr **Attachment A - Figure 3 and Attachment C – Photographs 19, 20, and 21**).

This area will be modified during construction to accommodate the proposed building, paved parking outside of the building, and work area during construction. The new building dimensions are proposed to be 150 ft long by 80 ft wide by 30 ft high. Depth below ground surface of the building footings would be 24 inches. Here, and elsewhere on the landside, the pavement will consist of a 2-inch Virginia Department of Transportation VDOT Type Stone Matrix Asphalt (SMA) Surface Course SM12.5a or SM9.5A over a 6-inch VDOT Cement Treated Base Course 8 percent cement content by weight) Rivera, 2024, pp. 1-7 . Overall, apron grades and adjacent surface gradients will be in accordance with FAA design standards.

### Project #8 - Taxiway Bravo Widening

Taxiway B will be widened by 10 ft on the east and west sides of the existing taxiway to provide a full 50 ft width to meet FAA design standards for Group III aircraft. As noted in the discussion of ASG Project #11 below, the expansion area will be paved in three layers. From surface to base these will consist of 4-inches of P4017 asphalt surface course, 6-inches of P403 cement treated base, and 12-inches of P220 cement treated soil base. Overall, apron grades and adjacent surface gradients will be in accordance with FAA design standards.

### Project #9 - Runway 16L/34R Reconstruction and Strengthening

Runway 16L/34R is 6,200 ft. The blast pads add an additional 175 ft to either end of the runway. However, the blast pads are not being repaved as part of Project #9. This project will entail reconstruction and strengthening of approximately 952,000 SF of the existing runway pavement – its full length. This work will be done in stages between 2026 and 2028 to avoid prolonged closures of the runway and impacts to scheduled service.

According to Airport staff, the Runway has variable 3 to 8 inches of P401 Asphalt Surface Course over 5 to 6 inches of stabilized base course cement or asphalt treated base course) over subgrade. The asphalt may vary in depth due to grade corrections Rivera, 2024, pp. 1-7). On July 14, 2025, Mr. Rivera noted that the project "is a simple mill and fill project. It is variable depth, but we will be adding three inches to the existing pavement." For analysis purposes, ASG assumed the new pavement will consist of P401 asphalt. Overall, apron grades and adjacent surface gradients will be in accordance with FAA design standards.

[7] P401 is a reference used by the FAA for a specific asphalt mix design for airfield pavements. This specification is intended to be used for the surface course for airfield flexible pavements subject to aircraft loadings of gross weights greater than 30,000 pounds (13,600 kg) and is to apply within the limits of the pavement designed for full load bearing capacity. FAA Advisory Circular (AC) 150/5370-10H.

Project #9 includes “infrastructure improvements such as electrical, grading, and drainage. Drainage issues both under and along the runway will be addressed through the installation of new storm drains. The locations of these drains are not yet defined. The runway lighting system will be upgraded to LED lights and airfield signs will be replaced with LED fixtures.” Rivera, 2024, pp. 1-4, 1-5).

### Project #10 - Taxiway Echo Fillet Widening

The pavement dimensions for T/W E do not meet Group III design standards. The widening of T/W E will entail adjusting the fillets to meet design standards and widen the taxiway from 40 ft to 50 ft. It is assumed that approximately 2400 SF of new pavement will be added to the existing taxiway. This will also include the relocation of existing taxiway lights and signs at the intersection of T/W E and TW B.

The new pavement in the expansion areas will consist of three layers: 4-inch P401 asphalt surface course, 6-inch P304 cement-treated base course, and a 6-inch P209 crushed aggregate base course. Existing pavement grades will remain the same to promote proper drainage. Overall, apron grades and adjacent surface gradients will be in accordance with FAA design standards.

### Project #11 – Taxiway B Reconstruction and Strengthening (south of the bridge)

T/W B is a parallel taxiway, providing aircraft access for the full length of the primary runway R/W 16L/34R from the east apron areas. The taxiway has two high-speed exits along with connecting taxiways at both ends of the runway.

The T/W B pavement was rated as very poor in 2022 All About Pavements, Inc. 2022), and the pavement will need to be strengthened to support scheduled commercial airline service. The taxiway pavement north of the bridge over Broad Run was rehabilitated in the Summer of 2024 and will not need to be strengthened as part of this project.

As part of Project #11, the taxiway strengthening will encompass both the concrete bridge section that traverses Broad Run and the taxiway south of the bridge section. This work is proposed to be completed in 2028-2029.

ASG assumes that the rehabilitation and strengthening will entail replacement of the taxiway pavement with three new layers. From surface to base these will consist of 4-inches of P401 asphalt surface course, 6-inches of P403 cement treated base, and 12-inches of P220 cement treated soil base. Overall, adjacent surface gradients will be in accordance with FAA design standards. In addition, the project will replace the runway lights and signs with modern LED fixtures and replace the pavement markings. (Rivera, 2024, pp. 1-5).

### Tier 2 Projects (2032 to 2036)

The locations of the Tier 2 Projects are shown in **Attachment A – Figure 3.** Plan drawings depicting the direct impact areas for these projects will be provided to the FAA prior to construction

start. In all cases involving pavement replacement, ASG has conservatively assumed that all existing asphalt and concrete will be removed, and that the new pavement, except where noted, will consist of no less than 18 inches of layered material.

### Project #12 - Construction of a new East Ramp Taxiway

This project is for a new taxiway entrance onto the East Ramp from T/W B **Attachment A – Figure 3 and Attachment C – Photograph 22** . To support aircraft flow and efficiency and avoid congestion on the East Ramp, this new taxiway is needed to give pilots and air traffic controllers options for aircraft entering and exiting the East Ramp. This project will be designed for Group III aircraft, and is located south of the existing T/W E and perpendicular to the existing T/W B. The need for the project results from the implementation of scheduled service which will result in the presence of Group III aircraft on the East Ramp.

The new taxiway will measure 215 ft long by 50 ft wide (29,906 SF . The area will be paved in three layers: 4-inch P401 asphalt surface course, 6-inch P304 cement-treated base course, and a 6-inch P209 crushed aggregate base course. The pavement grades will be set to promote proper storm drainage. New lighting, signage and marking will be installed in accordance with FAA design standards.

### Project #13 - Runway 16L/34R Widening

The width for R/W 16L/34R will be increased from 100 ft to the recommended standard width of 150 ft as the critical aircraft for the runway has a maximum certified takeoff weight greater than 150,000 pounds. The 25-ft wide pavement strips to either side of the existing runway will be tapered to match the elevation of the bridge[8]. The runway pavement strips will be paved in three layers. From surface to base these will consist of 6-inches of P401 asphalt, 6-inches of P403 cement treated base, and 6-inches of P209 aggregate base. Overall, adjacent surface gradients will be in accordance with FAA design standards.

### Project #14 - Construction of an Aircraft Deicing Pad and Apron Expansion between Taxiways Delta and Echo

This project includes construction of a new deicing pad constructed and an expanded apron area between T/W D and E (**Attachment A – Figure 3**). The aircraft deicing pad will be able to accommodate one 737-800 aircraft at a time. The pad will be designed in accordance applicable sections of FAA AC 150/5300-14D – *Design of Aircraft Deicing Facilities*.

The deicing pad and apron expansion area will measure 430 ft long by 330 ft wide (141,900 SF . The apron grades and adjacent surface gradients will be in accordance with FAA design standards and the pavement grades will be set to promote storm drainage. The pavement layers

[8] According to Juan Rivera, 7/14/2025, "…the runway bridge will not be overlay. Instead, the design engineers will have to taper the runway elevations down so that they match the existing elevation of the bridge."

will be a 4-inch P401 asphalt surface course, 6-inch P304 cement-treated base course, and a 6-inch P209 crushed aggregate base course.

The deicing fluid will be captured from the sloped inward surface of the pad and flow into trench drains at the base of the pad which will direct the fluid into a holding tank. The fluid will then be removed for recycling. The tank will hold 1,500 – 2,000 gallons of deicing fluid.

### Project #15 - Construction of new Expanded East Ramp and Taxilane between Taxiways Delta and Echo

Taxiways D and E are in the north part of the East Ramp **Attachment A – Figure 3** . This project will construct a new taxilane providing access between T/W D and T/W E. As with the proposed new East Ramp taxiway, the new taxilane is needed to facilitate the movement of Group III aircraft in the East Ramp area. By creating the new taxilane, aircraft will be able to pass north and south on existing Taxilane Z without interfering with the aircraft parked on the Fixed Base Operator (FBO) ramp.

The new taxilane will encompass an area of 110,000 SF. The new pavement will consist of a 4-inch P401 asphalt surface course, 10-inch P304 cement treated base course over compacted subgrade in accordance with FAA pavement specifications.

### Project #16 - Construction of a new Aircraft Rescue and Fire Fighting (AARF) Facility

The Airport has ARFF services provided by a contractor. The Airport has two ARFF trucks and a fire attack vehicle that are housed in T-Hangar C-3, a 50 ft by 60 ft hangar located south of the existing terminal **Attachment C – Photograph 23** . This is a temporary facility that has been outfitted into an ARFF station. This facility is temporary as it does not meet the FAR Part 139 requirements for an ARFF station in support of scheduled commercial service.

Per the current emergency response procedures, the on-site equipment in T-Hangar C-3 is used when the City of Manassas Fire and Rescue Department Department) responds to aircraft accidents and incidents at the Airport. In such cases, the Department personnel drive from the nearest fire station 2.9 miles away to the airport and deploy the ARFF vehicles located in T-Hangar C-3.

To support the introduction of scheduled commercial service, the FAA has identified the need for the Airport to construct an ARFF facility. The response time with the existing agreements in place will be improved by the construction of an on-airport ARFF facility and the existing agreements will be amended to reflect its new siting on-Airport.

The proposed concept includes a new 4-bay ARFF facility on the north side of Taxilane C **Attachment A – Figure 3 and Attachment C – Photograph 24** . The building dimensions are proposed to be 100 ft long by 60 ft wide by 30 ft high. Depth of the building footings is 24 inches. As with the pavement around the SRE building, the ARFF facility pavement will have a 2-inch VDOT Type SMA Asphalt Surface Course SM12.5A or SM9.5A) top course overlying a 6-inch VDOT Cement Treated Base Course (eight percent cement content by weight).

## ATTACHMENT B – REFERENCES CITED

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# ATTACHMENT C – PHOTOGRAPHS



Photograph 1. HEF Terminal, looking SE at the north and west facades (Field Photograph CSW 060425).



Photograph 2. Looking S at the north façade of the HEF Terminal. The grassed area will host a Phase 2 terminal extension (Field Photograph JM_IMG0462, 01/11/2024).



Photograph 3. HEF Terminal, looking NE at the south and west facades (Field Photograph CSW_060425).



Photograph 4. Looking N at the south façade of the existing HEF Terminal. The east side of the Phase 1 L-shaped terminal extension will be located in this grassed area (Field Photograph JM_IMG8757, 01/11/2024).



Photograph 5. Building 13, looking SE at the north and west facades (Field Photograph CSW_060425).



Photograph 6. Building 13 showing vehicles and equipment housed in the facility (Field Photograph CSW_060425).



Photograph 7. Looking east from the East Ramp infield toward the west façade of the existing Terminal (Field Photograph CSW_P11100060, 1/11/2024).




Photograph 8. Looking N at the west edge of the East Ramp and its existing drain. The bioswale as depicted on the concept includes part of the grassed area to the west.



Photograph 9. Looking SW at the existing terminal parking lot loop (Field Photograph CSW_060525).



Photograph 10. Terminal parking lot with terminal lot loop in the forefront, the existing parking quadrant, and the grassed quadrant in the background (Field Photograph CSW_060525).



Photograph 11. Looking E at the terminal parking lot with terminal lot loop in the forefront and the existing center aisle beyond the flag poles (Field Photograph CSW_060525).



Photograph 12. Looking SE at the terminal parking lot with terminal lot loop in the forefront and grassed SE and SW quadrants (Field Photograph CSW_060525).



Photograph 13. Looking S at the Wakeman Drive ROW with utility pole adjacent to the Project #4 woods (left) (Field Photograph CSW_P1110035, 01/11/2024).



Photograph 14. Looking NE at one of the small secondary runs within Project #4 woods (Field Photograph CSW_P1110032, 01/11/2024).



Photograph 15. Looking SW at T/W B (left) and R/W 16L/34R (right) during the bridge replacements in 2014. The by-pass channel is in the photo's upper right (Field Photograph Airport_DSC0563, 2014).



Photograph 16. The new 2014-2015 T/W B and R/W 16L/34R bridge structures (Field Photograph Airport_DSC0191, 2014).



Photograph 17. The existing east side of the Cannon Branch bridge structure underlying T/W B (Field Photograph CSW_P3140005, 03/14/2024).



Photograph 18. Looking NE at the bridge structure under R/W 16L/34R (Field Photograph CSW_P0130022, 03/14/2024).



Photograph 19. Looking ENE at the existing fill mound in the proposed SRE building lot (Field Photograph CSW_P1110020, 01/11/2024).



Photograph 20. Looking east at the proposed SRE building lot and its exposed substrata (Field Photograph CSW_P1110021, 01/11/2024).



Photograph 21. Looking NW at the proposed SRE building lot (beyond fence). The Wakeman Drive ROW hosts a buried cable, and, behind the cable post, a stormwater structure manhole cover (Field Photograph CSW_P3140040, 3/14/2024).



Photograph 22. Looking E across the grassed infield area that will hold proposed Project #9. The existing terminal's west façade is in the background (Field Photograph CSW_P3140025, 03/14/2024).




Photograph 23. Looking at the east façade of T-hanger building 10529 that currently hosts the Airport's fire trucks (Field Photograph CSW_P1110002, 01/11/2024).



Photograph 24. Proposed location of the New ARFF Building, looking NW (Field Photograph CSW_P1110017, 01/11/24).

# COMMONWEALTH of VIRGINIA

## Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
*Director*

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Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

**MEMORANDUM**

To: Susan Stafford
Federal Aviation Administration

From: Adrienne Birge-Wilson, Architectural Historian (804) 482-6092 Adrienne Birge-Wilson
Review and Compliance Division

Subject: Manassas Regional Airport (HEF) Terminal Redevelopment Environmental Assessment Project | DHR File No. 2025-4507

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We understand that the City of Manassas and their consultant (Avport) are proposing the use of changes to the Manassas Regional Airport (HEF; the Airport) land and facilities subject to review pursuant to the National Environmental Policy Act (NEPA). The Federal Aviation Administration (FAA) is the lead federal agency for the proposed project. The Airport is currently pursuing Federal Aviation Regulation (FAR) Part 139 certification to support commercial service, including Airport Terminal Redevelopment. A Programmatic Environmental Assessment (EA) is being prepared to evaluate the 16 planned projects identified for introduction of commercial service and Part 139 certification.

The FAA has initiated early coordination with the Virginia Department of Historic Resources (DHR; the State Historic Preservation Office) to elicit our comments and requests for information.

The introduction of new federal, state, local agencies, and public participation is being considered. Have other potentially interested parties been identified? If so, please provide details. Also, will the FAA be using the NEPA process to coordinate the effort in accordance with NEPA and Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (54 U.S.C. 300101 et seq.) and its implementing regulation, "Protection of Historic Properties" (36 CFR Part 800)?

Regarding archeological resources within the Area of Potential Effects (APE), the Manassas Regional Airport property was surveyed for archeological resources in 1978. This investigation identified five (5) archeological sites within the Airport property (44MN0011 through 44MN0015, inclusive). None of these sites were evaluated for eligibility for listing in the NRHP. The subsequent development of the Airport property would likely result in the destruction of all of these sites. While sites 44MN0014 and 44MN0015 are now located beneath existing Airport facilities, 44MN0011, 44MN0012, and portions of 44MN0013 have currently unknown remaining archeological integrity. If redevelopment related impacts are proposed in the location of these sites, DHR recommends an archeological Phase I subsurface assessment to determine whether or not these sites retain Phase II integrity.

The ocat on of the propose Economy Park ng Lot appears to have been un dsturbe by mo ern d eve opment. Base on th s nformat on, DH d recommen s a Phase I archaeo og ca survey of the d Economy Park ng Lot area be comp ete n or er to assess the presence of prev ous y un dent f e d archaeo og ca resources. The stu des must be con ucte by or un er the rect superv s on of a qua f e d profess ona s meet ng the Secretary of the Inter or's Profess ona Qua f cat on Stan ar s (48 d 44738- d 39) n the appropr ate f e ds an shou dbe cons stent w th DH d's Gu de nes for Con uct ng H stor c d esources Survey n V rg n a (September 2017). One boun copy an one g ta copy of the resu t ng d report shou dbe subm tte to our off ce for rev ew an approva pr or to mp ementat on of the d un ertak ng. After rev ew ng the resu ts of the stu des, we w d be ab e to a v se you whether any further d nvest gat ons an /or m t gat ve act ons are warrante . d
d
We ook forwar to rev ew ng the APE for rect an n drect effects an the ent f cat on of h stor c d propert es as we as engag ng n consu t ng part es' meet ngs as th s project eve ops. d
d
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d

PRINCE WILLIAM COUNTY

**Planning Office**
Tanya M. Washington, AICP
Director of Planning

September 22, 2025

Jamie Morgan, CPSS, PWD
Project Manager, Certified Senior Ecologist
Davey Resource Group
4 Walter E. Foran Blvd., Suite 209,
Flemington, NJ 08822
908.788.9676 ext. 4895

Via Email: Jamie.Morgan@Davey.com

**RE: Manassas Regional Airport (HEF), Proposed Part 139 Certification and Terminal Redevelopment Environmental Assessment Project, Prince William County and City of Manassas, Virginia**

Dear Ms. Morgan:

We received your letter dated August 1, 2025 regarding the initiation for consultation as required by Section 7 of the Endangered Species Act (ESA) and Section 404 of the Clean Water Act (CWA) regarding the Federal Aviation Administration's (FAA) NEPA-level Programmatic Environmental Assessment (PEA) for planned improvements at the Manassas Regional Airport in the City of Manassas and Prince William County, Virginia. As part of email correspondence with Peter Byrne, we understand that the FAA will be conducting compliance of Section 106 of the National Historic Preservation Act (NHPA) as part of the NEPA process, and that the FAA has submitted consulting party packages to the Virginia Department of Historic Resources (VDHR) and recognized Tribes that hold heritage interests in the area. Prince William County (PWC) requests to be added as a Section 106 consulting party for this undertaking. Prince William County is a Virginia Certified Local Government. As PWC has concerns about potential effects to the Bristoe Station and Kettle Run Battlefields, we also request copies of any visual and noise impact studies facilitated as part of this project. If these studies have not been conducted but are planned, we request review of the scope of work for these studies.

Thank you for the opportunity to comment on the proposed project. If you have any questions, please contact Eric Griffitts by phone at 703-792-4544 or via email at egriffitts@pwcgov.org.

Sincerely,

*Tanya Washington*

Tanya M. Washington, AICP
Director of Planning

PRML-0351

cc. Deshundra Jefferson, Chair, Prince William Board of County Supervisors
Yesli Vega, Coles District Supervisor, Prince William Board of County Supervisors
Tom Gordy, Brentsville District Supervisor, Prince William Board of County Supervisors

Christopher Shorter, County Executive, PWC
Wade Hugh, Deputy County Executive, PWC
David McGettigan, AICP, Deputy Planning Director, PWC
Tony Alston, Assistant Planning Director, Countywide Planning, PWC
Justin Patton, County Archaeologist, PWC
Eric Griffitts, Principal Planner/Heritage Resources Specialist, PWC
Clay Morris, Environmental Manager, PWC
Peter Byrne, Avion Solutions Group, LLC

**Catawba Indian Nation**
**Tribal Historic Preservation Office**
**1536 Tom Steven Road**
**Rock Hill, South Carolina 29730**

**Office 803-328-2427**

October 2, 2025

Attention: Juan Rivera
Manassas Regional Airport
10600 Harry J. Parrish Boulevard
Manassas, VA 20110

| Re. THPO # | TCNS # | Project Description |
|---|---|---|
| 2025-1293-1 | | Proposed Part 139 Certification and Terminal Redevelopment Project EA |

Dear Mr. Rivera,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions, please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

## Appendix L: Historical, Architectural, Archaeological, and Cultural Resources Documents

3. Part 139 Certification Viewshed Summary*

* VDHR response is contained in Appendix E, Consultation Reference Number 24e.

**Manassas Regional Airport (HEF) Part 139 Certification (DHR File No. 2025-4507)**

The Manassas Regional Airport Part 139 Certification and Terminal Redevelopment 16 Development Projects consist predominantly of linear development. Three (3) of the proposed development actions involve structures. The projects are:

- PEA Project #1 (Terminal Building Expansion - 21-30 feet)
- PEA Project #7 (Snow Removal Equipment Building - 30 feet)
- PEA Project # 16 (Aircraft Rescue Firefighting Building – 30 feet).

A terrain-based analysis conducted for the proposed undertaking identified potential visibility extending well beyond the airport boundary but did not account for existing standing structures (attached). Based on ground level imagery (attached), PEA Project #1, which is lower than the existing terminal (46 feet), will result in improvements that are less visible than the current terminal building. All three projects are screened from off-airport resources by existing airport structures (e.g. existing terminal, hangars, warehouses, etc.) to the northwest and southeast, commercial/industrial/manufacturing structures to the north and east, and distance to the west and southwest. Looking back (northeast) towards the airfield from Observation Road, at over 2,500 feet, individual buildings on the terminal side of the airfield are not clearly discernable from one another. Each of the planned structures will be compatible with the existing view of airfield structures as each project will be of similar height, or shorter than existing airfield structures.

The closest NRHP and VLR listed historic property to the three planned structures is Cannon Branch Fort (155-5020), a civil war archaeological site which is located over 1,200 feet north of PEA Project #7. Imagery from Wakefield Drive at PEA Project #7 back to Cannon Brand Fort does not appear to show the site. It is separated from the airfield by undulating terrain, transportation infrastructure (roadways and railroad), and vegetation. If at all visible, views of PEA Project #7 will not introduce visual elements that diminish the integrity of the property's significant historic features.

Based on the existing airfield structures, extensive commercial/industrial/manufacturing development off-airport, and lack of discernable views across the airfield, the visual APE is limited to the existing airport boundary. The auditory APE is identified as the 2040 noise contour based on the addition of commercial service (attached). Noise contours were developed for the existing condition as well as 2035, which reflects the first full year of activity after completion of the planned passenger terminal, and 2040, which reflects conditions five years from the first full year of completion.

The FAA's guidelines establish the compatibility of various land uses with differing levels of aircraft noise. These guidelines are defined in Appendix A to Title 14, Part 150 of the Code of Federal Regulations (14 CFR Part 150). All land uses exposed to aircraft noise levels below Day-Night Level (DNL) 65 decibel (dB) are considered compatible land uses. The attached 2040 No

Action Contours and 2040 With Action Contours illustrate that the 70 dBA contours remain on the airport and the 65 dBA contours extend off airport to the northeast, southwest and southeast. Parcels to the northeast are predominantly commercial, industrial, light manufacturing, and vacant land. The two parcels to the southwest are agricultural. Two of the four parcels to the southeast contain occupied residences (see table below).

| Tax ID | Owner | Address | Property Type | Age |
|---|---|---|---|---|
| Properties Northwest of the Airport within the 2040 65 dBA Noise Contour | | | | |
| **7695-04-7375** | PWC BOARD OF COUNTY SUPERVISORS | 9349 HORNBAKER RD | Vacant Lot | N/A |
| **7695-03-5461** | RESIDENCY SQUARE PLAZA INCORPORATED | 11007 NOKESVILLE RD | Commercial Shopping Center | 1998 |
| **7695-03-8930** | PINE TREE ENTERPRISE INC | 10103 RESIDENCY RD | Light Manufacturing | 1972 |
| **7695-03-6021** | 10105 RESIDENCY OWNER LLC | 10105 RESIDENCY RD | Industrial Engineering | 1968 |
| **7695-03-6110** | 10105 RESIDENCY OWNER LLC | 10105A RESIDENCY RD | Vacant Land | N/A |
| **7695-02-6295** | ALEX BUILDING LLC | 10107 RESIDENCY RD | Light Manufacturing | 1968 |
| **7695-02-6673** | ALEX BUILDING LLC | 10109 RESIDENCY RD | Light Manufacturing | 1968 |
| **7695-02-6950** | DOMINICK BUILDING LLC | 10111 RESIDENCY RD | Industrial Engineering | 1970 |
| **7695-02-7229** | ELENA BUILDING LLC | 10119 RESIDENCY RD | Light Manufacturing | 1971 |
| **7695-01-6399** | RESIDENCY ROAD LLC | 10119 RESIDENCY RD | Light Manufacturing | 2003 |
| **7695-01-8098** | DELAPLANE DEPOT LLC | 10117 RESIDENCY RD | Light Manufacturing | 2001 |
| **7695-01-7968** | CHAVES LLC | 10123 RESIDENCY RD | Light Manufacturing | 1990 |
| **7695-12-1562** | PINE TREE LAND ENTERPRISE LLC | 10100 PENNSYLVANIA AVE | Vacant Land | N/A |
| **7695-13-0541** | PINE TREE LAND ENTERPRISE LLC | 10000 PENNSYLVANIA AVE | Vacant Land | N/A |

| | | | | |
|---|---|---|---|---|
| **7695-12-5786** | ANICIRA VETERINARY CENTER | 9975 PENNSYLVANIA AVE | Veterinary Hospital | 1990 |
| **7695-12-7171** | WITHHELD | 10101 PENNSYLVANIA AVE | Vacant Land | N/A |
| **7695-12-7850** | WITHHELD | 10151 PENNSYLVANIA AVE | Vacant Land | N/A |
| **7695-12-4853** | WITHHELD | 10150 PENNSYLVANIA AVE | Warehouse | 1996 |
| Properties Southwest of the Airport within the 2040 65 dBA Noise Contour | | | | |
| **7694-24-6033** | BRISTOW BROADRUN LLC | 11713 BRISTOW RD | Agricultural | N/A |
| **7694-51-7507** | HOUSE PAUL M | 11841 BRISTOW RD | Agricultural | N/A |
| Properties Southeast of the Airport within the 2040 65 dBA Noise Contour | | | | |
| **7694-70-2672** | CROOKS MATTHEW C & ELIZABETH L | 11390 ALESSI DR | Residence | 2006 |
| **7694-80-0903** | DEVILLIER MICHAEL R & ELAINE T | 9985 FLINT ROCK RD | Residence | 2015 |
| **7693-88-5537** | HUNTERSTON ESTATES HOMEOWNERS ASSN INC | 9832 GOLDENBERRY HILL LN | Open Space | N/A |
| **7694-80-6708** | HUNTERSTON ESTATES HOMEOWNERS ASSN INC | 9812 GOLDENBERRY HILL LN | Open Space | N/A |

Property uses within the northeast and southwest portions of the 65 dBA noise contour are compatible with noise impacts greater than 65 dBA with most exceeding 70 dBA compatibility; therefore, they will not be adversely affected by the proposed undertaking. The commercial/industrial/manufacturing structures within the 65 dBA were constructed between 1968 to 2003. They are common type commercial/industrial/manufacturing structures that do not exhibit features that would qualify the structures for the NRHP. The two (2) residences to the southeast are newer structures (2006 and 2015) that do not meet the age threshold for eligibility. The 2040 Noise Contours will not introduce auditory elements that would diminish the integrity of any property's significant historic features, if any such features existed.

In accordance with 36 CFR 800.5(b), it is the FAA's determination that the proposed undertaking will result in no adverse effect to historic properties.

White House Willams Dawe House

Brentsville Historic District

Shaded Relief from USGS 1/3 Arc Second DEM

Visibility Study:

Observer Points:

- Existing Terminal (46.6 Feet High)
- New Terminal Building (21 to 30 Feet High)
- Historic Structure

Viewshed Analysis:

- Not Visible
- Visible

Legend

- Airport Property
- National Register Property
- Brentsville Historic District

0 1,000 2,000 Meters

0 2,500 5,000 Feet

AVION SOLUTIONS GROUP LLC

# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## Visibility of Existing and Proposed Terminal Buildings from DHR Buildings/Structures

*Project 23-98001.002, Version: 12/14/2025 @ 3:11:50 PM*

White House Willams Dawe House

Brentsville Historic District

Shaded Relief from USGS 1/3 Arc Second DEM

Visibility Study:

Observer Points:

- Existing Terminal
- Proposed ARFF Bldg
- Proposed SRE Bldg
- Historic Structure

Viewshed Analysis

- Not Visible
- Visible

Legend

- Airport Property
- National Register Property
- Brentsville Historic District

0 1,000 2,000 Meters

0 2,500 5,000 Feet

AVION SOLUTIONS GROUP LLC

# The Manassas Regional Airport (HEF) FAR Part 139 Certification and Terminal Redevelopment Program

## Visibility of Proposed SRE Building and Proposed ARFF Building from DHR Buildings/Structures

*Project 23-98001.002, Version: 12/14/2025 @ 3:13:21 PM*


Target
15
16
1
Cannon Branch Fort
2
5
SRE
3
4
13
ARFF
6
APP Jet Center - Manassas
7
11
8
9
Terminal
10
234
Green Front Furniture
14
12
Manassas Regional Airport
Bristow Rd
CHEVALLE
Google Earth

Photo 1 - Facing South Towards SRE Building From Wakeman Drive



Photo #2 - Facing Northeast from SRE Location Along Wakemine Drive



Photo #3 - Facing Southwest Toward SRE Building Location from Wakeman Drive



Photo #4 - Facing Southeast from the SRE Building Towards the Terminal Along Wakeman Drive



Photo #5 - Facing Northwest from SRE Location Along Wakeman Drive



Photo #6 - Located in Front of the Terminal Looking Northeast Along Harry J Parish Blvd Towards the ARRF and SRE Building Locations






Photo #7 - Looking Southwest from the Terminal Expansion Area Towards the West Side of the Airfield

Photo #8 - Looking Southwest Towards the Existing Terminal from the Parking Area



Photo #9 - Looking Southwest from the Terminal Expansion Area Towards the West Side of the Airfield



Photo #10 - Looking Southeast Away from the Terminal Building Along Harry J Parrish Blvd



Photo #11 - Looking Northeast from the Terminal Along the Airport Entrance



Photo #12 - Looking Northwest Along Wakeman Drive Back Towards the Terminal



Photo #13 - Looking Southwest from the Prince William Pkwy Towards the Airport

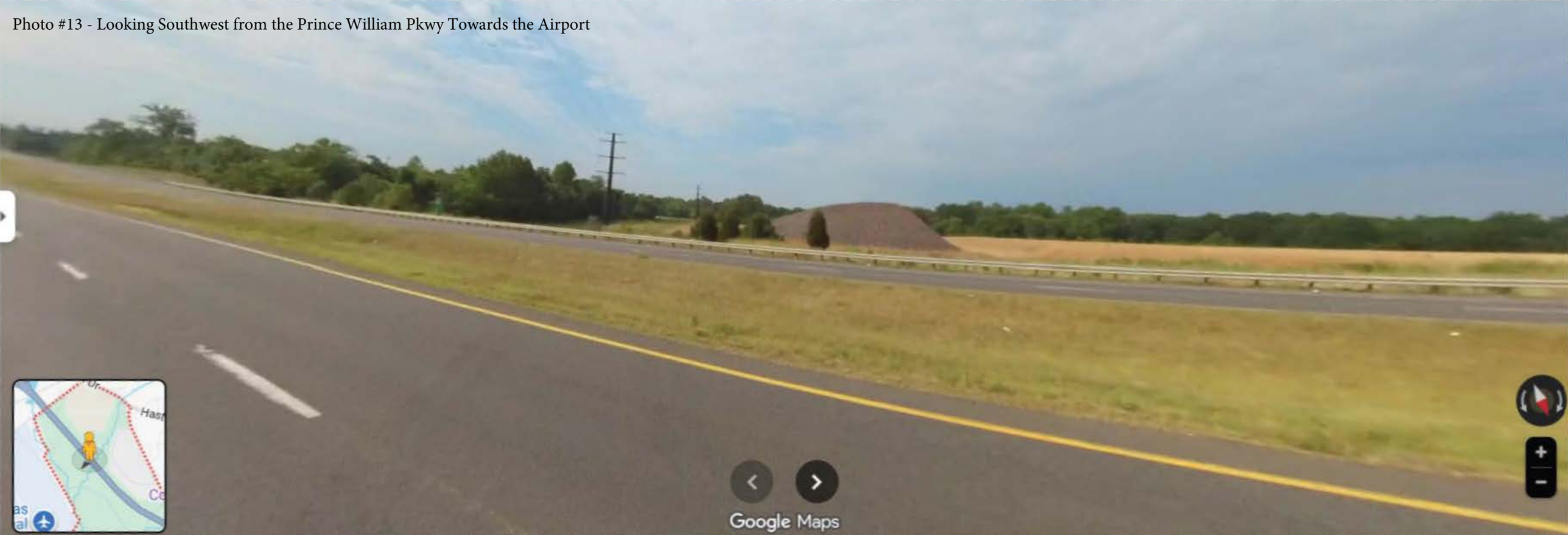


Photo #14 - Looking Northeast Across the Airfield from Observation Road on West Side of the Airfield

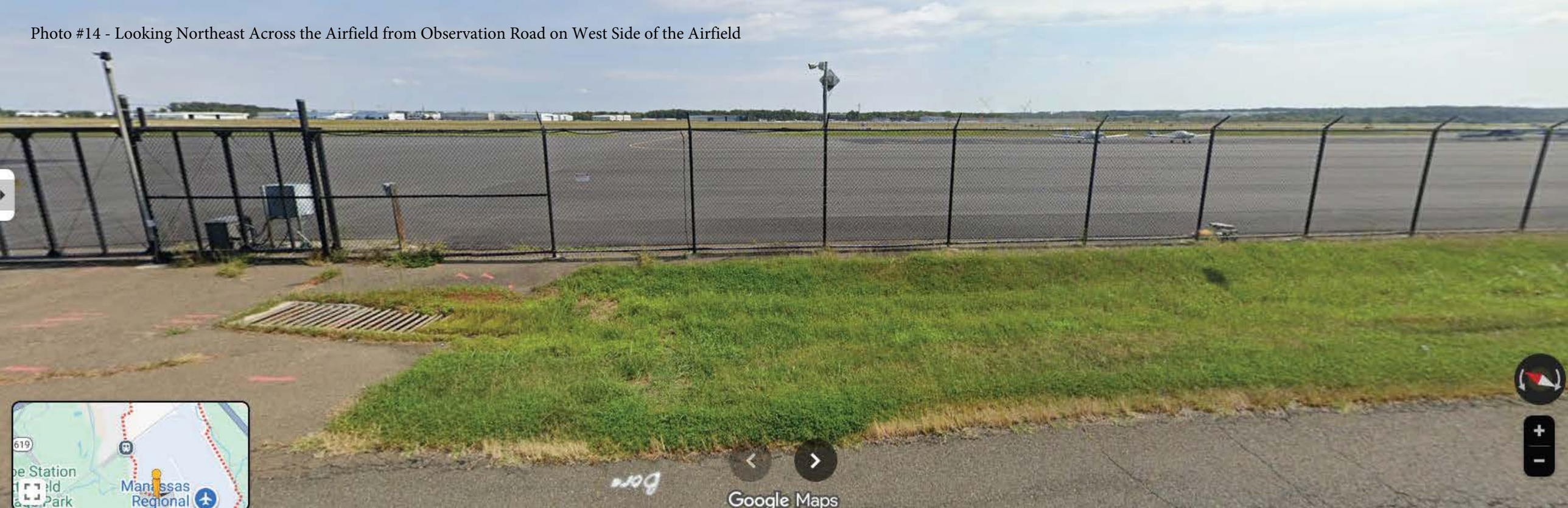


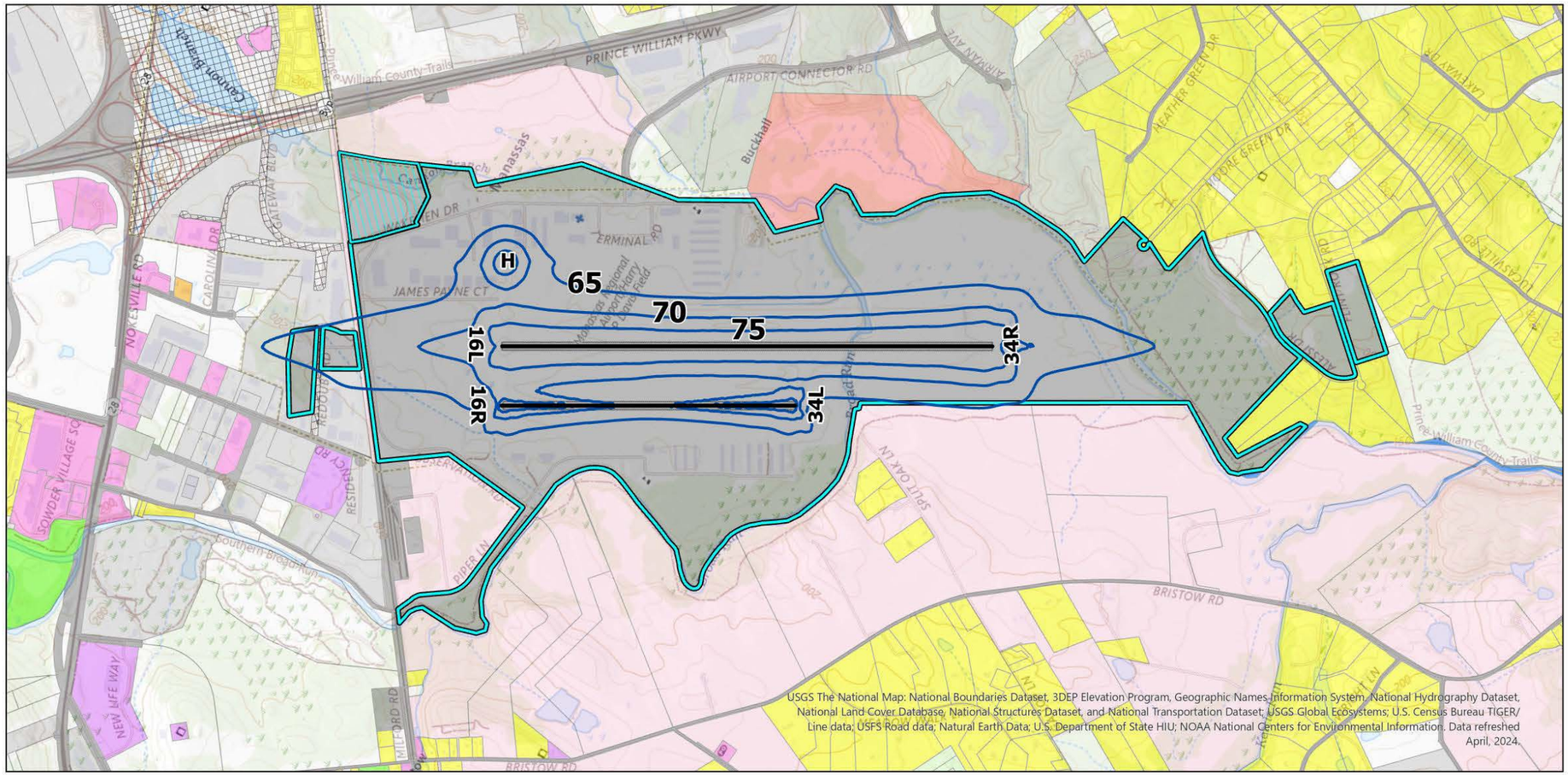
Photo # 15 - Looking Southeast Along Residency Road Illustrating Manufacturing Development



Photo # 16 - Looking South Along Residency Road Illustrating Industrial Development



**2040 No Action Alternative DNL 65-75 dB Contours**




Runway
2040 No Action DNL Contours (dBA)
Airport Property
Amazon Data Center Parcel
Agriculture
Airport
Commercial
Golf Course
Industrial
Institutional
City of Manassas
Open Space
Residential
Rail
Recreational
School (Private)
Utility
State Land
Right-of-Way
Water

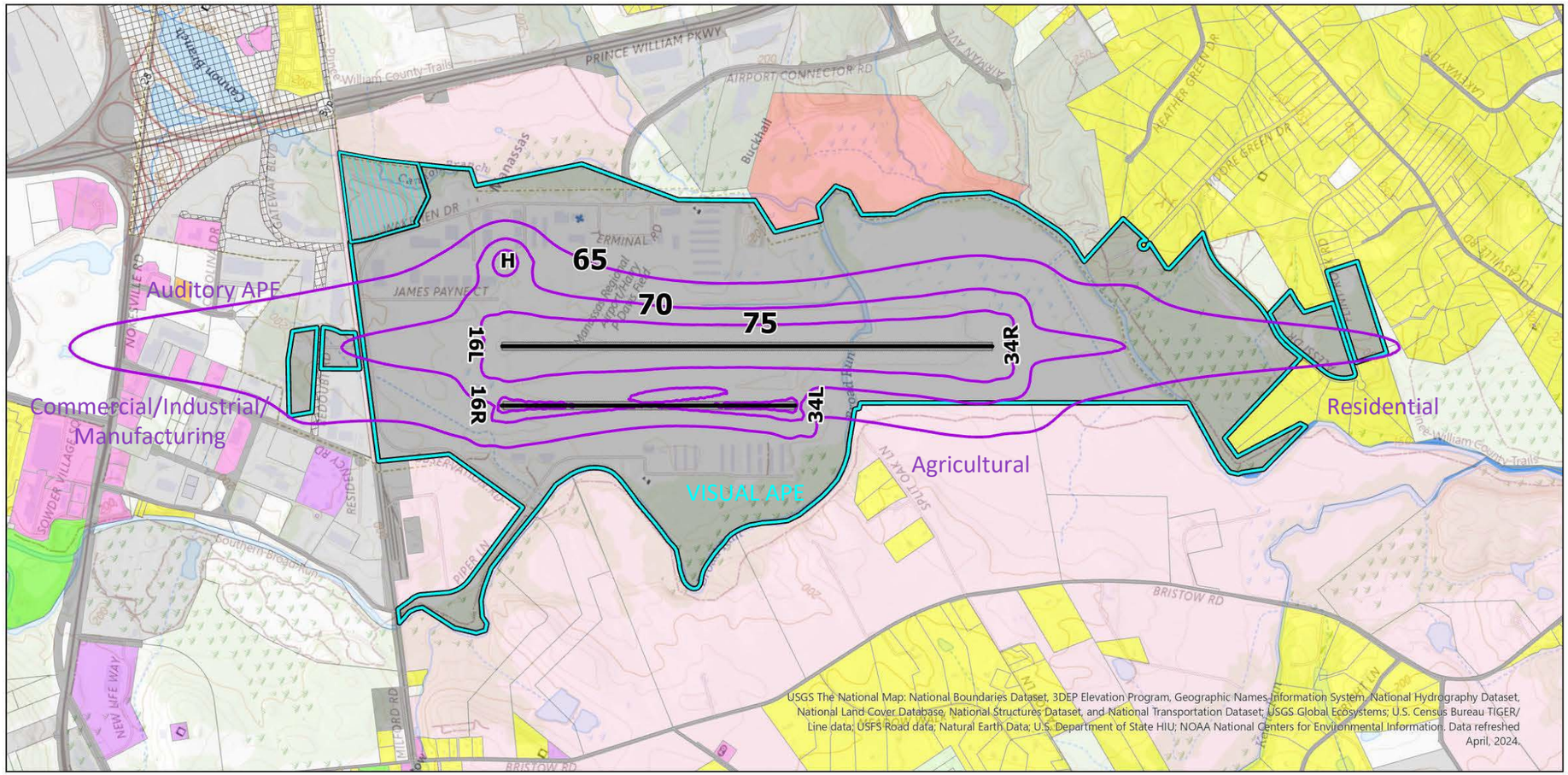
N

0 0.25 0.5 Miles

**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**

Sources: Aviation Environnemental Design Tool (Version 3f), CMT, Inc., 2024.

**2040 Proposed Action Alternative DNL 65-75 dB Contour**




- Runway
- 2040 Proposed Action DNL Contous (dBA)
- Airport Property
- Amazon Data Center Parcel
- Agriculture
- Airport
- Commercial
- Golf Course
- Industrial
- Institutional
- City of Manassas
- Open Space
- Residential
- Rail
- Recreational
- School (Private)
- Utility
- State Land
- Right-of-Way
- Water

N

0 0.25 0.5 Miles

**Manassas Regional Airport PART 139 Certification and Terminal Redevelopment**