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Project Tiger – Airpark Site
Individual Permit Request

November 2019

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EXECUTIVE SUMMARY

On behalf of Hanover County Economic Development (the Applicant), Timmons Group is submitting this Individual Permit Request for site development that will serve as a regional distribution center, to include appurtenance facilities (roadways, utilities, stormwater, fencing, etc.) at the Airpark Site (Site, Project) located in Hanover County. The proposed project calls for the development of approximately 217 acres in order to meet the current and future needs of a client with whom Hanover County Economic Development has a letter of intent. This project will result in a substantial capital investment and job creation.

The Airpark Site has been identified as the preferred location for development based on location, size, accessibility, offsite improvements, and other characteristics that facilitate the end user's goals. Based on this the Applicant has worked with the company's consulting engineers to place the project on the site while minimizing environmental impacts.

The purpose of the proposed project is to provide a site that will serve as a secure regional grocery distribution center that will (a) serve existing retail locations, (b) relieve transportation burdens from existing supply centers, and (c) provide a base of support to serve future retail locations in the mid-Atlantic region.

The required site components include an approximately 1.1 million contiguous square feet (sq. ft) facility developed in a "L" shape that will house a dry warehouse, refrigerated warehouse, return center, food manufacturing facility, and offices, with the ability to expand with future growth, as well as parking and staging areas for tractor trailers, parking for associates, and ancillary support buildings (i.e. fleet maintenance, fleet fueling, dispatch and site security).

Based on the proposed project layout, approximately 5.34 acres of jurisdictional waters of the United States (WOUS) will be permanently impacted by the proposed project. No temporary impacts are proposed. Impacts will result from the development of building pads, parking areas, and proposed road crossings. The current proposed layout provides sufficient area to construct the approximately 1.1 million square feet facility, as well as position the facility along the topographic plateau found onsite which will serve to minimize secondary impacts. Fill slopes will be graded to a 3:1 slope and will be hydroseeded and matted to stabilize the site and prevent secondary impacts to downstream receiving waters.

Compensatory mitigation for these unavoidable impacts will be achieved through the purchase of off-site mitigation credits from a Wetland and Stream Mitigation Bank approved for use in the Pamunkey Watershed (Hydrologic Unit Code 02080106). Wetland mitigation credits will be purchased at a ratio of 2:1 for PFO wetlands (9.92 credits), a ratio of 1:1 for PEM wetlands (0.23 credits). Additionally, 1,383 linear feet (0.14 acres) of jurisdictional ditch will be impacted as a result of project implementation. The applicant proposes no mitigation for these ditch impacts. The total compensation requirement for wetland impacts onsite is 10.15 credits.

PROJECT TIGER
PERMIT REQUEST

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1.0 PROJECT INFORMATION SHEET

General

Project Name:	Project Tiger
State:	Virginia
County:	Hanover County
Latitude:	37.711435°
Longitude:	-77.423739°
Subject Property Size:	+/- 217.33 acres
HUC Code:	02080106 (Pamunkey Watershed)
Waterbodies:	Palustrine Forested (PFO) wetlands, Palustrine Scrub-shrub (PSS) wetlands, and Palustrine Emergent (PEM) wetlands

Corresponding Information

USGS Quad:	Yellow Tavern
USDA Soils Map:	NRCS Web Soil Survey - Hanover County
Proposed Use:	Development as a regional distribution facility
Owner/Applicant Name:	Hanover County Economic Development
Address:	8200 Center Path Lane Mechanicsville, VA 23116
Contact:	Linwood Thomas
Consultant Name:	Timmons Group
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2.0 INTRODUCTION

On behalf of Hanover County Economic Development (the Applicant), Timmons Group is submitting this Individual Permit Request for site development that will serve as a regional distribution center, to include appurtenance facilities (roadways, utilities, stormwater, fencing, etc.) at the Airpark Site (Site, Project) located in Hanover County (see Figure 1: Vicinity Map). The proposed project calls for the development of approximately 217 acres in order to meet the current and future needs of a client with whom Hanover County Economic Development has a letter of intent. This project will result in a substantial capital investment and job creation.

A good standard of living and quality of life requires ready access to and availability of affordable groceries, including fresh fruits and vegetables. The proposed distribution center will ensure efficient distribution of groceries by timely product sourcing and packaging as well as efficient warehousing and distribution for the groceries.

Food warehousing and distribution facilities and systems must be secure, well-designed, and well-managed to ensure food safety. In general, grocery sales are a very low margin market. Therefore, efficiency of operations and minimization of operating costs are crucial to company viability and success. Considering the average life span on a distribution center is 75 years or more, inefficiencies in site selection, layout, or design of a distribution center would have long lasting negative impacts.

Efficiency of operation begins with the selection of the geographical area for the campus. Current retail growth projections show the center of gravity solution to be the Richmond metro area.

Transportation is a key component of service and quality. Deliveries for perishable produce items are often scheduled daily to ensure the highest quality and longest shelf life. Long-distance deliveries may require longer order lead times, which can result in less reliable forecasts, shorter item shelf life, increased damage to sensitive products and increase shrink at the store

When utilization of a regional distribution facility nears 90%, a facility may not be able to meet store growth or unexpected fluctuations in demand. Achieving over ~95% utilization is not ideal because facilities require free space to accommodate item changes and maintain efficient day-to-day operations. At 100% utilization, a facility would be in gridlock with no room to receive supplier deliveries. A typical regional distribution center can efficiently serve 45-50 retail locations. Following current trends, the end user will outgrow their existing supply potential within the next five years.

The Airpark Site has been identified as the preferred location for development based on location, size, accessibility, offsite improvements, and other characteristics that facilitate the end user's goals. Based on this the Applicant has worked with the company's consulting engineers to place the project on the site while minimizing environmental impacts.

3.0 SITE DESCRIPTION

3.1 Site Location

The approximately 217-acre site is located in Hanover County southwest of the intersection of Ashcake Road and Sliding Hill Road. The Site is surrounded by agricultural and forest land, as well as Ashcake Road to the north, residential development and forest, as well as Sliding Hill Road to the east and south, and the Hanover County Municipal Airport and industrial/commercial development to the West (see Figure 1: Vicinity Map). The project lies within the Pamunkey Watershed (Hydrologic Unit Code 02080106) (see Figure 2: Hydrologic Unit Code Map).

3.2 Site Conditions

The Site is comprised of all or a portion of 22 separate tax parcels owned by Airpark Associates and generally consists of mid to late successional mixed pine-hardwood forest (see Figure 3: Environmental Inventory Map). A wetland delineation was previously conducted to identify the presence and location of jurisdictional wetlands and streams within the Project limits in accordance with the guidance provided by the U.S. Army Corps of Engineers (COE) 1987 Delineation Manual and subsequently issued COE guidance. The wetland delineation was reconfirmed on October 30, 2019 (COE Project number 2012-0369) (See Figure 4: Confirmed Waters of the United States (WOUS) Map and Appendix B: Preliminary Jurisdictional Determination Information).

The Site consists of generally flat topography ranging from topographic highs of approximately 200 feet above mean sea level (AMSL) in the central portion of the site sloping downward in all directions to topographic lows of approximately 189 feet AMSL along the western site boundary. The wetlands within the project area are dominated by palustrine forested (PFO) wetlands but also contains a small percentage of palustrine scrub shrub (PSS) and palustrine emergent (PEM) wetlands. A small amount of jurisdictional ditches are also found onsite. Wetlands within the project area persist in the natural depressions within the forested areas and alongside the large drainage system that bisect the southern portion of the Site (see Figure 4: Confirmed WOUS Map).

4.0 PURPOSE AND NEED

The purpose of the proposed project is to provide a site that will serve as a secure regional grocery distribution center that will (a) serve existing retail locations, (b) relieve transportation burdens from existing supply centers, and (c) provide a base of support to serve future retail locations in the mid-Atlantic region.

Currently the end user has operating retail locations as far south as Virginia Beach, Virginia, with a store set to open in in West Cary, North Carolina in 2020. The nearest distribution facility to these stores is located in central Pennsylvania approximately 370 road miles from the Virginia Beach location and over 440 road miles from the planned West Cary location. With five (5) total stores planned to open in North Carolina as well as six (6) in the D.C. Metro area within the next 5 years the need exists to develop a regional distribution center that can efficiently supply the anticipated number of retail locations in the rapidly growing mid Atlantic market.

It is not feasible to supply the increasing number of mid-Atlantic store locations from the central Pennsylvania Regional Distribution Center. Therefore, the need exists to develop a new regional distribution center that can serve current and planned stores in the mid-Atlantic region in a logistically responsible and cost-efficient manner. Following current trends, the end user will outgrow their existing supply potential within the next five years.

5.0 ALTERNATIVE ANALYSIS

5.1 Introduction

Hanover County offers convenient access to Interstate 95 as well as ancillary access to Interstate 295 and Interstate 64, allowing ease of travel and shipment in all directions. The county also offers an ample workforce that will be able to staff a facility of this size. By 2026 the facility is projected to require 700 employees to operate efficiently at full capacity. Additionally, by locating the site in Hanover County the end user will realize increased distribution efficiency. Based on over the road transportation costs to/from a site in Hanover, the end user will see a return on investment within 8 years. Based on these factors the end user identified Hanover County as the ideal geographic location for the development of a new regional distribution facility.

Development of the regional distribution facility in an innovative manner will allow for maximized efficiency in day to day operations, which in the long-term, will provide an increased profit margin, while also reducing the required building footprint. Facility components include an approximately 1.1 million contiguous square feet (sq. ft) facility developed in a "L" shape that will house a dry warehouse, return center, food manufacturing facility, and offices, with the ability to expand with future growth, as well as parking and staging areas for tractor trailers, parking for associates, and ancillary support buildings (i.e. fleet maintenance, fleet fueling, dispatch and site security). A different layout would result in a less efficient operation as well as require a larger building footprint because various services such as security and employee breakrooms would need to be duplicated.

Based on the identified geographic location and required site design multiple alternatives including: (a) The no-action alternative, (b) off-site alternatives, and (c) on-site alternatives were evaluated to determine the Least Environmentally Damaging Practicable Alternative (LEDPA). After consideration of available alternatives to meet the needs of the project, the Preferred Alternative as proposed, is considered the Least Environmentally Damaging Practicable Alternative (LEDPA).

Considering the average life span of a regional distribution center is 75 years or more, inefficiencies in site selection, layout, or design would have long lasting negative impacts. The criteria used in identifying the preferred alternative included the following:

- Retail growth projections determine center of gravity solution
- Must efficiently serve current and future grocery stores in the Region
- Primary site access within 3 road miles of Interstate 95
- Ancillary access via Interstate 95 to Interstate 295/64
- At least 130 acres of correctly configured construction pad
- Availability of Alternative Routes (in the event of disruption of the primary route)
- Ease of utility infrastructure access to support regional distribution center (water/sewer/power)

- Convenient access to sufficient labor force
- Magnitude of WOUS and RPA impacts

5.2 No-Action Alternative

The No-Action Alternative, which would avoid all impacts to aquatic resources, is not a viable option given the purpose and need of the Project is to (a) serve existing retail locations, (b) relieve transportation burdens from existing supply centers, and (c) provide a base of support to serve future retail locations in the mid-Atlantic region.

Under the No Action Alternative, the proposed development of the distribution center would not result in impacts to Jurisdictional Waters of the U.S. and would not require the issuance of a 404/401 Individual Permit. The end user evaluated the possibility of delaying investment in a new facility through SOS changes and expansion of existing facilities. However, it was determined that the central Pennsylvania regional supply center constraints would require expansion of the existing facility to meet demand. Since mid-Atlantic growth is expected to continue, expanding this facility would sub-optimize transportation costs, especially when having to navigate through traditionally congested areas such as the D.C. metro area. In addition, store service and product quality would be at risk due to the long distances and transportation costs would exceed all other alternatives evaluated.

5.3 Offsite Alternatives

Several parcels within Hanover County were evaluated as potential project locations for development as a regional distribution facility. Three practicable sites were evaluated based on the criteria described in Table 2 below. Because a wetland delineation and perennial stream assessment/resource protection area determination was not feasible for all sites evaluated during alternatives analysis, the aquatic resources for the Flippo and Blenheim sites were approximated based on National Wetland Inventory and National Hydrography Dataset mapping.

Alternative 1, referred to as the Flippo Site, is located southwest of the intersection of Interstate 95 and Kings Dominion Highway (see Figure 6: Offsite Alternative, Flippo Site). The site consists entirely of pine plantation on a single tax parcel. The zoning for the Flippo site is currently A-1, as such a conditional use permit or rezoning proffer may need to be secured. While site access and road infrastructure improvements are sub-par the proximity to Interstate 95 makes the Flippo Site a viable option. However, the site is in close proximity to the Kings Dominion theme park and would likely utilize the same access junction to Interstate 95. As such the potential exists for increased congestion and reduced traffic safety when accessing the interstate. Approximately 15 acres of jurisdictional wetlands would be permanently impacted as a result of project implementation at the Flippo Site. At a rate of $35,000 per wetland mitigation credit required mitigation costs will be approximately $694,750 more expensive than the preferred alternative. Due to its current use as pine plantation this option would include 130+ acres of tree clearing and the construction of sewer, waterline, and electricity infrastructure to the interior of the site.

Alternative 2, referred to as the Blenheim Site, is located off of Hickory Hill Road east of Interstate 95 and Ashland, Virginia (see Figure 7: Offsite Alternative, Blenheim Site). The majority of the site consists of mixed pine hardwood forest, as well as clear cut land. The site consists of one parcel totaling approximately 505.9 acres and is zoned as A-1, as such a conditional use permit or rezoning proffer may need to be secured. Additional constraints that would hinder development

of the Blenheim Site include significant resource protection area onsite, as well as an overhead electrical easement that bisects the Site. The most practicable site layout would result in approximately 33.9 acres of wetland impacts according to National Wetland Inventory mapping. This would result in an increase of approximately $2,017,750 in required mitigation costs compared to the preferred alternative.

The Airpark site was determined to provide the end user the most value based on the evaluation criteria examined. This site provides adequate area to develop a properly configured regional distribution facility while minimizing impacts to aquatic resources as compared to the offsite alternatives evaluated. Ancillary benefits provided by the Airpark Site include a secondary access point to/from Interstate 95 within 3 miles, no potential impacts to resource protection areas, public support, the closest access to Interstate 295/64, and the improvement of offsite utilities that will serve the area.

Table 1: Criteria Evaluated for Project Alternatives

	Preferred Alternative	Flippo Site	Blenheim Site
Primary site access within 3 road miles of Interstate 95	X	X	
Must efficiently serve current and future grocery stores in the Region	X	X	X
Minimized wetland impact and mitigation costs	X		
Can accommodate at least 130 acres of correctly configured construction pad	X	X	X
No potential stream or RPA impacts	X		
Availability of Alternate Routes (in the event of disruption of the primary route)	X	X	
Properly Zoned			
Access to connector/dissipater roads without need for improvement	X	X	
Sufficient labor force	X	X	X
Avoids routing through congested areas to reach primary roads	X		X
Ease of utility access (Sewer, power, water)	X	X	

5.4 Onsite Alternatives

Due to scattered aquatic resources throughout the Site, impacts to waters of the U.S. are unavoidable, and therefore, development could not occur without an individual permit. Numerous on-site layouts were examined to develop the regional distribution center in a manner that avoids and minimizes impacts to environmentally sensitive areas to the maximum extent practicable, while meeting configuration requirements necessary to provide efficient long- term operation of the facility. These components must be contiguous in order to function, adjusting the layout to

completely avoid WOUS onsite would require separation of these components and would not be suitable for the proposed project.

The onsite alternative layout was analyzed to determine the least environmentally damaging practicable alternative (LEDPA), while meeting the needs of the proposed development.

The selected onsite alternative would realize the purpose and need of the project in the required configuration but would have an increased impact on the natural environment through an additional 1.06 acres of jurisdictional wetland impacts (see Figure 8 Onsite Alternative Layout). This would increase mitigation costs by approximately $80,500. Additionally, the onsite alternative would not provide as much remaining developable land upon project completion. This would reduce the potential for any future development onsite as the end user continues to expand into the mid-Atlantic market.

5.5 Preferred Alternative

The preferred alternative layout provides sufficient area to construct the proposed distribution center in such a way which will serve to minimize impacts to streams and wetlands, avoid any and all floodplain and RPA impacts, while not encroaching on existing easements, and will require the least amount of cut and fill based on the existing percent slope.

The proposed regional distribution facility at the Airpark Site was determined to be the Least Environmentally Damaging Practicable Alternative (LEDPA) as it meets the necessary site requirements while minimizing impacts to valuable environmental resources compared to other alternatives. The solution also provides long-term capacity to support future growth in the mid-Atlantic region (see Figure 5: Preliminary Jurisdictional Waters of the U.S. Impacts Map).

5.6 Conclusion

The proposed facility at the Airpark Site was determined to be the most practicable long-term solution by providing the largest benefit to the end user by most efficiently addressing the needs of the project while providing minimized adverse effects. The proposed facility relieves capacity constraints at existing regional distribution centers, reduces transportation costs, meets site requirements as a centralized location that can support growth, and is in close proximity to interstate systems that facilitate efficient transportation. This option enables end user to provide the expected level of service, quality and lead times throughout their network and allows for efficient delivery. Finally, the proposed facility at Airpark provides long-term capacity to support future growth and provides support to the existing networks during unexpected events.

6.0 AVOIDANCE AND MINIMIZATION

Impacts to jurisdictional features were avoided and minimized to the maximum extent practicable by incorporating resourceful site selection, site planning, including the utilization of the confirmed wetland delineation to adjust the layout to avoid and minimize impacts. After the wetlands were delineated, an engineering plan was developed to meet all needs at the proposed distribution center, while minimizing impacts to Waters of the U.S. The proposed location results in the least impacts to Waters of the U.S. while realizing the purpose and need of the project. The current proposed layout provides sufficient area to construct the approximately 1.1 million square feet facility.

Fill slopes will be graded to a 3:1 slope and will be hydroseeded and matted to stabilize the site. Incorporating steeper slopes (i.e. 2:1 or 2.5:1) was analyzed for the project. However, given the high level of traffic anticipated for the proposed roadways (i.e. tractor trailer, forklift, etc.), 3:1 slopes were utilized for the project in order to safeguard the site from any potential slope failures which could result in massive and costly disruption to operations. Based on the preliminary geo-technical reports completed for the Project, 3:1 slopes were selected to ensure the site grading would work within the impact envelope, given that the soils may not be able to structurally withstand steeper slopes. Furthermore, it was determined that a 3:1 slope provides and increased level of safety for vehicles and pedestrians in the event that either leave the travel way.

The proposed Project has minimized the possibility of indirect impacts through implementation of planning practices which reduce the influence of direct impacts on downstream water quality. Efforts to reduce indirect impacts generally include:

- Avoidance/minimization of direct wetlands/waters impacts through innovative site planning and utilization of confirmed wetland delineation
- Minimization of partial wetland/stream impacts
- Minimization of impacts to primary drainage ways and floodplains
- Strict adherence to all state and local stormwater and sediment control measures

In order to avoid secondary impacts, a project-specific Erosion and Sediment Control (ESC) plan will be prepared in accordance with the Virginia Erosion & Sediment Control Law (VESCL) and Regulations (VESCR) and the most current version of the Virginia Erosion & Sediment Control Handbook. All regulated land-disturbing activities associated with the Project, including on- and off-site access roads, staging areas, borrow areas, stockpiles, and soil intentionally transported from the Project Area will be covered by the project specific ESC plan. During construction activities, these measures will be inspected and maintained throughout the life of the construction activity providing for enhanced protection of the jurisdictional areas.

7.0 JURISDICTIONAL IMPACTS

The preferred alternative located at the Airpark site meets the minimum site requirements for the distribution center and was determined to be the most practicable long-term solution to address the Applicant's purpose and need while effectively minimizing adverse impacts to the natural environment. Project implementation would require permanent impacts to 5.34 acres of WOUS (see Figure 5: Preliminary Jurisdictional Waters of the U.S. Map).

The development of the Project will require unavoidable permanent impacts to 4.96 acres of PFO wetlands, 0.23 acres of PEM wetlands, and 1,383 linear feet (0.14 acres) of jurisdictional ditch. The permanent wetland and impacts are associated with grading, cut, and fill activities required for the construction of the proposed buildings and parking areas, as well as roadway and utility infrastructure development. A map showing the location of the jurisdictional impacts is shown on Figure 5: Preliminary Jurisdictional Waters of the U.S. Impact Map. Additionally, representative cross sections are provided as Appendix F: Wetland Impacts Cross Sections Exhibit. The total impacts for the proposed Project are described in Table 2 below.

Table 2: Least Environmentally Damaging Practicable Alternative - Impact Description

Impact ID	Wetland/Water Impact Decription*	Wetland Impact Area		Ditch Impact Area		Apprx. Vol. of Fill below OHW	Cowardin Classification of Impacted Wetland/Water	Average Stream Flow	Drainage Area	DEQ Classification of Impacted Resource
(1,2, etc.)		s.f.	acres	L	s.f.	c.y.	(PEM, PSS, etc.)	c.f.s.	sq. mile	
1	F,NT,PE,V	6,075	0.14				PFO	n/a	n/a	VII
2a	F,NT,PE,V	2,650	0.06				PEM	n/a	n/a	VII
2b	F,NT,PE,V	8,496	0.20				PFO	n/a	n/a	VII
3a	F,NT,PE,V	5,707	0.13				PFO	n/a	n/a	VII
3b	F,NT,PE,V			161	574		Jurisdictional Ditch	n/a	n/a	VII
4	F,NT,PE,V	3,085	0.07				PFO	n/a	n/a	VII
5a	F,NT,PE,V	35,894	0.82				PFO	n/a	n/a	VII
5b	F,NT,PE,V	65,374	1.50				PFO	n/a	n/a	VII
6a	F,NT,PE,V	15,023	0.34				PFO	n/a	n/a	VII
6b	F,NT,PE,V			198	505		Jurisdictional Ditch	n/a	n/a	VII
7	F,NT,PE,V	6,192	0.14				PFO	n/a	n/a	VII
8	F,NT,PE,V	1,524	0.03				PFO	n/a	n/a	VII
9	F,NT,PE,V			704	3,763		Jurisdictional Ditch	n/a	n/a	VII
10	F,NT,PE,V	10,252	0.24				PFO	n/a	n/a	VII
11	F,NT,PE,V	9,003	0.21				PFO	n/a	n/a	VII
12	F,NT,PE,V			320	1,378		Jurisdictional Ditch	n/a	n/a	VII
13	F,NT,PE,V	1,491	0.03				PFO	n/a	n/a	VII
14	F,NT,PE,V	1,969	0.05				PFO	n/a	n/a	VII
15	F,NT,PE,V	23,929	0.55				PFO	n/a	n/a	VII
16	F,NT,PE,V	1,956	0.04				PFO	n/a	n/a	VII
17	F,NT,PE,V	1,308	0.03				PFO	n/a	n/a	VII
18	F,NT,PE,V	2,181	0.05				PEM	n/a	n/a	VII
19	F,NT,PE,V	1,874	0.04				PFO	n/a	n/a	VII
20	F,NT,PE,V	10,892	0.25				PFO	n/a	n/a	VII
21	F,NT,PE,V	3,465	0.08				Jurisdictional Ditch	n/a	n/a	VII
22a	F,NT,PE,V	5,247	0.12				PEM	n/a	n/a	VII
22b	F,NT,PE,V	2,734	0.06				PFO	n/a	n/a	VII
Total		**226,321**	**5.20**	**1,383**	**6,220**					

* Use all that apply: F-fill, EX-excavation, S-Structure, T-tidal, NT-non-tidal, TE-temporary, PE-permanent, PR-perennial, IN-intermittent, EP-ephemeral, SB-subaqueous bottom, DB-Dune/Beach, IS-hydrologically isolated, V-vegetated, NV-non-vegetated, MC-mechanized clearing of PFO

8.0 COMPENSATORY MITIGATION

Compensatory mitigation for these unavoidable impacts will be achieved through the purchase of off-site mitigation credits from a Wetland and Stream Mitigation Bank, which is approved for use in the Pamunkey Watershed (Hydrologic Unit Code 02080106). The applicant is proposing no mitigation for the impacts to jurisdictional ditches on site. Per 9 VAC 25.210-80 B. 1.h(1) the required compensatory mitigation was determined by first totaling the square footage of wetland impacts by Cowardin Classification then converting to acres and rounding to the nearest hundredth decimal in order to find the impact acreage per classification. A ratio of 2:1 and 1:1 for PFO and PEM, respectively, was applied to the impact acreages to determine the total compensatory mitigation per classification. Wetland mitigation credits will be purchased at a ratio of 2:1 (9.92 credits) for PFO wetland impacts and 1:1 for PEM wetland impacts (0.23 credits) (see Appendix C: Wetland Mitigation Credit Availability Letter). Impacts resulting from the proposed project require 10.15 wetland mitigation credits as detailed by Table 3 below.

Table 3: Required Compensatory Mitigation			
Cowardin	**s.f.**	**acres**	**Credits**
PFO	216,241	4.96	9.92
PEM	10,078	0.23	0.23
Total Compensation:	***226,319***		***10.15***

9.0 SUPPORTING SITE INFORMATION

9.1 Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource List, Virginia Fish and Wildlife Information Service (VaFWIS) database, and Department of Conservation and Recreation (DCR) National Heritage Resources were reviewed for likely populations of threatened and endangered (T&E) species on the project site, within a two (2) miles radius around the Project Area.

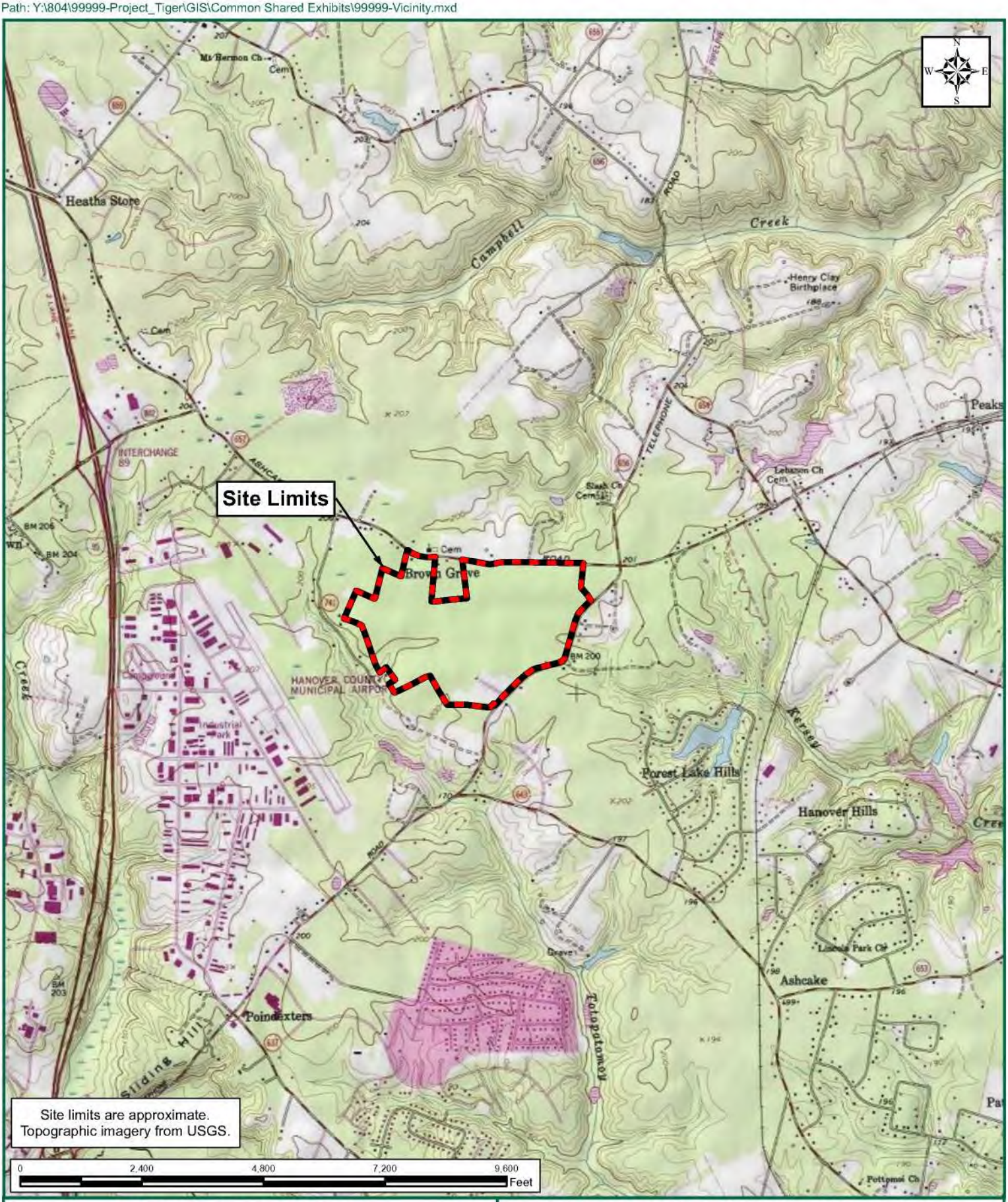
The IPaC search results identified the Northern Long-Eared Bat (*Myotis septentrionalis)* as a federally threatened/ state threatened (FTST) species having potential habitat within the area. Review of available VDGIF NLEB location mapping indicates there are no known Northern Long-eared Bat winter hibernacula/maternity roosts within the vicinity of the site. The Applicant is relying upon the findings of the 1/5/2016 Programmatic Biological Opinion for Final 4(d) Rule on the Northern Long-Eared Bat and Activities Exempted from Take Prohibitions to fulfill our project-specific section 7 responsibilities. Swamp-pink is known to occur in a county adjacent to Hanover. An onsite survey was conducted for Swamp-pink (*Helonias bullata)* by Seedbox Consulting on June 12, 2019. It was determined that Swamp-pink was not present onsite. Additionally, the habitat onsite is not of a sufficient quality to maintain a population of Swamp-pink (see Appendix D: Threatened and Endangered Species Information).

9.2 Cultural Resources

A database search of the Virginia Cultural Resource Information System (VCRIS) identified multiple archaeological and architectural resources within close proximity (0.25 miles) to the Project Area. Only one resource (DHR ID: 042-0033) has been listed in the National Register of Historic Places (NRHP). One archaeological resource (44HN0326) has been identified onsite and has not been evaluated for listing on the NRHP. A Phase 1 Cultural Resource Survey was conducted by Gray and Pape in 1996, which recommended further study of the site prior to development. Currently, a Phase 1 study is being conducted by Dutton and Associates and will be made available upon report completion (see Appendix E: Cultural Resources Information).

FIGURES

Path: Y:\804\99999-Project_Tiger\GIS\Common Shared Exhibits\99999-Vicinity.mxd



PROJECT TIGER AT AIRPARK

HANOVER COUNTY, VIRGINIA

FIGURE 1: VICINITY MAP

TIMMONS GROUP

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TIMMONS GROUP JOB NUMBER: *99999*
PROJECT STUDY LIMITS: *217.34 ACRES*
LATITUDE: *37.712197*
LONGITUDE: *-77.423427*

U.S.G.S. QUADRANGLE(S): *YELLOW TAVERN*
DATE(S): *1975*
WATERSHED(S): *PAMUNKEY*
HYDROLOGIC UNIT CODE(S): *02080106*

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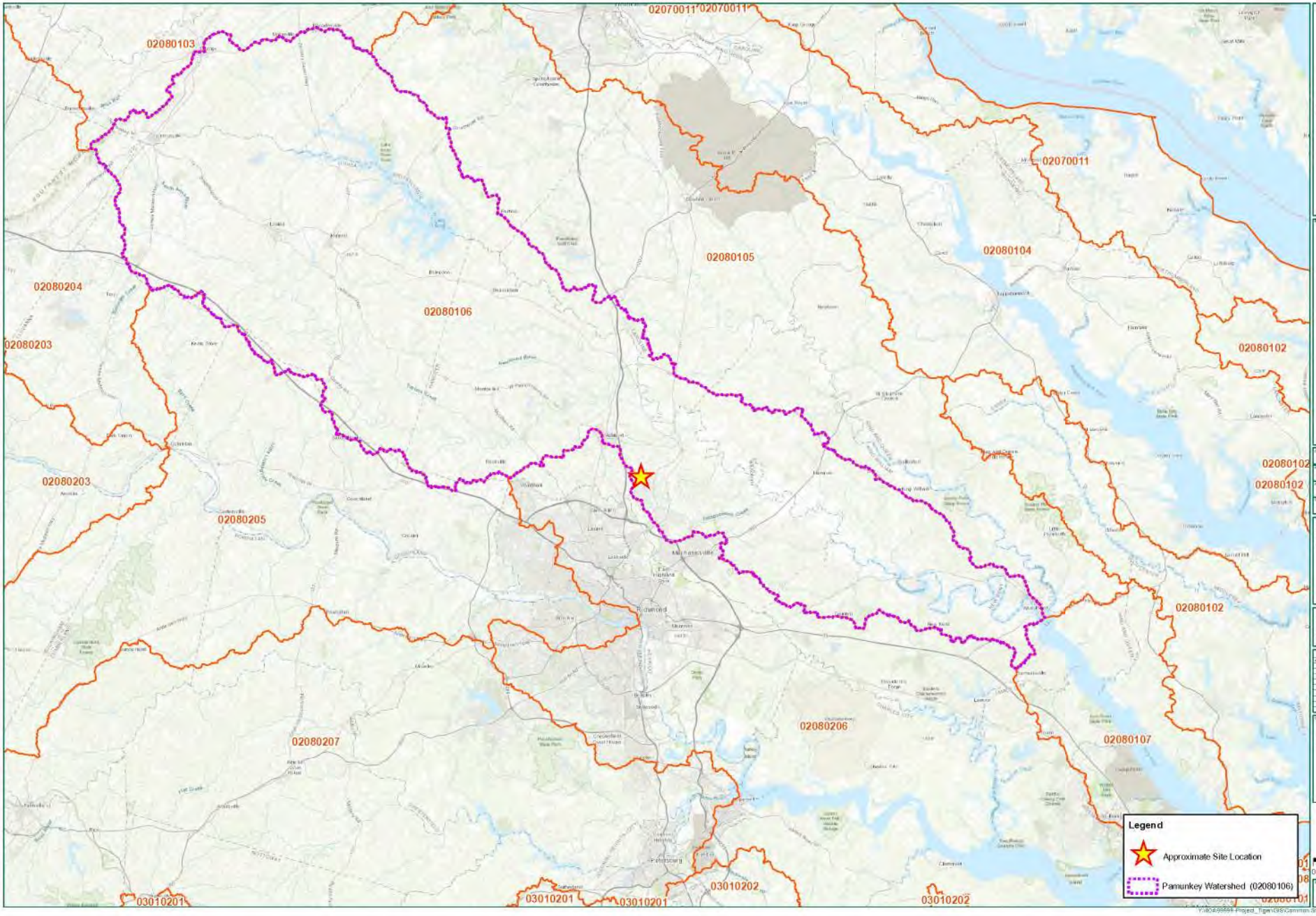

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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

DATE 11/19/2019
PROJECT NUMBER 99999
PROJECT NAME PROJECT TIGER
DESIGNED BY / DRAWN BY F. OSTERLOH

NOTES:
Site marker is approximate
HUC from USGS
Topographic basemap from Esri Online

REVISIONS

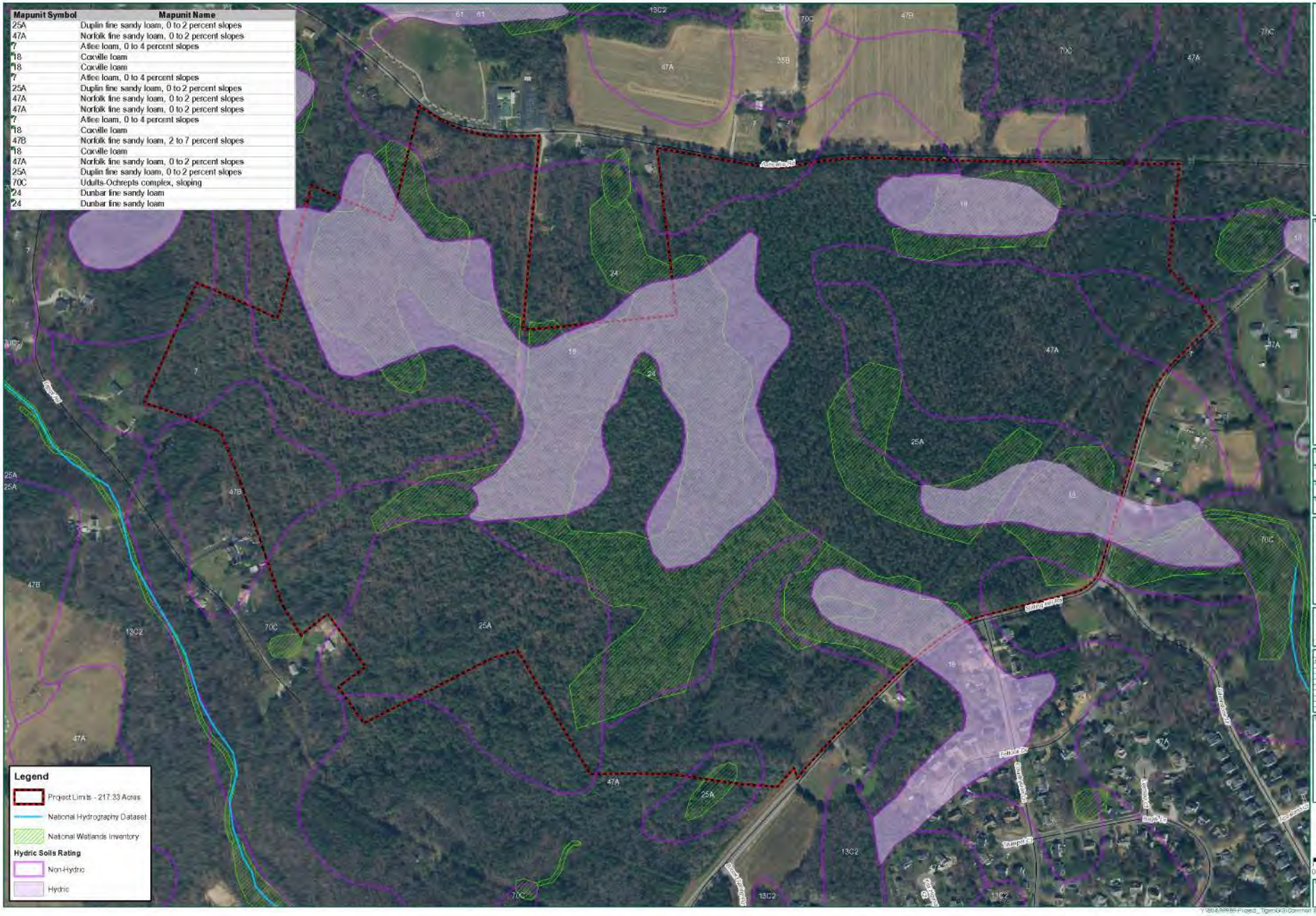
#	DATE	DESCRIPTION

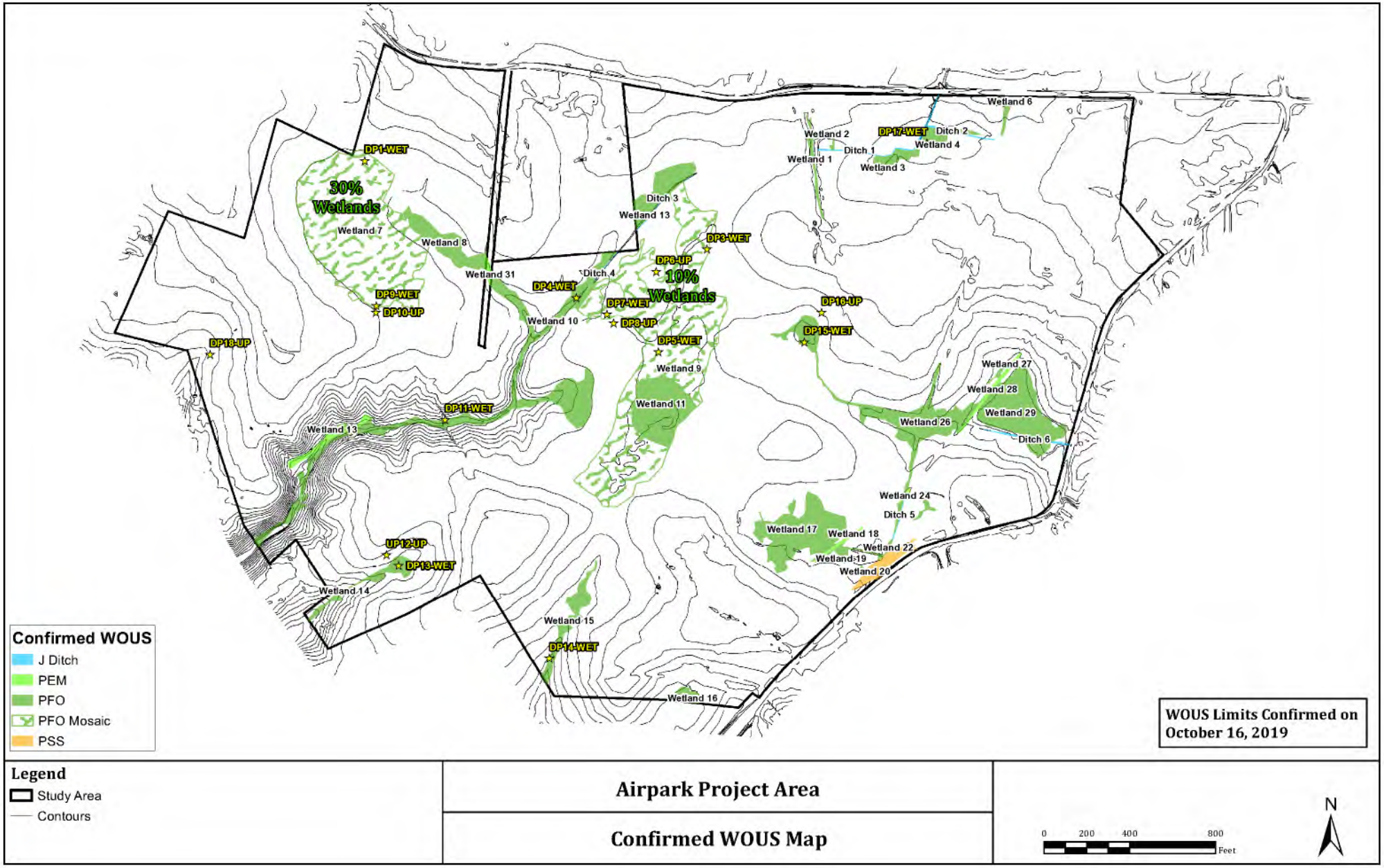
FIGURE 2:
HYDROLOGIC UNIT CODE MAP

1" = 4 Miles

Y:\99999\99999-Project_Tiger\GIS\Common\Shared Exhibits\99999-HUC.mxd

Mapunit Symbol	Mapunit Name
25A	Duplin fine sandy loam, 0 to 2 percent slopes
47A	Norfolk fine sandy loam, 0 to 2 percent slopes
7	Atlee loam, 0 to 4 percent slopes
18	Coxville loam
18	Coxville loam
7	Atlee loam, 0 to 4 percent slopes
25A	Duplin fine sandy loam, 0 to 2 percent slopes
47A	Norfolk fine sandy loam, 0 to 2 percent slopes
47A	Norfolk fine sandy loam, 0 to 2 percent slopes
7	Atlee loam, 0 to 4 percent slopes
18	Coxville loam
47B	Norfolk fine sandy loam, 2 to 7 percent slopes
18	Coxville loam
47A	Norfolk fine sandy loam, 0 to 2 percent slopes
25A	Duplin fine sandy loam, 0 to 2 percent slopes
70C	Udults-Ochrepts complex, sloping
24	Dunbar fine sandy loam
24	Dunbar fine sandy loam


Legend
Project Limits - 217.33 Acres
National Hydrography Dataset
National Wetlands Inventory
Hydric Soils Rating
Non-Hydric
Hydric
Aylerville Rd
Spring Hill Rd
Rockville Rd
Rockville Rd
Rockville



Airpark Project Area

Confirmed WOUS Map

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		6,075		
2a		2,650		
2b		8,496		
3a		5,705		
3b			161	574
4		3,055		
5a		35,804		
5b		65,374		
5c		15,023		
6b			138	505
7		6,192		
8		1,524		
9			704	3,763
10		10,252		
11		9,003		
12			320	1,375
13		1,491		
14		1,969		
15		23,929		
16		1,958		
17		1,308		
18		2,181		
19		1,574		
20		10,892		
21		3,495		
22a		5,247		
22b		2,734		
Total	0 sq ft	226,319 sq ft	1,383 lf	6,220 sq ft
	0.00 ac	5.20 ac		0.14 ac

Legend

- Project Study Limits - 217.3 Acres
- Limits of Disturbance - 133.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Proposed Fence
- Property Setback
- Existing Grading
- Proposed Grading

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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

DATE: 11/20/2018
PROJECT NUMBER: 69999
PROJECT NAME: PROJECT TIGER
DESIGNED BY / DRAWN BY: A. BERHOUD

1. Waters of the U.S. within the project study limits have been located using Indemar Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LiDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

REVISIONS

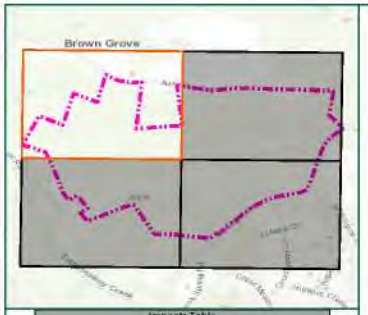
#	DATE	DESCRIPTION

FIGURE 5: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 225 450

PLANNED FOR 22" X 34" PLOT SCALE: 1" = 225'
SHEET NUMBER: 1

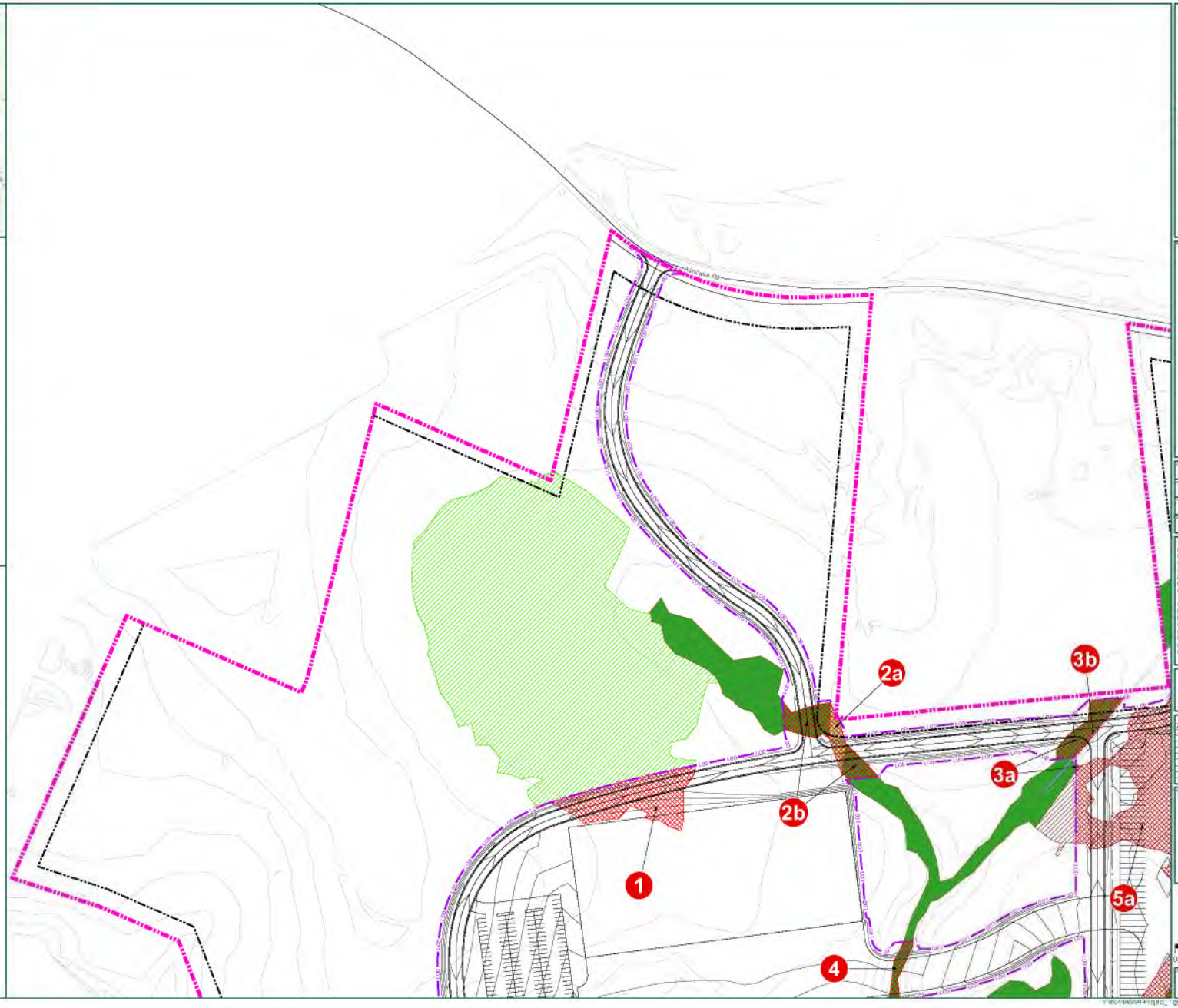
Y:\69\69999-Project_Tiger\CAD\WTM\69999-WTM.dwg



Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		6,075		
2a		2,650		
2b		8,496		
3a		5,705		
3b			161	574
4		3,055		
5a		35,804		
5b		65,374		
5c		15,023		
5b			138	505
7		6,192		
8		1,524		
9			704	3,763
10		10,252		
11		9,003		
12			320	1,375
13		1,491		
14		1,969		
15		23,929		
16		1,958		
17		1,308		
18		2,181		
19		1,574		
20		10,892		
21		3,495		
22a		5,247		
22b		2,734		
Total	0 sq ft	226,319 sq ft	1,383 lf	6,220 sq ft
	0.00 ac	5.20 ac		0.14 ac

Legend

- Project Study Limits - 217.3 Acres
- Limits of Disturbance - 133.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Proposed Fence
- Property Setback
- Existing Grading
- Proposed Grading



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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

DATE 11/20/2018
PROJECT NUMBER 95999
PROJECT NAME PROJECT TIGER
DESIGNED BY / DRAWN BY A. BERHFOLD

1. Waters of the U.S. within the project study limits have been located using Mobile GPS, acquired by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

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REVISIONS

NO.	DATE	DESCRIPTION

FIGURE 5: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 100 200

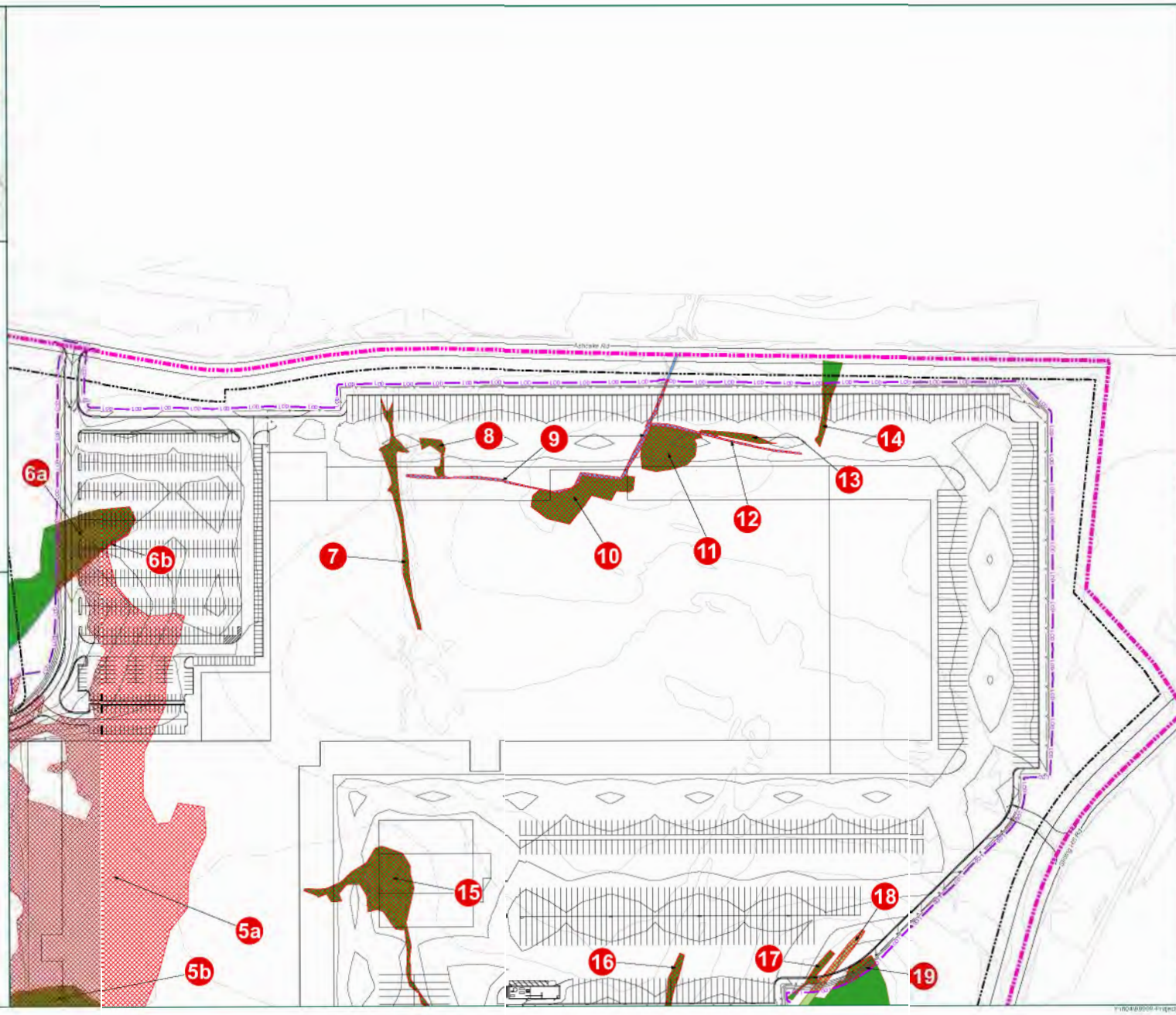
PLOT SCALE 1" = 100'
SHEET NUMBER 5

Y:\95999-Project_Tiger\CAD\WTM\95999-WTM.dwg

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		6,075		
2a		2,850		
2b		6,496		
3a		5,705		
3b			161	574
4		3,055		
5a		36,894		
5b		85,374		
6a		15,023		
6b			198	505
7		6,192		
8		1,524		
9			704	3,763
10		10,252		
11		9,003		
12			320	1,378
13		1,491		
14		1,969		
15		23,929		
16		1,958		
17		1,308		
18		2,181		
19		1,874		
20		10,892		
21		3,465		
22a		5,247		
22b		2,734		
Total	0 sq ft	226,219 sq ft	1,383 lf	6,220 sq ft
	0.00 ac	5.20 ac		0.14 ac

Legend

- Project Study Limits - 217.3 Acres
- Limits of Disturbance - 133.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Proposed Fence
- Property Setback
- Existing Grading
- Proposed Grading



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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

DATE: 11/20/2018
PROJECT NUMBER: 99999
PROJECT NAME: PROJECT TIGER
DRAWN BY / DESIGNED BY: A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using submeter Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LiDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

REVISIONS

#	DESCRIPTION

FIGURE 5: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

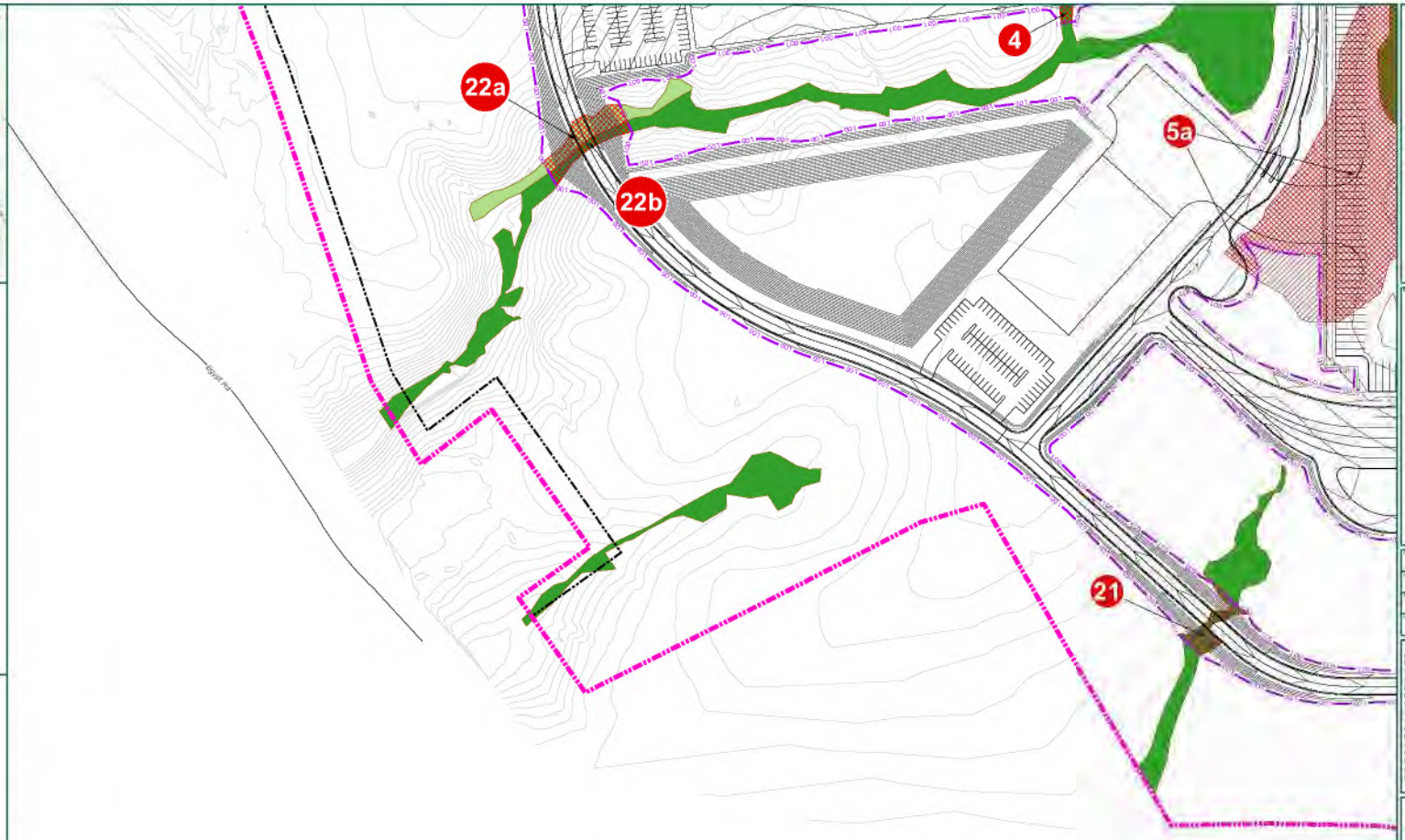
SCALE (FEET)
0 100 200

PROJECT NUMBER: 111 * * 100
SHEET NUMBER: 3

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		6,075		
2a		2,650		
2b		8,496		
3a		5,705		
3b			161	574
4		3,055		
5a		35,804		
5b		65,374		
5e		15,023		
6b			138	505
7		6,192		
8		1,524		
9			704	3,763
10		10,252		
11		9,003		
12			320	1,376
13		1,491		
14		1,969		
15		23,929		
16		1,958		
17		1,308		
18		2,181		
19		1,574		
20		10,892		
21		3,495		
22a		5,247		
22b		2,734		
Total	0 sq ft	226,319 sq ft	1,383 lf	6,220 sq ft
	0.00 ac	5.20 ac		0.14 ac

Legend

- Project Study Limits - 217.3 Acres
- Limits of Disturbance - 133.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Proposed Fence
- Property Setback
- Existing Grading
- Proposed Grading



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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

REVISIONS

FIGURE 5. PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 100 200

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		6,076		
2a		2,650		
2b		8,496		
3a		5,705		
3b			161	574
4		3,055		
5a		35,804		
5b		65,374		
6a		15,023		
6b			138	505
7		6,132		
8		1,524		
9			704	3,763
10		10,252		
11		9,003		
12			320	1,375
13		1,491		
14		1,969		
15		23,929		
16		1,958		
17		1,308		
18		2,181		
19		1,574		
20		10,892		
21		3,495		
22a		5,247		
22b		2,734		
Total	0 sq ft	226,319 sq ft	1,383 lf	6,220 sq ft
	0.00 ac	5.20 ac		0.14 ac

Legend

- Project Study Limits - 217.3 Acres
- Limits of Disturbance - 133.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Proposed Fence
- Property Setback
- Existing Grading
- Proposed Grading

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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

DATE: 11/20/2019
PROJECT NUMBER: 99999
PROJECT NAME: PROJECT TIGER
DESIGNED BY / DRAWN BY: A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using sub-meter Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

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REVISIONS

NO.	DATE	DESCRIPTION

FIGURE 5: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 100 200

PLOTTED AT 11" X 17" SHEET SIZE
SCALE: 1:1 * = 100'
SHEET NUMBER: 6

Y:\99999-Project_Tiger\CS\WTM\99999-WTM.mxd

Legend

- Parcel Limits - 249.7 Acres
- NHD
- Resource Protection Area
- Proposed Layout
- Wetland Impacts - 15.0 Acres
- Onsite Wetlands From NWI
- National Wetlands Inventory

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PROJECT NAME & LOCATION:

PROJECT TIGER - OFFSITE ALTERNATIVE - FLIPPO

HANOVER COUNTY, VIRGINIA

DATE: 11/05/2018

PROJECT NUMBER:

PROJECT NAME: PROJECT TIGER

DRAWING SET DESIGNED BY: C. CHAPPELL

1. Waters of the U.S. within the project study limits have been located using estimated Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LiDAR.
5. Goldsmith Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Goldsmith Classifications.

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REVISIONS

#	DESCRIPTION

DRAWING DESCRIPTION:

FIGURE 6: OFFSITE ALTERNATIVE - FLIPPO SITE

SCALE (FEET)

0 280 560

PLANS AND SPECIFICATIONS ARE UNLESS SCALE

SCALE	SHEET NUMBER
1:1 = 275	1

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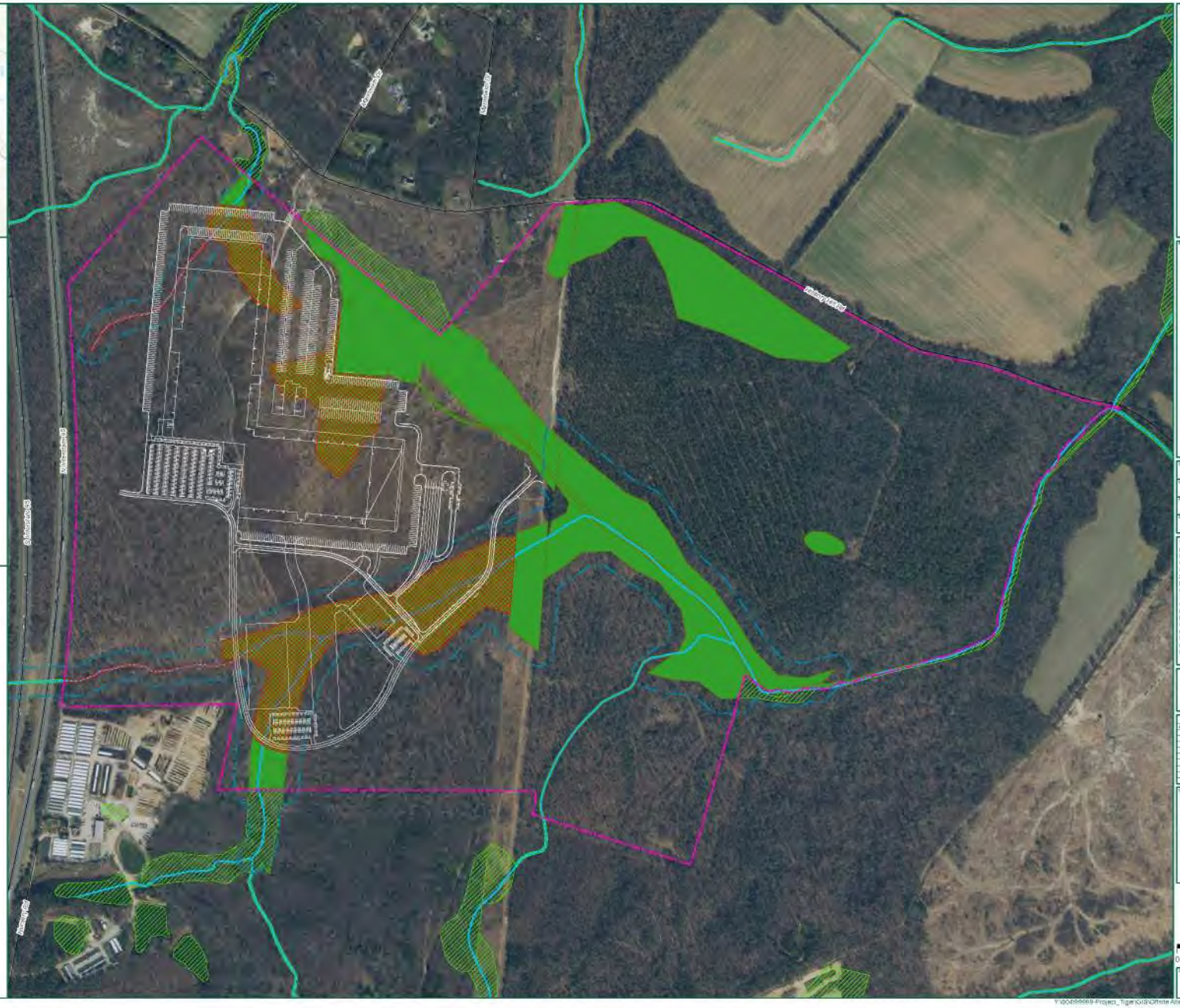
Mechanicsville Rd
Mechanicsville Rd
Mechanicsville Rd

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		31,017		
2a		1,582		
2b		8,357		
3a		3,063		
3b		1,337		
4a		13,104		
4b			179	634
5a		24,787		
5b			315	846
6a		37,259		
6b		65,374		
7		3,317		
8		16,892		
9		19,173		
10		2,576		
11		6,192		
12		15,242		
13			713	3,797
14		10,252		
15		9,003		
16			322	1,378
17		1,491		
18		2,165		
Total	0 sq ft	272,183 sq ft	1,529 lf	6,655 sq ft
	0.00 ac	6.25 ac		0.15 ac

Legend

- Project Study Limits - 217.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Existing Grading

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PROJECT TIGER - ONSITE ALTERNATIVE
HANOVER COUNTY, VIRGINIA

DATE 11/12/2019
PROJECT NUMBER 95999
PROJECT NAME PROJECT TIGER
DESIGNED BY / DRAWN BY A. BERHQUIST

1. Waters of the U.S. within the project study limits have been located using Intermediate Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

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REVISIONS

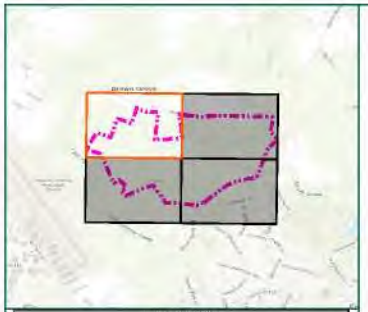
#	DATE	DESCRIPTION

FIGURE 8
PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 225 450

SCALE 1" = 225' | SHEET NUMBER 1

Y:\95999\95999-Project_Tiger\GIS\WTM Scenario 2\95999-WTM.mxd



Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		31,017		
2a		1,582		
2b		8,357		
3a		3,063		
3b		1,337		
4a		13,104		
4b			179	634
5a		24,787		
5b			315	846
6a		37,259		
6b		65,374		
7		3,317		
8		16,892		
9		19,173		
10		2,576		
11		6,192		
12		15,242		
13			713	3,797
14		10,252		
15		9,003		
16			322	1,378
17		1,491		
18		2,165		
Total	0 sq ft	272,183 sq ft	1,529 lf	6,655 sq ft
	0.00 ac	6.25 ac		0.15 ac

Legend

- Project Study Limits - 217.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Existing Grading

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Richmond, VA 23225
TEL 804.200.5000
www.timmons.com

PROJECT NAME & LOCATION:
PROJECT TIGER - ONSITE ALTERNATIVE
HANOVER COUNTY, VIRGINIA

DATE: 11/21/2019
PROJECT NUMBER: 99999
PROJECT NAME: PROJECT TIGER
DRAWING BY / DESIGNED BY: A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using submeter Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

REVISIONS

#	DATE	DESCRIPTION

FIGURE 8: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

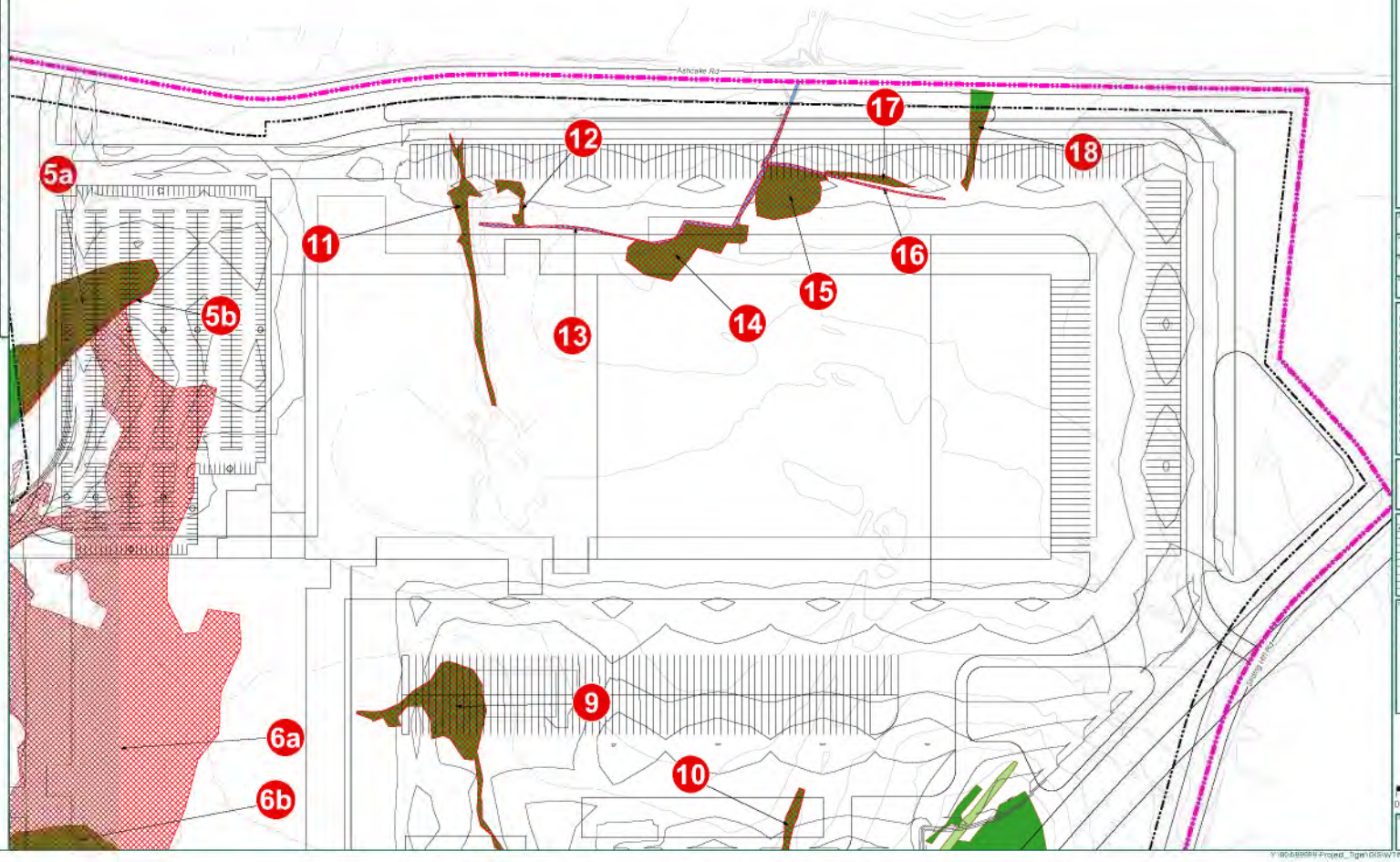
SCALE (FEET)
0 100 200

Y:\80\99999-Project_Tiger\GIS\WTIM Scenario 2\99999-WTIM.mxd

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		31,017		
2a		1,582		
2b		8,357		
3a		3,063		
3b		1,337		
4a		13,104		
4b			179	634
5a		24,787		
5b			315	846
6a		37,250		
6b		85,374		
7		3,317		
8		16,892		
9		19,173		
10		2,576		
11		6,192		
12		15,242		
13			713	3,797
14		10,252		
15		9,003		
16			322	1,378
17		1,491		
18		2,165		
Total	0 sq ft 0.00 ac	272,183 sq ft 6.25 ac	1,529 lf	6,655 sq ft 0.15 ac

Legend

- Project Study Limits - 217.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Existing Grading



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Richmond, VA 23230
TEL 804.200.6500
www.timmons.com

PROJECT TIGER - ONSITE ALTERNATIVE
HANOVER COUNTY, VIRGINIA

DATE 11/12/2019
PROJECT NUMBER 95999
PROJECT NAME PROJECT TIGER
DESIGNED BY / DRAWN BY A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using sub-meter Bluetooth GPS, as provided by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

REVISIONS

#	DATE	DESCRIPTION

FIGURE 8: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 100 200

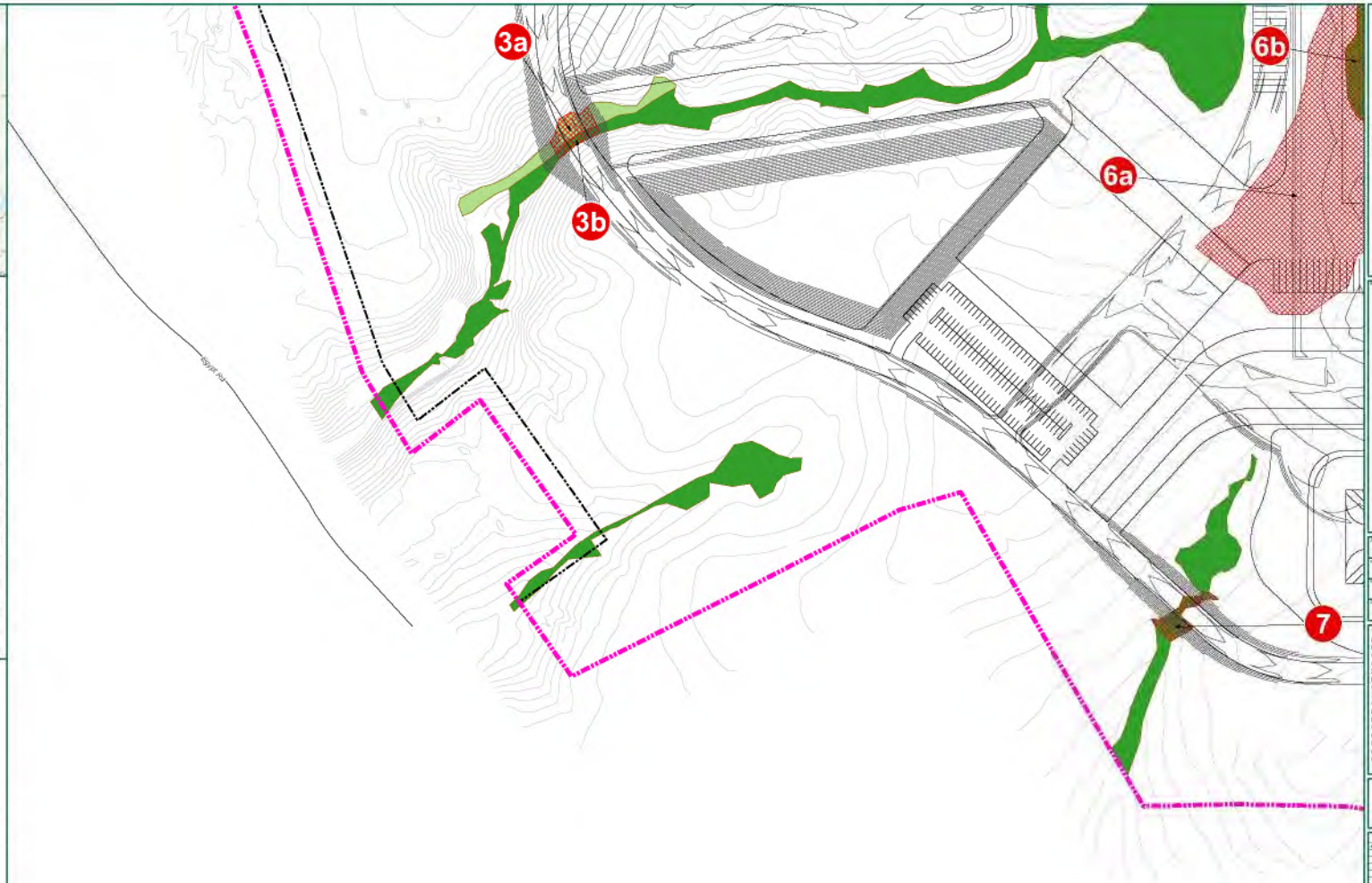
PLANNED PRINTED AT 11" X 17" HALF SCALE
1" = 100'
SHEET NUMBER 1

Y:\95999999-Project_Tiger\DSW\TM Scenario 3\95999-WTM.mxd

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		31,017		
2a		1,582		
2b		8,357		
3a		3,063		
3b		1,337		
4a		13,104		
4b			179	634
5a		24,787		
5b			315	846
6a		37,259		
6b		65,374		
7		3,317		
8		16,892		
9		19,173		
10		2,576		
11		6,192		
12		15,242		
13			713	3,797
14		10,252		
15		9,003		
16			322	1,378
17		1,491		
18		2,165		
Total	0 sq ft	272,183 sq ft	1,529 lf	6,655 sq ft
	0.00 ac	6.25 ac		0.15 ac

Legend

- Project Study Limits - 217.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Existing Grading



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PROJECT TIGER - ONSITE ALTERNATIVE
HANOVER COUNTY, VIRGINIA

DATE 11/12/2018
PROJECT NUMBER V00006
PROJECT NAME PROJECT TIGER
DESIGNED BY / DRAWN BY A. BERHQUIST

1. Waters of the U.S. within the project study limits have been located using estimated Trimble® GPS, amended by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

These plans and specifications constitute an instrument of service and shall remain the property of Timmons Group. They shall not be used for the whole or in part on any other project without the express written permission of Timmons Group.

REVISIONS

#	DATE	DESCRIPTION

FIGURE 8
PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 100 200

PLANNED FOR 24x36 PLOT AT SCALE
1" = 100'
SHEET NUMBER 4

Y:\V00006\Project_Tiger\DSW\TM Scenario 3\V00006-WT1M.dwg

Impacts Table				
	Wetland (sq. ft)		Ditch	
	Impact		Permanent Impact	
Impact ID	Temporary	Permanent	(lf)	(sq. ft)
1		31,017		
2a		1,582		
2b		8,357		
3a		3,063		
3b		1,337		
4a		13,104		
4b			179	634
5a		24,787		
5b			315	846
6a		37,259		
6b		65,374		
7		3,317		
8		16,892		
9		19,173		
10		2,576		
11		6,192		
12		15,242		
13			713	3,797
14		10,252		
15		9,003		
16			322	1,378
17		1,491		
18		2,165		
Total	0 sq ft	272,183 sq ft	1,529 lf	6,655 sq ft
	0.00 ac	6.25 ac		0.15 ac

Legend

- Project Study Limits - 217.3 Acres
- Wetland/Ditch Impact
- Permanent Wetland/Ditch Impact
- 10% Palustrine Forested (PFO) Wetlands
- 30% Palustrine Forested (PFO) Wetlands
- 100% Palustrine Forested (PFO) Wetlands
- Palustrine Emergent (PEM) Wetlands
- Palustrine Scrub-Shrub (PSS) Wetlands
- Ditch
- Existing Grading

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PROJECT NAME & LOCATION:
PROJECT TIGER - ONSITE ALTERNATIVE
HANOVER COUNTY, VIRGINIA

DATE: 11/21/2019
PROJECT NUMBER: 99999
PROJECT NAME: PROJECT TIGER
DESIGNED / DRAWN BY: A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using sub-meter Bluetooth GPS antennas by Timmons Group.
2. Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers.
3. Project limits are approximate.
4. Topography based on USGS LIDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal stream assessment methodology was completed to determine these Cowardin Classifications.

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REVISIONS

#	DATE	DESCRIPTION

DRAWING DESCRIPTION:
FIGURE 8: PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. IMPACTS MAP

SCALE (FEET)
0 100 200

PLOTTED AT 11" X 17" SHEET SIZE
SCALE: 1"=100'
SHEET NUMBER: 8

Y:\99999999-Project_Tiger\GIS\WTM Scenario 2\99999-WTM.mxd

Label	GPIN	OWNER NAME	MAILING ADDRESS	CITY & STATE	ZIPCODE
1	7798-47-4187	CHAPPELL, E TYREE	9677 ATLEE STATION ROAD	MECHANICSVILLE VA	23116
2	7798-57-8316	LOVING, GARY H & NORIKO S R/S	513 RIVER VIEW COURT	CHESTER VA	23831
3	7798-66-6355	VAUGHAN, BEVERLY LOVING	209 STEBBINS ST	ASHLAND VA	23005
4	7798-65-8629	MILLER, ELIZABETH LOVING & VAUGHAN,	206 STEBBINS STREET	ASHLAND VA	23005
5	7798-64-6936	LOWE, R B	PO BOX 175	MECHANICSVILLE VA	23111
6	7798-64-7835	HOCHFELDER, HOPE R	9209 SLIDING HILL ROAD	ASHLAND VA	23005
7	7798-64-6435	BARKER, BILLY JOE & DEMPSEY,	9211 SLIDING HILL ROAD	ASHLAND VA	23005
8	7798-64-4457	JACKSON, JOSEPH M & GATILEE	9221 SLIDING HILL ROAD	ASHLAND VA	23005
9	7798-64-3286	PULLER, ALVIN P & KATHY S, ETALS	9229 SLIDING HILL ROAD	ASHLAND VA	23005
10	7798-63-6873	OWEN, JERRY & MARY FAMILY LIMITED	9090 NESSLEWOOD CIRCLE	MECHANICSVILLE VA	23116
11	7798-63-1703	MARTIN, FRANKLIN E, JR & DUCHANOY	9255 SLIDING HILL ROAD	ASHLAND VA	23005
12	7798-53-7186	DARGIE, CHRISTOPHER	11195 COUNTRYSIDE LANE	MECHANICSVILLE VA	23116
13	7798-53-5637	CLARK, STEPHAN J & DONNA C	11195 COUNTRYSIDE LANE	MECHANICSVILLE VA	23116
14	7798-53-2382	COLEMAN, ALICE M	9302 SLIDING HILL ROAD	ASHLAND VA	23005
15	7798-52-0866	GARNETT, FONZIE M & DORA, ETALS	1726 JACKSON STREET N E	WASHINGTON DC	20018
16	7798-42-7610	GARNETT, FONZIE M & DORA, ETALS	1726 JACKSON STREET N E	WASHINGTON DC	20018
17	7798-32-4765	LOWE, RILEY B & HELENE R/S	PO BOX 175	MECHANICSVILLE VA	23116
18	7798-23-0674	BURRUSS, CAROLYN	P O BOX 4396	GLEN ALLEN VA	23058
19	7798-23-3795	JONES, ABRAHAM	9403 ASHCAKE ROAD	ASHLAND VA	23005
20	7798-23-2956	COTMAN, BONNIE & LARRY, JR R/S	9453 ASHCAKE ROAD	ASHLAND VA	23005
21	7798-24-2008	HARRIS, MCKINLEY & ELIZABETH R/S	9453 ASHCAKE ROAD	ASHLAND VA	23005
22	7798-24-1490	CEMETERY		ASHLAND VA	23005
23	7798-24-1623	MORRIS, CAROLINE - EST	1716 WINDER STREET	RICHMOND VA	23220
24	7798-14-9479	MORRIS, SULLIVAN	9409 ASHCAKE ROAD	ASHLAND VA	23005
25	7798-14-8660	HANCOCK, THOMAS R & CHERYL D R/S	11232 EGYPT ROAD	ASHLAND VA	23005
26	7798-14-6763	CASH, JUANITA & CASH, MARY ANN R/S	11242 EGYPT ROAD	ASHLAND VA	23005
27	7798-14-7950	WILSON, MELVINIA PATTERSON &	8304 STONE RIVER COURT	RICHMOND VA	23235
28	7798-15-7147	COLEMAN, NORMAN ETALS	9357 ASHCAKE ROAD	ASHLAND VA	23005
29	7798-25-3608	C/W MAP 7798-15-9744			
30	7798-25-8929	COLEMAN, LOUIS D SR, ETALS	104 EISENHOWER DRIVE	RICHMOND VA	23228
31	7798-36-1650	BROWN GROVE BAPTIST CHURCH	9328 ASHCAKE ROAD	ASHLAND VA	23005
32	7798-36-6195	BROWN GROVE BAPTIST CHURCH	9328 ASHCAKE ROAD	ASHLAND VA	23005
33	7798-35-7825	LEWIS, MITCHELL, ESTATE	9315 ASHCAKE ROAD	ASHLAND VA	23005
34	7798-35-7553	WILSON, MARTHA A	10202 ASHCAKE ROAD	ASHLAND VA	23005
35	7798-35-7205	LEWIS, MITCHELL, ESTATE	9315 ASHCAKE ROAD	ASHLAND VA	23005
36	7798-45-0574	TYSON, BERDIE L, ETALS	9293 ASHCAKE ROAD	ASHLAND VA	23005

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PROJECT TIGER
HANOVER COUNTY, VIRGINIA

NOTES:
Project Limits are approximate
Aerial imagery from VGIN

REVISIONS

FIGURE 9:
ADJACENT PROPERTY OWNER MAP

SCALE (FEET)
0 360 720

APPENDIX A:
JOINT PERMIT APPLICATION

FOR AGENCY USE ONLY	
	Notes:
JPA#	

APPLICANTS

PLEASE PRINT OR TYPE ALL ANSWERS. If a question does not apply to your project, please print N/A (not applicable) in the space provided. ***If additional space is needed, attach extra 8 ½ x 11 inch sheets of paper.***

Check all that apply			
☐ Pre-Construction Notification (PCN) ☐ NWP # _____ ☐ RP # 05 *(For NWPs & RP 05 ONLY - No DEQ-VWP permit writer will be assigned)*	☐ SPGP	☐ DEQ Reapplication Existing permit number: _____	☐ Receiving federal funds Agency providing funding: _____
☐ Regional Permit 17 Checklist (RP-17)			

PREVIOUS ACTIONS RELATED TO THE PROPOSED WORK (Include all federal, state, and local pre application coordination, site visits, previous permits, or applications whether issued, withdrawn, or denied)

Historical information for past permit submittals can be found online with VMRC - https://webapps.mrc.virginia.gov/public/habitat/ - or VIMS - http://ccrm.vims.edu/perms/newpermits.html

Agency	Action / Activity	Permit/Project number, including any non-reporting Nationwide permits previously used (e.g., NWP 13)	Date of Action	If denied, give reason for denial
USACE	Preliminary Jurisdictional Determination	NAO-2012-02369	10/30/2019	

1. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION
The applicant(s) is/are the legal entity to which the permit may be issued (see How to Apply at beginning of form). The applicant(s) can either be the property owner(s) or the person/people/company(ies) that intend(s) to undertake the activity. The agent is the person or company that is representing the applicant(s). If a company, please also provide the company name that is registered with the State Corporation Commission (SCC), or indicate no registration with the SCC.

Legal Name(s) of Applicant(s)			Agent (if applicable)		
Hanover County Economic Development; c/o E. Linwood Thomas IV			Timmons Group, c/o Matt Neely or Parker Osterloh		
Mailing address 8200 Center Path Lane, Suite E			Mailing address 1001 Boulders Parkway, Suite 300		
City Mechanicsville	State VA	ZIP Code 23116	City Richmond	State VA	ZIP Code 23225
Phone number w/area code (804) 365-6458	Fax (804) 365-6463		Phone number w/area code (804)-200-6369	Fax (804)-200-1648	
Mobile N/A	E-mail elthomas@HanoverVirginia.com		Mobile N/A	E-mail matt.neely@timmons.com	
State Corporation Commission Name and ID number (if applicable) N/A			State Corporation Commission Name and ID number (if applicable) 0264043		

Certain permits or permit authorizations may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please provide an e-mail address here: _____

1. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION (Continued)

Property owner(s) legal name, if different from applicant Airpark Associates			Contractor, if known		
Mailing address 11277 Air Park Road			Mailing address		
City Ashland	State VA	ZIP code 23005	City	State	ZIP code
Phone number w/area code N/A	Fax N/A		Phone number w/area code	Fax	
Mobile N/A	E-mail N/A		Mobile	E-mail	
State Corporation Commission Name and ID number (if applicable)			State Corporation Commission Name ID number (if applicable)		

2. PROJECT LOCATION INFORMATION

(Attach a copy of a detailed map, such as a USGS topographic map or street map showing the site location and project boundary, so that it may be located for inspection. Include an arrow indicating the north direction. Include the drainage area if the SPGP box is checked on Page 7.)

Street Address (911 address if available)	City/County/ZIP Code Ashland/Hanover/23005
Subdivision	Lot/Block/Parcel #

Name of water body(ies) within project boundaries and drainage area (acres or square miles).
N/A

Tributary(ies) to: Totopotomoy Creek
Basin: Pamunkey River Sub-basin: Upper Pamunkey River
(*Example: Basin: James River Sub-basin: Middle James River*)

Special Standards (based on DEQ Water Quality Standards 9VAC25-260 et seq.): _____

Project type (check one)
_____ Single user (private, non-commercial, residential)
x Multi-user (community, commercial, industrial, government)
_____ Surface water withdrawal

Latitude and longitude at center of project site (decimal degrees): 37.711435° / -77.423739°
(Example: 37.33164/-77.68200)

USGS topographic map name: Yellow Tavern

8-digit USGS Hydrologic Unit Code (HUC) for your project site (See http://cfpub.epa.gov/surf/locate/index.cfm): 02080106
If known, indicate the 10-digit and 12-digit USGS HUCs (see http://consapps.dcr.virginia.gov/htdocs/maps/HUExplorer.htm) :
0208010606 020801060904, 020801060901, 020801060902

Name of your project (*Example: Water Creek driveway crossing*) Project Tiger

Is there an access road to the project? ☑ Yes ☐ No. If yes, check all that apply: ☑ public ☐ private ☐ improved ☐ unimproved

Total size of the project area (in acres): 217.33

2. PROJECT LOCATION INFORMATION (Continued)

Provide driving directions to your site, giving distances from the best and nearest visible landmarks or major intersections:

From the interchange of Interstate 95 and Sliding Hill Road travel approximately 3 miles northeast to the intersection of Sliding Hill Road and Ashcake Road. The site is located southwest of the intersection of Sliding Hill Road and Ashcake Road.

Does your project site cross boundaries of two or more localities (i.e., cities/counties/towns)? ☐ Yes ☑ No
If so, name those localities:

3. DESCRIPTION OF THE PROJECT, PROJECT PRIMARY AND SECONDARY *PURPOSES*, PROJECT *NEED*, INTENDED USE(S), AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose and need must include any new development or expansion of an existing land use and/or proposed future use of residual land.
- Describe the physical alteration of surface waters, including the use of pilings (#, materials), vibratory hammers, explosives, and hydraulic dredging, when applicable, and *whether or not tree clearing will occur* (include the area in square feet and time of year).
- Include a description of alternatives considered and measures taken to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent practicable. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered
- For surface water withdrawals, public surface water supply withdrawals, or projects that will alter in stream flows, include the water supply issues that form the basis of the proposed project.

Please see attached narrative

Date of proposed commencement of work (MM/DD/YYYY)	Date of proposed completion of work (MM/DD/YYYY)
April 2020	TBD
Are you submitting this application at the direction of any state, local, or federal agency? X Yes ____ No	Has any work commenced or has any portion of the project for which you are seeking a permit been completed? ____ Yes X No

If you answered "yes" to either question above, give details stating when the work was completed and/or when it commenced, who performed the work, and which agency (if any) directed you to submit this application. In addition, you will need to clearly differentiate between completed work and proposed work on your project drawings.

Submitting at the direction of Hanover County Economic Development, the Applicant.

Are you aware of any unresolved violations of environmental law or litigation involving the property? ____ Yes X No
(If yes, please explain)

4. PROJECT COSTS

Approximate cost of the entire project, including materials and labor: $ TBD

Approximate cost of only the portion of the project affecting state waters (channelward of mean low water in tidal areas and below ordinary high water mark in nontidal areas): $ TBD

5. PUBLIC NOTIFICATION (Attach additional sheets if necessary)

Complete information for all property owners adjacent to the project site and across the waterway, if the waterway is less than 500 feet in width. If your project is located within a cove, you will need to provide names and mailing addresses for all property owners within the cove. If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line. Per Army Regulation (AR 25-51) outgoing correspondence must be addressed to a person or business.

Failure to provide this information may result in a delay in the processing of your application by VMRC.

Property owner's name	Mailing address	City	State	ZIP code
Figure 9: Adjacent Property Owner Information Map/Table				

Name of newspaper having general circulation in the area of the project: Richmond Times Dispatch

Address and phone number (including area code) of newspaper 300 E. Franklin Street Richmond, VA 23219 (804)-649-6000

Have adjacent property owners been notified with forms in Appendix A? _____ Yes X No (attach copies of distributed forms)

6. THREATENED AND ENDANGERED SPECIES INFORMATION

Please provide any information concerning the potential for your project to impact state and/or federally threatened and endangered species (listed or proposed). Attach correspondence from agencies and/or reference materials that address potential impacts, such as database search results or confirmed waters and wetlands delineation/jurisdictional determination. Include information when applicable regarding the location of the project in Endangered Species Act-designated or -critical habitats. Contact information for the U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Virginia Dept. of Game and Inland Fisheries, and the Virginia Dept. of Conservation and Recreation-Division of Natural Heritage can be found on page 4 of this package.

7. HISTORIC RESOURCES INFORMATION

Note: Historic properties include but are not limited to archeological sites, battlefields, Civil War earthworks, graveyards, buildings, bridges, canals, etc. Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the USACE from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the USACE, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

Are any historic properties located within or adjacent to the project site? X Yes ____ No _____ Uncertain

If Yes, please provide a map showing the location of the historic property within or adjacent to the project site.

Are there any buildings or structures 50 years old or older located on the project site? ____ Yes ____ No X Uncertain

If Yes, please provide a map showing the location of these buildings or structures on the project site.

Is your project located within a historic district? ____ Yes X No ____ Uncertain

If Yes, please indicate which district: _____

7. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?
x Yes ___ No ___ Uncertain

If Yes, please provide the following information: Date of Survey: 06/25/1996, 11/20/2019

Name of firm: Gray and Pape, Dutton & Associates, Inc.

Is there a report on file with the Virginia Department of Historic Resources? X Yes ___ No ___Uncertain

Title of Cultural Resources Management (CRM) report: Interim Report of Phase 1 (see Appendix E)

Was any historic property located? X Yes ___ No ___ Uncertain

8. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 17.

	Impact site number 1	Impact site number 2	Impact site number 3	Impact site number 4	Impact site number 5
Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO (*Example: F, NT, PE, V*)	Please see impact table in attached narrative.				
Latitude / Longitude (in decimal degrees)					
Wetland/waters impact area (square feet / acres)					
Dune/beach impact area (square feet)					
Stream dimensions at impact site (length and average width in linear feet, and area in square feet)					
Volume of fill below Mean High Water or Ordinary High Water (cubic yards)					

8. WETLANDS/WATERS IMPACT INFORMATION (Continued)

Cowardin classification of impacted wetland/water or geomorphological classification of stream *Example wetland: PFO; Example stream: 'C' channel and if tidal, whether vegetated or non-vegetated wetlands per Section 28.2-1300 of the Code of Virginia*					
Average stream flow at site (flow rate under normal rainfall conditions in cubic feet per second) and method of deriving it (gage, estimate, etc.)					
Contributing drainage area in acres or square miles (*VMRC cannot complete review without this information*)					
DEQ classification of impacted resource(s): Estuarine Class II; Non-tidal waters Class III; Mountainous zone waters Class IV; Stockable trout waters Class V; Natural trout waters Class VI; Wetlands Class VII https://law.lis.virginia.gov					

For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map – see (3) in the Footnotes section in the form instructions.

For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument.

9. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR CERTIFICATIONS

READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

CERTIFICATION: I am hereby applying for permits typically issued by the DEQ, VMRC, USACE, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

9. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR CERTIFICATIONS (Continued)

Is/Are the Applicant(s) and Owner(s) the same? ☐ *Yes* ☑ *No*

Legal name & title of Applicant Hanover County Economic Development; c/o E. Linwood Thomas IV	Second applicant's legal name & title, if applicable
Applicant's signature E. Linwood Thomas IV	Second applicant's signature
Date 11/22/19	Date
Property owner's legal name, if different from Applicant Air Park Associates, L.P.; c/o Phil Dean or Bob Cox	Second property owner's legal name, if applicable
Property owner's signature, if different from Applicant Phillip W Dean, GP	Second property owner's signature
Date Nov. 25, 2019	Date

CERTIFICATION OF AUTHORIZATION TO ALLOW AGENT(S) TO ACT ON APPLICANT'S(S') BEHALF (IF APPLICABLE)

I (we), Hanover County Economic Development; C/O E. Linwood Thomas IV (and) _____,
APPLICANT'S LEGAL NAME(S) – *complete the second blank if more than one Applicant*

hereby certify that I (we) have authorized Timmons Group; c/o Matt Neely (and) Timmons Group; c/o Parker Osterloh
AGENT'S NAME(S) – *complete the second blank if more than one Agent*

to act on my (our) behalf and take all actions necessary to the processing, issuance, and acceptance of this permit and any and all standard and special conditions attached. I (we) hereby certify that the information submitted in this application is true and accurate to the best of my (our) knowledge.

Applicant's signature E. Linwood Thomas IV	Second applicant's signature, if applicable
Date 11/22/19	Date
Agent's signature and title Matthew A Neely, Sr. Environmental Project Manager	Second agent's signature and title, if applicable Parker Osterloh, Environmental Scientist
Date 11/26/2019	Date 11/26/19

CONTRACTOR ACKNOWLEDGEMENT (IF APPLICABLE)

I (we), _____ (and) _____,
APPLICANT'S LEGAL NAME(S) – *complete the second blank if more than one Applicant*

have contracted _____ (and) _____
CONTRACTOR'S NAME(S) – *complete the second blank if more than one Contractor*

to perform the work described in this Joint Permit Application, signed and dated _____.

I (we) will read and abide by all conditions as set forth in all federal, state, and local permits as required for this project. I (we) understand that failure to follow the conditions of the permits may constitute a violation of applicable federal, state, and local statutes and that we will be liable for any civil and/or criminal penalties imposed by these statutes.
In addition, I (we) agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If I (we) fail to provide the applicable permit upon request, I (we) understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all of the terms and conditions.

Contractor's name or name of firm (printed/typed)	Contractor's or firm's mailing address	
Contractor's signature and title	Contractor's license number	Date
Applicant's signature	Second applicant's signature, if applicable	
Date	Date	

17. DREDGING, MINING, AND EXCAVATING (Continued)

For mining projects: On separate sheets of paper, explain the operation plans, including: 1) the frequency (e.g., every six weeks), duration (i.e., April through September), and volume (in cubic yards) to be removed per operation; 2) the temporary storage and handling methods of mined material, including the dimensions of the containment berm used for upland disposal of dredged material and the need (or no need) for a liner or impermeable material to prevent the leaching of any identified contaminants into ground water; 3) how equipment will access the mine site; and 4) verification that dredging: a) will not occur in water body segments that are currently on the effective Section 303(d) Total Maximum Daily Load (TMDL) priority list (available at http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLDevelopment/TMDLProgramPriorities.aspx) or that have an approved TMDL; b) will not exacerbate any impairment; and c) will be consistent with any waste load allocation/limit/conditions imposed by an approved TMDL (see, "What's in my backyard" or subsequent spatial files at http://www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx to determine the extent of TMDL watersheds and impairment segments).

Have you applied for a permit from the Virginia Department of Mines, Minerals and Energy? _____Yes _____No If Yes:
Existing permit number:_____ Date permit issued: _____

Contributing drainage area: _____square miles	Average stream flow at site (flow rate under normal rainfall conditions): _____cfs

18. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES

Source and composition of fill material (percentage sand, silt, clay, rock):

TBD

Provide documentation (i.e., laboratory results or analytical reports) that *fill* material from *off-site* locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e., bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas.

Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any):

Provide suitable substrate for site development/grading as dictated by geotechnical report.

Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose:

Construction of building pads, parking areas, and proposed road crossings associated with development of a regional distribution center

Will the structure be placed on pilings? ____ Yes X No	Total area occupied by any structure. Approx. 4,139,200 Square Feet
How far will the structure be placed channelward from the back edge of the dune? N/A feet	How far will the structure be placed channelward from the back edge of the beach? N/A feet

19. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCMENT, or TEMPORARY OR PERMANENT RELOCATIONS

If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at: http://www.nao.usace.army.mil/Missions/Regulatory/UnifiedStreamMethodology.aspx *or* http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx.

For all projects proposing stream restoration provide a completed Natural Channel Design Review Checklist and Selected Morphological Characteristics form. These forms and the associated manual can be located at: https://www.fws.gov/chesapeakebay/StreamReports/NCD%20Review%20Checklist/Natural%20Channel%20Design%20Checklist%20Doc%20V2%20Final%2011-4-11.pdf

Has the stream restoration project been designed by a local, state, or federal agency? ____ Yes ____ No. If yes, please include the name of the agency here: _____.

Is the agency also providing funding for this project? _____ Yes _____ No

Stream dimensions at impact site (length and average width in linear feet, and area in square feet):
L: _____(feet) AW:_____ (feet) Area:_____ (square feet)

Contributing drainage area: _____acres *or* _____square miles

20. UTILITY CROSSINGS (Continued)

Will there be an excess of excavated material? _____Yes _____No
If so, describe the method that will be undertaken to dispose of, and transport, the material to its permanent disposal location and give that location:

Will any excess material be stockpiled in wetlands? _____Yes _____No
If so, will the stockpiled material be placed on filter fabric or some other type of impervious surface? _____Yes _____No

Will permanent access roads be placed through wetlands/streams? ____Yes _____No
If yes, will the roads be (check one) ☐ at grade ☐ above grade?

Will the utility line through wetlands/waters be continually maintained (e.g. via mowing or herbicide)? ____Yes _____No
If maintained, what is the maximum width? _____feet

21. ROAD CROSSINGS

Have you conducted hydraulic studies to verify the adequacy of the culverts? _____Yes X_____No
If so, please attach a copy of the hydraulic study/report.
Virginia Department of Transportation (VDOT) standards require that the backwater for a 100 year storm not exceed 1 foot for all road, culvert, and bridge projects within FEMA-designated floodplains. Virginia Department of Environmental Quality (DEQ) requires pipes and culverts 24 inches or less in diameter to be countersunk three inches below the natural stream bed elevations, and pipes and culverts greater than 24 inches to be countersunk at least six inches below the natural stream bed elevations. Hydraulic capacity is determined based on the reduced capacity due to the countersunk position.

Will the culverts be countersunk below the stream bottom? _____Yes X_____No. If no, explain:

Culverts are not associated with stream channels, therefore not required to be countersunk.

If the project entails a bridged crossing and there are similar crossings in the area, what is the vertical distance above mean high water, mean low water, or ordinary high water mark of those similar structures? N/A_____feet above N/A_____
For all bridges proposed over navigable waterways (including all tidal water bodies), you will be required to contact the U.S. Coast Guard to determine if a permit is required of their agency.

On separate sheets of paper, describe the materials to be used, the method of construction (including the use of cofferdams), the sequence of construction events, and if bedrock conditions may be encountered. Include cross-sections and profile plans of the culvert crossings including wing walls or rip rap.

22. IMPOUNDMENTS, DAMS, AND STORMWATER MANAGEMENT FACILITIES

If the impoundment or dam is a component of a water withdrawal project, also complete Sections 24 through 26.

Will the proposed impoundment, dam, or stormwater management facility be used for agricultural purposes (e.g., in the operation of a farm)? For DEQ permitting purposes, a farm is considered to be a property or operation that produces goods for market.
___ Yes X___ No

What type of materials will be used in the construction (earth, concrete, rock, etc.)? TBD_____

What is the source of these materials? TBD_____

Provide the dimensions of proposed impoundment, dam, or stormwater management facility, including the height and width of all structures.

TBD

Storage capacity* of impoundment: TBD_____acre-feet *should be given for the normal pool of recreational or farm ponds, or design pool for stormwater management ponds or reservoirs (the elevation the pond will be at for the design storm, e.g., 10-year, 24-hour storm)	Surface area** of impoundment: TBD_____acres **should be given for the normal pool of recreational or farm ponds, or design pool for stormwater management ponds or reservoirs (the elevation the pond will be at for the design storm, e.g., 10-year, 24-hour storm)

22. IMPOUNDMENTS, DAMS, AND STORMWATER MANAGEMENT FACILITIES (Continued)

Is the proposed project excluded from the Virginia Dam Safety Regulations? X Yes ___ No ___ Uncertain

If not excluded, does your proposed project comply with the Virginia Dam Safety Regulations? ___ Yes ___ No ___ Uncertain

Does the proposed design include a vegetation management area per §10.1-609.2? ___ Yes ___ No X Uncertain
If your answer to these questions is no or uncertain, you should contact the Virginia Department of Conservation and Recreation's Dam Safety Program at (804) 371-6095, or reference the regulations on the Web at http://www.dcr.virginia.gov/dam_safety_and_floodplains/index.shtml

For stormwater management and flood control facilities:

Design storm event: _____year storm Retention time: _____hours

Current average flow (flow rate under normal rainfall conditions): _____cfs

Method used to derive average flow: _____

Proposed peak outflow for the design storm provided above: _____cfs

Has the facility been designed as an Enhanced Extended Detention Basin or an Extended Detention Basin in accordance with the Minimum Standard 3.07 of the Virginia Stormwater Management Handbook, Volume I (published by the Virginia Department of Conservation and Recreation, 1999), or in accordance with the latest version of this handbook? _____Yes _____No

Will the impoundment structure be designed to pass a minimum flow at all times? _____Yes _____No

If so, please give the minimum rate of flow: _____cfs

What is the drainage area upstream of the proposed impoundment? _____square miles

How much of your proposed impoundment structure will be located on the stream bed? _____square feet

What is the area of vegetated wetlands that will be excavated and/or back-flooded by the impoundment? _____ square feet

What is the *area and length* of streambed that will be excavated and/or back-flooded by the impoundment? _____ square feet
_____ linear feet

Are fish ladders being proposed to accommodate the passage of fish? _____Yes _____No

23. OUTFALLS NOT ASSOCIATED WITH PROPOSED WATER WITHDRAWAL ACTIVITIES

Type and size of pipe(s): TBD

Daily rate of discharge: _____mgd

If the discharge will be thermally-altered, provide the maximum temperature: _____

Contributing drainage area: _____square miles Average daily stream flow at site:_____cfs

Have you received a Virginia Discharge Elimination System (VPDES) permit for the proposed project? ___ Yes ___ No.

If yes, please provide the VPDES permit number: _____.

If no, is there a permit action pending? ___ Yes ___ No. If pending, what is the facility name? _____.

APPENDIX C

Chesapeake Bay Preservation Act Information

Please answer the following questions to determine if your project is subject to the requirements of the Bay Act Regulations:

1. Is your project located within Tidewater Virginia? X Yes ____No (See map on page 31) - If the answer is "no", the Bay Act requirements do not apply; if "yes", then please continue to question #2.

2. Please indicate if the project proposes to impact any of the following Resource Protection Area (RPA) features:

   ____ Tidal wetlands,

   ____ Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow,

   ____ Tidal shores,

   ____ Other lands considered by the local government to meet the provisions of subsection A of 9VAC25-830-80 and to be necessary to protect the quality of state waters (contact the local government for specific information),

   ____ A buffer area not less than 100 feet in width located adjacent to and landward of the components listed above, and along both sides of any water body with perennial flow.

If the answer to question #1 was "yes" and any of the features listed under question #2 will be impacted, compliance with the Chesapeake Bay Preservation Area Designation and Management Regulations is required. **The Chesapeake Bay Preservation Area Designation and Management Regulations** are enforced through locally adopted ordinances based on the Chesapeake Bay Preservation Act (CBPA) program. Compliance with state and local CBPA requirements mandates the submission of a ***Water Quality Impact Assessment (WQIA)*** for the review and approval of the local government. Contact the appropriate local government office to determine if a WQIA is required for the proposed activity(ies).

The individual localities, not the DEQ, USACE, or the Local Wetlands Boards, are responsible for enforcing the CBPA requirements and, therefore, local permits for land disturbance are not issued through this JPA process. **Approval of this wetlands permit does not constitute compliance with the CBPA regulations nor does it guarantee that the local government will grant approval for encroachments into the RPA that may result from this project.**

Notes for all projects in RPAs

Development, redevelopment, construction, land disturbance, or placement of fill within the RPA features listed above requires the approval of the locality and may require an exception or variance from the local Bay Act ordinance. Please contact the appropriate local government to determine the types of development or land uses that are permitted within RPAs.

Pursuant to 9VAC25-830-110, *on-site delineation of the RPA is required for all projects in CBPAs.* Because USGS maps are not always indicative of actual "in-field" conditions, they may not be used to determine the site-specific boundaries of the RPA.

Notes for shoreline erosion control projects in RPAs

Re-establishment of woody vegetation in the buffer will be required by the locality to mitigate for the removal or disturbance of buffer vegetation associated with your proposed project. Please contact the local government to determine the mitigation requirements for impacts to the 100-foot RPA buffer.

Pursuant to 9VAC25-830-140 5 a (4) of the Virginia Administrative Code, shoreline erosion projects are a permitted modification to RPAs provided that the project is based on the "best technical advice" and complies with applicable permit conditions. In accordance with 9VAC25-830-140 1 of the Virginia Administrative Code, the locality will use the information provided in this Appendix, in the project drawings, in this permit application, and as required by the locality, to make a determination that:

1. Any proposed shoreline erosion control measure is necessary and consistent with the nature of the erosion occurring on the site, and the measures have employed the "best available technical advice"
2. Indigenous vegetation will be preserved to the maximum extent practicable
3. Proposed land disturbance has been minimized
4. Appropriate mitigation plantings will provide the required water quality functions of the buffer (9VAC25-830-140 3)
5. The project is consistent with the locality's comprehensive plan
6. Access to the project will be provided with the minimum disturbance necessary.

APPENDIX B:
PRELIMINARY JURISDICTIONAL DETERMINATION INFORMATION

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

October 30, 2019

PRELIMINARY JURISDICTIONAL DETERMINATION

Southern Virginia Regulatory Section
NAO-2012-02369 (Totopotomoy Creek)

Mr. Robert Cox, Jr., Air Park Associates
C/O RK&K LLP
1001 Boulders Parkway, Suite 300
Richmond, VA 23223

Dear Mr. Cox:

This letter is in response to your request for a preliminary jurisdictional determination of waters of the United States, including wetlands on a site containing approximately 217.33 acres of land located on the west line of Sliding Hill Road and the south line of Ashcake Road, Hanover County, Virginia. Your request has been reviewed.

The enclosed map prepared by RK&K LLP, entitled, "Air Park Associates, Hanover County, Aerial Topo," dated 5-29-19, without a revision date, last revised and received by this office on 10-22-19, and on file at this office provides the accurate location of waters of the United States, including wetlands. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual, the Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Eastern Mountains and Piedmont Region, the presence of positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation, and the presence of an ordinary high water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters and wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination, if you agree with the determination, or you may request and obtain an approved jurisdictional determination.

This delineation of waters and wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact Ms. Elaine Holley in the Richmond Field Office at 9100 Arboretum Parkway, Suite 235, Richmond, Virginia 23236, (804) 323-3781, elaine.k.holley@usace.army.mil. lts;m,,,,,,,,,,,,,,,,,,,,

Sincerely,

Elaine K. Holley, Environmental Scientist
Southern Virginia Regulatory Section

Copies furnished:

Chesterfield County Department of Environmental Engineering, Chesterfield, VA
Virginia Department of Environmental Quality, Glen Allen, VA

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 10-17-19

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Mr. Robert Cox, Jr., Air Park Associates

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: 2012-02369 Camptown Races

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: Virginia County/parish/borough: Hanover City:

Center coordinates of site (lat/long in degree decimal format):

Lat.: 37.711868 Long.: -77.42516

Universal Transverse Mercator: NAD 83

Name of nearest waterbody: South Anna River

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- [x] Office (Desk) Determination. Date: 10-30-19
- [ ] Field Determination. Date(s): 10-16-19

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
				PFO	
				PEM	
				POW	
				R3	
				R4	

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: _____.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [x] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____.
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: _____.
- [ ] Natural Resources Conservation Service Soil Survey. Citation: _____.
- [ ] National wetlands inventory map(s). Cite name: _____.
- [ ] State/local wetland inventory map(s): _____.
- [ ] FEMA/FIRM maps: _____.
- [ ] 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): _____.
  or [x] Other (Name & Date): _____.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [ ] Other information (please specify): _____.

<u>IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.</u>

_____	_____
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Regulatory GIS Report

Report Date: 30-OCT-19

Center Coordinate: 37.712219, -77.424257

Subbasin (HUC 8) Watershed Boundary

HUC 8 Number	HUC 8 Name	Acres	Wetland Acres	% Wetlands	Stream Miles
02080106	Pamunkey	941997.93699505	90786.6696389	9.63771036	4054.87

1 - 1

County/City

Locality Name
Hanover

1 - 1

ABPP Associated Historical Places

none

ABPP Core Area 2014

none

ABPP Potential National Register Areas 2014

War	Name	Site
CIVIL WAR	HANOVER COURT HOUSE	VA013

1 - 1

ABPP Study Areas 2014

War	Name	Site
CIVIL WAR	HANOVER COURT HOUSE	VA013

1 - 1

CCB Bald Eagle Nest (2018)

none

CCB Bald Eagle Nest (2018) - 660' Buffer

none

FEMA 100-yr (1% Annual Chance) Floodplain

none

NAO Dredged Material Placement Area

none

NAO Federal Navigation Channel

none

NAO Navigation Project Authorization Boundary

none

NAB Federal Navigation Channel

none

NAO Flood Risk Management Project Location

none

NAO Oyster Reefs

none

NAO Real Estate Land Parcels (Civil Works)

none

NAO Real Estate Land Parcels (Military)

none

NAO Reference Well Site

none

NAO Tribal Interests

Tribe	Locality
Catawba	Hanover County
Upper Mattaponi Tribe	Hanover County
Delaware Nation	Hanover County
Pamunkey	Hanover County
Monacan Indian Nation	Hanover County

1 - 5

NMFS Atlantic Sturgeon Critical Habitat

none

NMFS Atlantic Large Whales

none

NMFS Sea Turtles

none

NMFS Atlantic Sturgeon

none

NMFS Shortnose Sturgeon

none

NMFS Essential Fish Habitat

none

NRCS Wetlands Determination (WETS) Station

none

NRCS Soil Survey (SSURGO)

Map Unit Symbol	Map Unit Name	Drainage Class	Hydric Rating
7	Atlee loam, 0 to 4 percent slopes	Moderately well drained	Partially hydric
13C2	Caroline-Dogue complex, 7 to 15 percent slopes, eroded	Well drained	Partially hydric
24	Dunbar fine sandy loam	Somewhat poorly drained	Partially hydric
70C	Udults-Ochrepts complex, sloping	Well drained	Partially hydric
18	Coxville loam	Poorly drained	All hydric
7	Atlee loam, 0 to 4 percent slopes	Moderately well drained	Partially hydric
47A	Norfolk fine sandy loam, 0 to 2 percent slopes	Well drained	Partially hydric
25A	Duplin fine sandy loam, 0 to 2 percent slopes	Moderately well drained	Partially hydric
47A	Norfolk fine sandy loam, 0 to 2 percent slopes	Well drained	Partially hydric
35B	Helena-Colfax complex, 2 to 7 percent slopes	Moderately well drained	Partially hydric
25A	Duplin fine sandy loam, 0 to 2 percent slopes	Moderately well drained	Partially hydric
70C	Udults-Ochrepts complex, sloping	Well drained	Partially hydric

47A	Norfolk fine sandy loam, 0 to 2 percent slopes	Well drained	Partially hydric
25A	Duplin fine sandy loam, 0 to 2 percent slopes	Moderately well drained	Partially hydric
13C2	Caroline-Dogue complex, 7 to 15 percent slopes, eroded	Well drained	Partially hydric

1 - 15 **Next**

RIBITS Bank List

none

USACE Recreation Area

none

VDCR Endangered Species

none

VDGIF Anadromous Fish Use Waters

none

VDGIF TE Waters

none

VDGIF Cold Water Stream Survey (CWSS) - Trout Streams

none

VDGIF Colonial Water Birds

none

VDGIF Bald Eagle Concentration Area

none

VDGIF Federal & State Listed Species

none

VDGIF NLEB Roost Trees

none

VDGIF NLEB Winter Habitat

none

VDHR Archaeological Resources

DHR ID	Site Name	Site Category	Time Period	Restricted	Nr Eligibility	Survey Updated
44HN0326	-	Domestic	18th Century (1700 - 1799)	Restricted: No release	-	16-SEP-13 04.12.40.000000 PM

1 - 1

VDHR Architectural Resources

Dhr Id	Property Name	Address	Historic Name	Nr Eligibility	Survey Updated	Restricted
042-5550	House, 11225 Brook Spring Road (Function/Location)	11225 Brook Spring Road	-	DHR Staff: Not Eligible	19-MAY-16 06.42.43.000000 PM	-
042-5549	Cemetery, off Sliding Hill Road (Function/Location), Garnett Family Cemetery (Historic)	Sliding Hill Road - Alt Route 656	-	DHR Staff: Not Eligible	19-MAY-16 06.42.43.000000 PM	-
042-5285	Dwelling, 9323 Sliding Hill Road (Function/Location)	9323 Sliding Hill Road	-	DHR Staff: Not Eligible	19-MAY-16 06.42.43.000000 PM	Unrestricted
042-5548	House, 9303 Sliding Hill Road (Function/Location)	9303 Sliding Hill Road - Alt Route 656	-	DHR Staff: Not Eligible	19-MAY-16 06.42.43.000000 PM	-
042-5019	Hanover Court House Battlefield (Historic), Hanover Court House Park, US 301 (Historic/Location)	Route 651, Route 657, US 301	-	DHR Staff: Potentially Eligible	16-SEP-13 04.55.24.000000 PM	Unrestricted
042-0270	J. Prestone House (Historic)	Rt. 657 At Rt. 741	-	-	16-SEP-13 04.55.24.000000 PM	Unrestricted
042-5284	Dwelling,9209 Sliding Hill Road (Function/Location)	9209 Sliding Hill Road	-	-	16-SEP-13 04.55.24.000000 PM	Unrestricted
042-0271	Prestone House (Historic)	Rte 741	-	-	16-SEP-13 04.55.24.000000 PM	Unrestricted
042-	Candlewick (Current), Ford House (Historic),				16-SEP-13	

0253	House, Route 657 (Function/Location)	Route 657	-	-	04.55.24.000000 PM	Unrestricted

1 - 9

VIMS SAV Beds (2017)

none

VIMS SAV Beds (2016)

none

VIMS SAV Beds (2015)

none

VIMS SAV Beds (2014)

none

VIMS SAV Beds (2013)

none

VIMS SAV Beds (2012)

none

VMRC Oyster Ground Leases

none

VMRC Oyster Ground Applications

none

VMRC Public Baylor Grounds

none

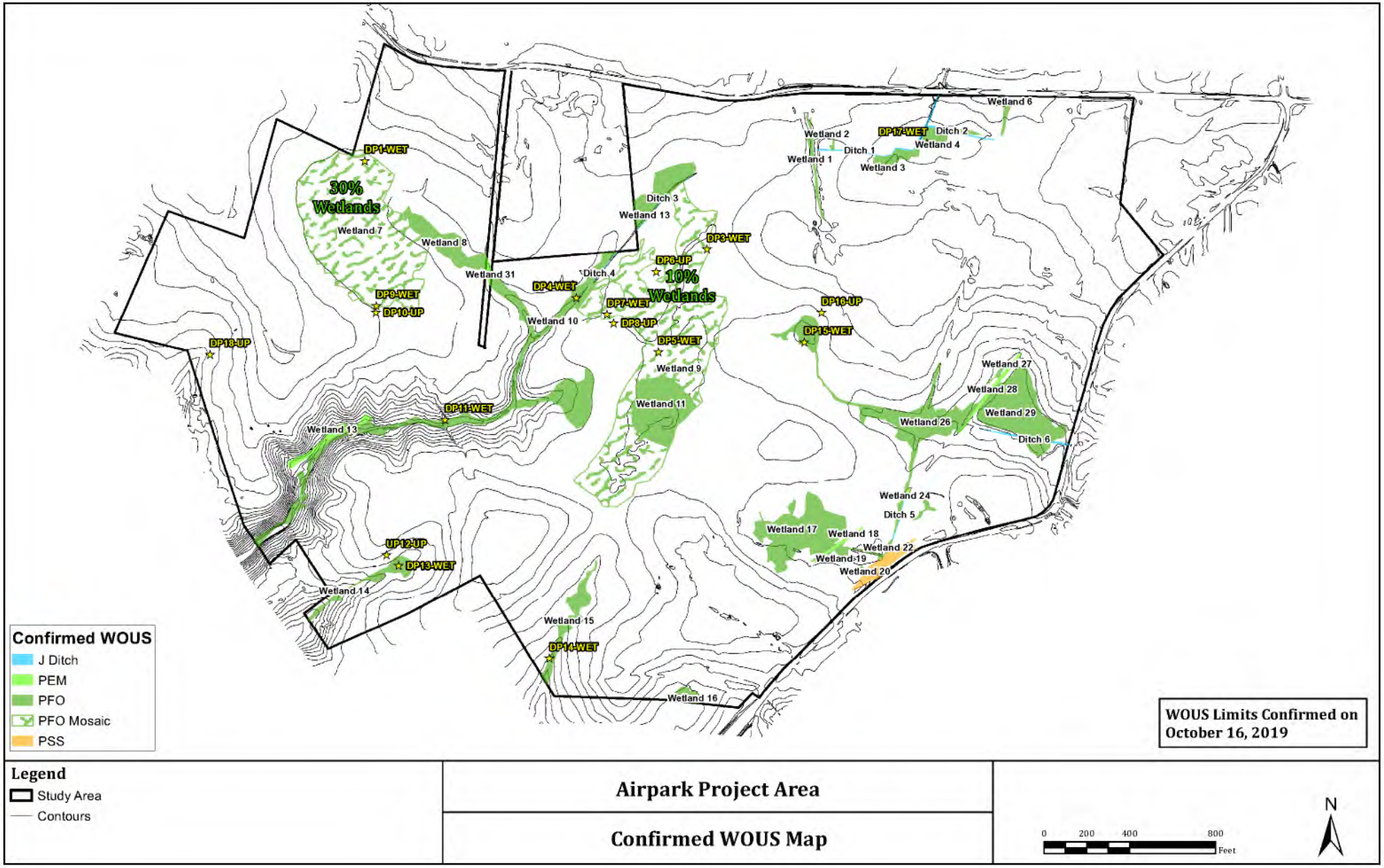
VMRC Public Clamming Grounds

none

NAO Section 408 Permission Review - Navigation

Section 408 Authority DOES NOT apply. No further coordination is needed.

release 1.0



Airpark Project Area

Confirmed WOUS Map

APPENDIX C:
WETLAND MITIGATION CREDIT AVAILABILITY LETTER

Environmental Development Solutions, LLC

18267 Channel Ridge Ct. Leesburg, VA 20176
(571) 233-5830 Fax (703) 997-4444

October 24, 2019

Alissa Bellios
Timmons Group
1001 Boulders Parkway
Suite 300
Richmond, Virginia 23225

RE: Credit Quote
County: Hanover
HUC Zone: 02080106
USACE/DEQ Permit #: TBD

Dear Ms. Bellios;

This letter is to confirm the availability of authorized wetland credits from the Woodford Wetland and Stream Mitigation Bank. Environmental Development Solutions, LLC. has been authorized to transfer credits in the approved service area. Current available credits include the 11.2 wetland credits requested.

The 11.2 wetland credits are available for a $392,000 or $35,000 per wetland credit.

If I can be of further assistance, please feel free to contact me.

Sincerely,

David M. Jordan
Manager

APPENDIX D:
THREATENED AND ENDANGERED SPECIES INFORMATION

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

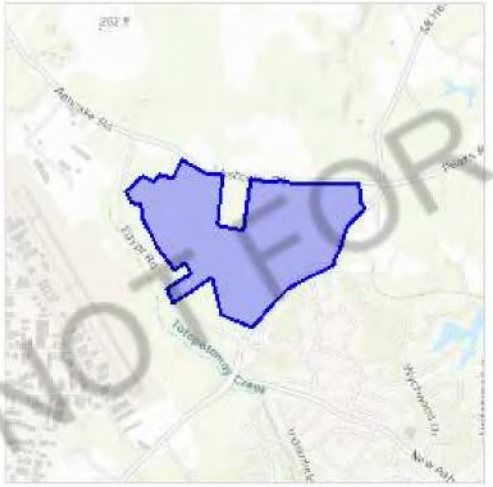
This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Hanover County, Virginia



Local office

Virginia Ecological Services Field Office

(804) 693-6694
(804) 693-9032

6669 Short Lane
Gloucester, VA 23061-4410

http://www.fws.gov/northeast/virginiafield/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

NOT FOR CONSULTATION

Northern Long-eared Bat *Myotis septentrionalis* Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9045

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

NOT FOR CONSULTATION

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Clapper Rail Rallus crepitans This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Oct 31
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

NOT FOR CONSULTATION

Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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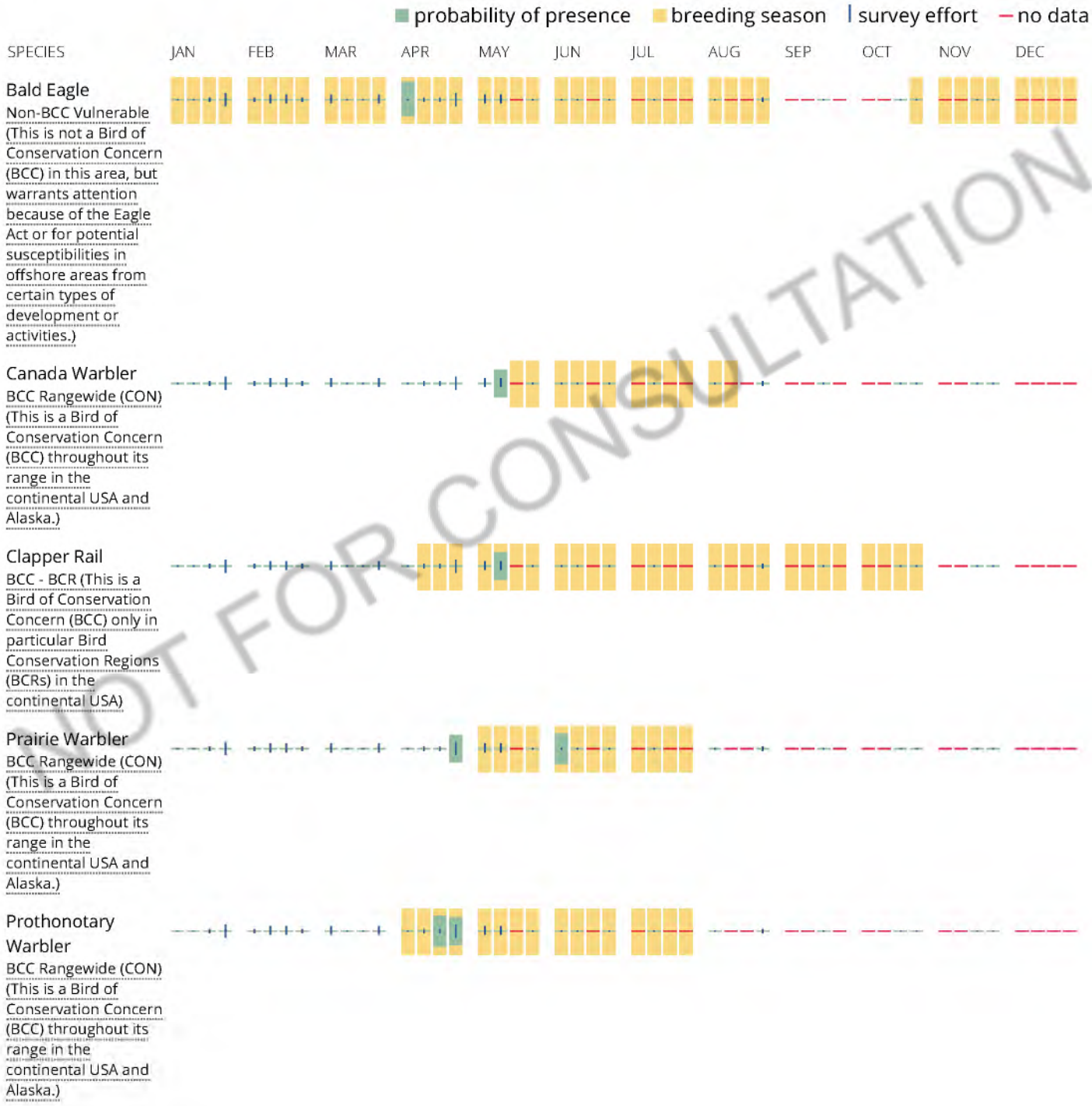
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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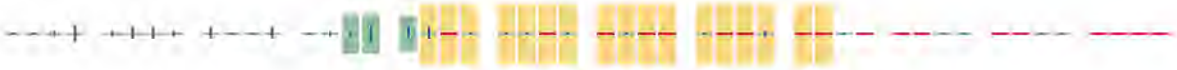
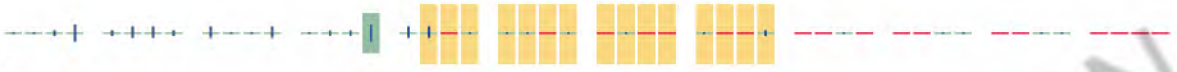
Red-headed Woodpecker
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rusty Blackbird
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

NOT FOR CONSULTATION

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1Fh
- PEM1F

NOT FOR CONSULTATION

FRESHWATER FORESTED/SHRUB WETLAND

- PFO4/1B
- PFO4E
- PFO1/4B
- PFO1/4Eh
- PFO4Eh
- PFO1B
- PFO5Fh
- PFO1C

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

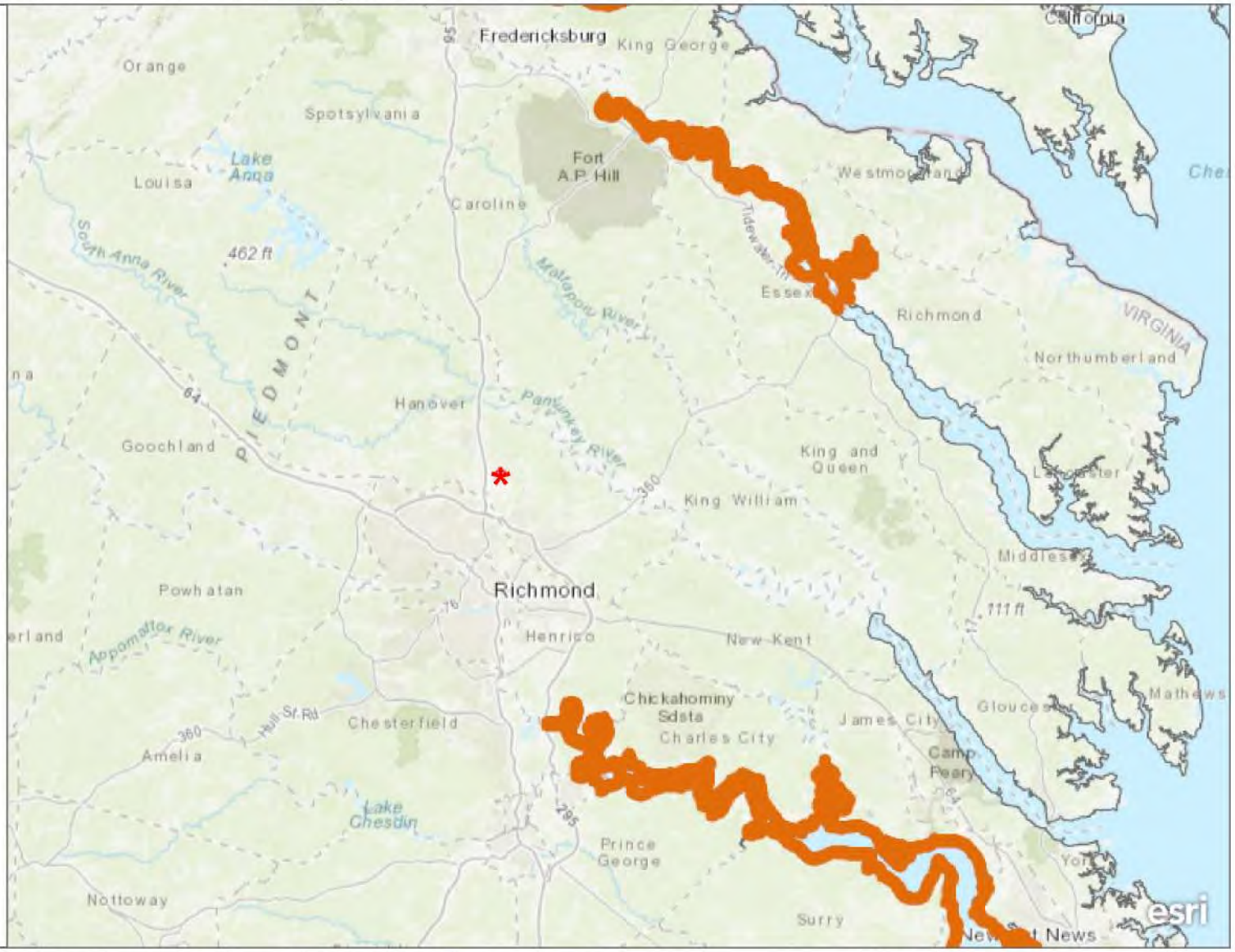
USFWS Bald Eagle Concentration Areas - Virginia

ProjectLimit

*

Eagle Concentration Areas - small scale view

USFWS Northeast Region States



This map depicts designated Bald Eagle Concentration Areas in the State of Virginia. The Intent of this map is to provide information to the public about shoreline areas that ar ...

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS

CCB Mapping Portal

Layers: VA Eagle Nest Locator, VA Eagle Nest Buffers, Eagle Roosts, Eagle Roost Polygons, Eagle Roost Buffers

Map Center [longitude, latitude]: [-77.35267639160156, 37.72836644908416]

Map Link:
https://www.ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&layer=VA+Eagle+Nest+Buffers&layer=Eagle+Roosts&layer=Eagle+Roost+Polygons&layer=Eagle+Roost+Buffers&zoom=11&lat=37.72836644908416&lng=-77.35267639160156&legend=legend_tab_4ca7337c-c07d-11e5-93bc-0ecfd53eb7d3&base=Street+Map+%28OSM%2FCarto%29

Report Generated On: 10/11/2019

The Center for Conservation Biology (CCB) provides certain data online as a free service to the public and the regulatory sector. CCB encourages the use of its data sets in wildlife conservation and management applications. These data are protected by intellectual property laws. All users are reminded to view the Data Use Agreement to ensure compliance with our data use policies. For additional data access questions, view our Data Distribution Policy, or contact our Data Manager, Marie Pitts, at mlpitts@wm.edu or 757-221-7503.

VaFWIS Initial Project Assessment Report Compiled on 8/9/2019, 7:28:08 AM

Help

Known or likely to occur within a **2 mile radius around point 37.7115870 -77.4235424** in **085 Hanover County, VA**

View Map of Site Location

442 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (19 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon		BOVA
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060029	FT	IIa	Lance, yellow	Elliptio lanceolata		BOVA
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050034	SE	Ia	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis		BOVA
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
060081	ST	IIa	Floater, green	Lasmigona subviridis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA
040052		IIa	Duck, American black	Anas rubripes		BOVA
040029		IIa	Heron, little blue	Egretta caerulea caerulea		BOVA
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA
040140		IIa	Woodcock, American	Scolopax minor		BOVA
060071		IIa	Lampmussel, yellow	Lampsilis cariosa		BOVA
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA
010131		IIIa	Eel, American	Anguilla rostrata	Yes	BOVA,SppObs

To view **All 442 species** View 442

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;
II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need;
IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 8/9/2019, 7:28:08 AM I987575.0 report=IPA searchType= R dist= 3218 poi= 37.7115870 -77.4235424

PixelSize=64; Anadromous=0.027228; BECAR=0.021561; Bats=0.020348; Buffer=0.100988; County=0.085969; Impediments=0.03559; Init=0.190851; PublicLands=0.031366; SppObs=0.164974; TEWaters=0.026881; TierReaches=0.02834; TierTerrestrial=0.045269; Total=0.877638; Tracking_BOVA=0.154502; Trout=0.02708

Site Location

37,42,41.7 -77,25,24.7
is **the Search Point**

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2 Search distance miles radius

Search Point is at map center

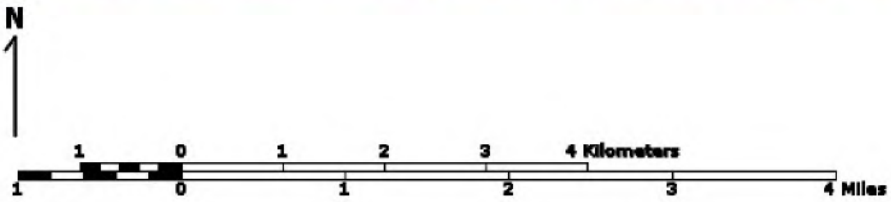
Base Map Choices
Color Aerial Photography ▼

Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

back | Refresh Browser Page | Help

Map Click: Pan Id M | Map Scale: In Zoom Out | Screen Size: Small Size Big



Point of Search 37,42,41.7 -77,25,24.7
Map Location 37,42,41.7 -77,25,24.7

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: Color Aerial Photography 2002 - Virginia Base Mapping Program, Virginia Geographic Information Network

Map projection is UTM Zone 18 NAD 1983 with left 281575 and top 4181380. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents

T & E Waters

Federal

State

Predicted Habitat WAP Tier I & II

Aquatic

Terrestrial

Trout Waters

Class I - IV

Class V - VI

Anadromous Fish Reach

Confirmed

Potential

23 Impediment

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

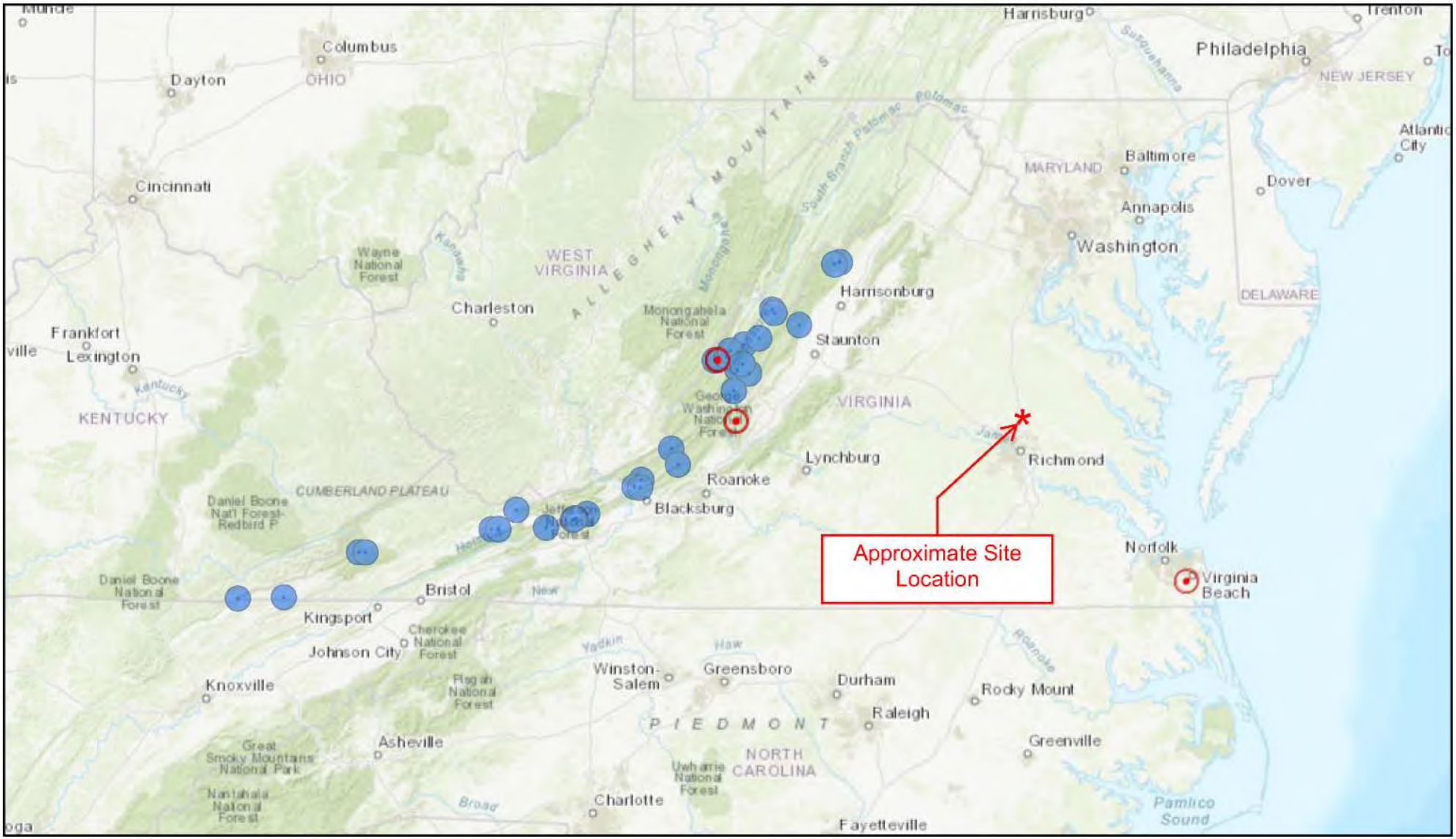
Bald Eagle Concentration Areas and Roosts

9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2019-08-09 07:27:26 (qa/qc March 21, 2016 12:20 - tn=987575.0 dist=3218 I)
$poi=37.7115870 -77.4235424

| DGIF | Credits | Disclaimer | Contact vafwis_support@dgif.virginia.gov |Please view our privacy policy |
© 1998-2019 Commonwealth of Virginia Department of Game and Inland Fisheries


Approximate Site Location
Columbus
OHIO
Dayton
Cincinnati
Harrisburg
Philadelphia
NEW JERSEY
Trenton
Atlantic City
Baltimore
MARYLAND
Dover
Annapolis
Washington
DELAWARE
WEST VIRGINIA
ALLEGHENY MOUNTAINS
Charleston
Harrisonburg
Staunton
VIRGINIA
Frankfort
Lexington
KENTUCKY
Lynchburg
Richmond
Roanoke
Blacksburg
CUMBERLAND PLATEAU
Norfolk
Virginia Beach
Bristol
Kingsport
Johnson City
Knoxville
Asheville
Winston-Salem
Greensboro
Durham
Raleigh
Rocky Mount
Greenville
PIEDMONT
NORTH CAROLINA
Charlotte
Fayetteville
Pamlico Sound

The Virginia Department of Conservation and Recreation's Department of Natural Heritage (DCR-DNH) Database Search indicates that no results found for Federal or State Threatened and Endangered species. The search occurred on October 11, 2019 with the criteria listed below.

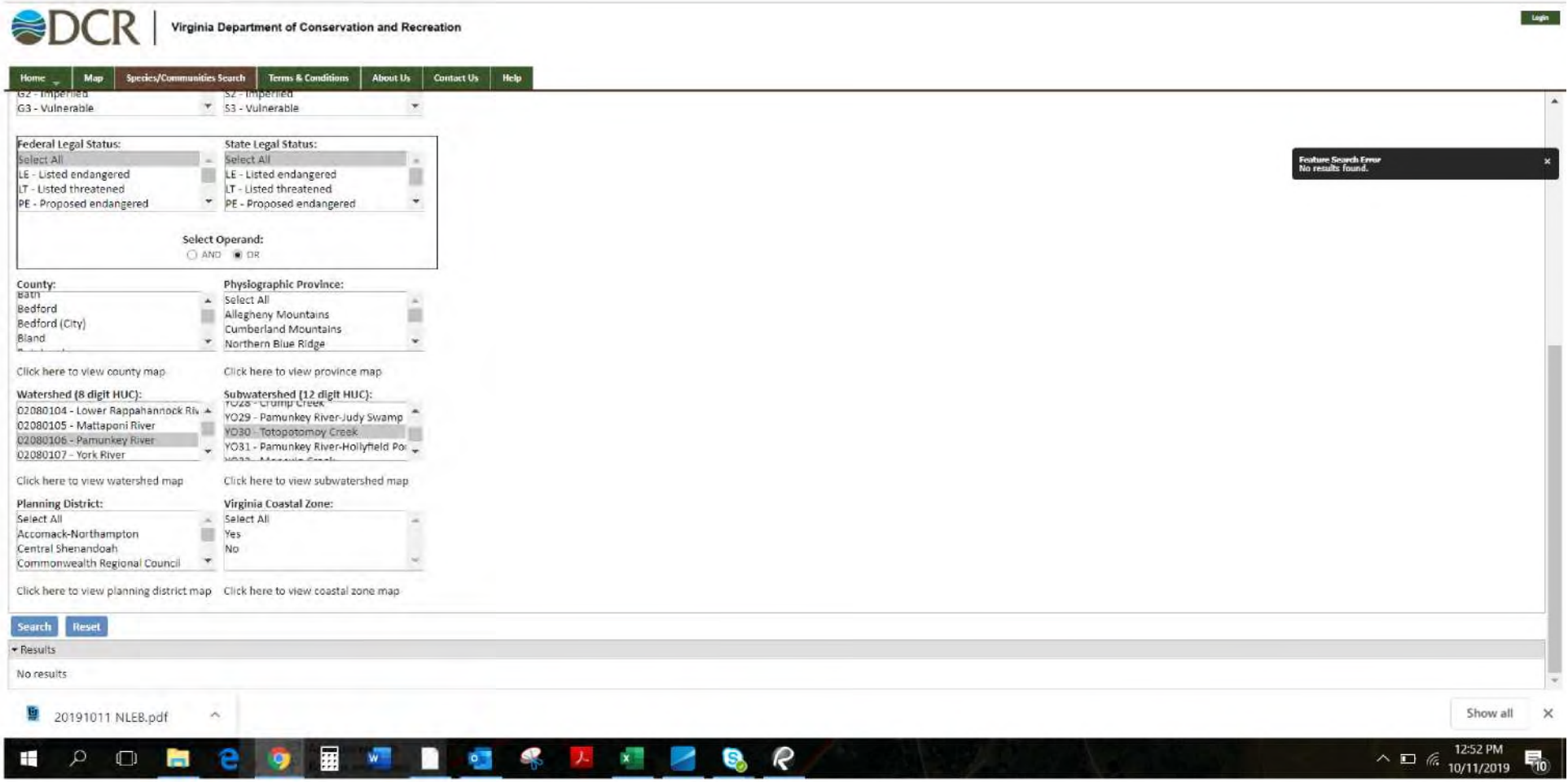
Taxonomic Group: Select All

Federal Legal Status: Select All

State Legal Status: Select All

Watershed (8-digit HUC): 02080106 – Pamunkey River

Subwatershed (12-digit HUC): YO30 – Totopotomoy Creek



Swamp Pink, *Helonias bullata* flower photo: Steve Croy

Survey for Swamp-pink (*Helonias bullata*)

Hanover County, Virginia

June 17, 2019

Submitted to: Eli Wright, Timmons Group

Submitted by: J. Christopher Ludwig, Seedbox consulting

804-878-2272, ludwigia.jc@gmail.com

INTRODUCTION: Formerly considered a member of the Liliaceae (Lily family) but now placed into the more tightly-circumscribed Heloniadaceae (Swamp-pink family), Helonias bullata (Swamp-pink) is a rare, perennial evergreen herb of the mid-Atlantic and northeastern United States. Due to its rarity, the species was federally-listed as Threatened in 1988 under the U.S. Endangered Species Act as administered by the U.S. Fish and Wildlife Service. Subsequently, the species was state listed as Endangered as administered by the Virginia Department of Agriculture and Consumer Services (VDACS) under the Virginia Endangered Plant and Insect Species Act.

As the photo above suggests, Swamp-pink is striking when in flower, which, on Virginia's Coastal Plain, takes place in April. Dense flower clusters, sometimes as long as 3 inches, are composed of small, pink flowers with lilac-colored anthers. The clusters are found at the end of a long, hollow, leafless flower stem that can range from 8-35 inches long at flowering and can elongate to 60 inches by the time seeds mature.

If flowering or fruiting stems are not in evidence, the plant is still conspicuous as its rosettes of clustered, large basal leaves are readily apparent. The fresh leaves emerge during the flowering period and persist through the winter and into the next spring. The young, strap-like leaves are

bright green and may be 3-10 inches long; older dark green leaves may reach a length of 16 inches. During the winter, the leaves sometimes turn red-brown and often lie flat on the ground.

Swamp-pink is found in perennially saturated, spring-fed, nutrient-poor, shrub swamps and forested wetlands. Typically, swamp pink grows with such species as skunk cabbage, red maple, spicebush, greenbrier, black gum, cinnamon fern, royal fern and various wetland sedge species. It requires stable water levels and can tolerate only brief or infrequent flooding.

Swamp-pink occurs in New Jersey, Delaware, Maryland, Virginia, the Carolinas, and Georgia. Formerly, it also occurred in New York, but is now extirpated there. Northern populations are found primarily in the coastal plain; southern populations are concentrated in the mountains. Populations of swamp pink are found in the mountains and the coastal plain of Virginia and have been recorded in Augusta, Nelson, Caroline, and Henrico counties.

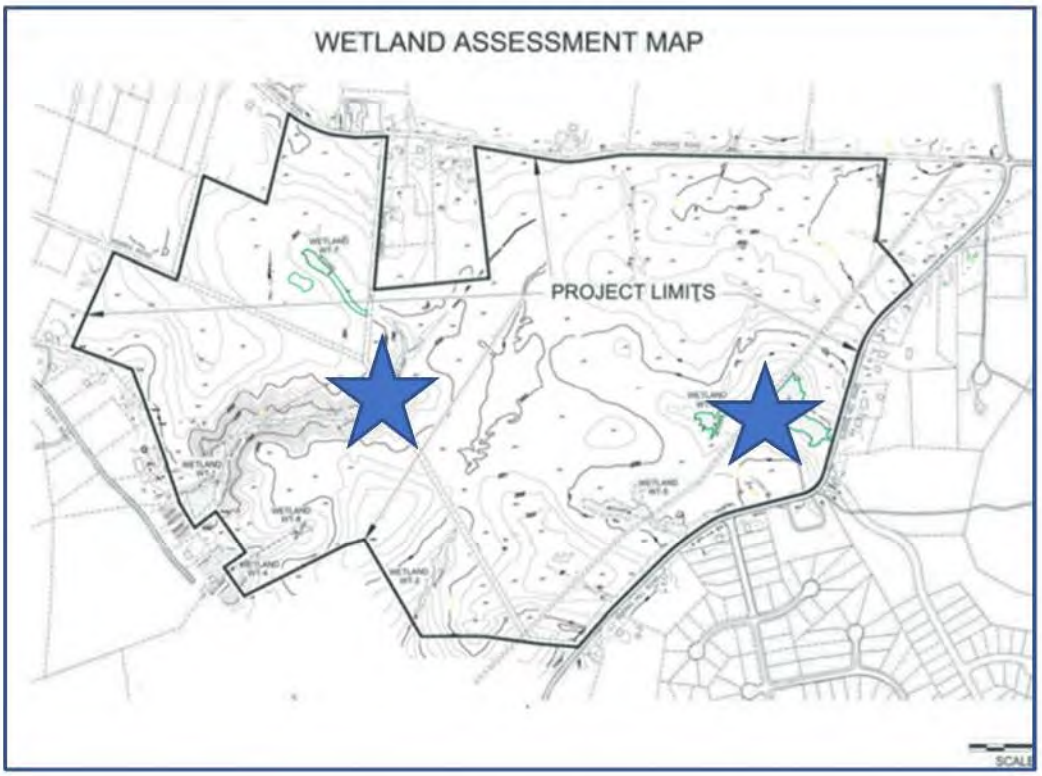


Figure 1: Tract and previously-delineated wetlands. Blue stars show locations of wetlands surveyed for Swamp-pink.

HISTORY OF WORK: On June 4, 2019, Eli Wright of the Timmons Group inquired as to whether Chris Ludwig of Seedbox Consulting was available to conduct a survey for Swamp-pink on a wooded tract just east of the Hanover County Airport south of Ashcake Road and northeast of Sliding Hill Road (figure 1). Ludwig is on the approved surveyors list maintained by

the Gloucester field office of the U.S. Fish and Wildlife Service. After negotiations and field planning, the survey was subsequently conducted and this report is herein submitted.

SURVEY METHOD: On June 12, 2019, Chris Ludwig joined Eli Wright to survey for Swamp-pink on the tract. After discussion of habitat characteristics, Ludwig and Wright visited wetlands on the property that had the highest probability of providing suitable habitat (see figure 1.) After surveying these areas and discussions by Wright and Ludwig of the conditions of the surveyed and non-surveyed wetlands as well as an independent examination of the topographic characteristics, vegetation, and aerial photos of the site, Ludwig determined that no other wetlands required visitation due to the lack of habitat for this species.

Surveys consisted of field reconnaissance on foot looking for any areas of suitable habitat in the surveyed wetlands. Plant species associated with *Helonias bullata* were noted.

If Swamp-pink had been found, further data would be gathered including the precise location of all plants (via gps), associated species, habitat conditions, and population status.

FINDINGS: During June 12, 2019 surveys, **no Swamp Pink was found on the tract, nor was the habitat judged to be of sufficient quality to maintain a population of *Helonias bullata***. Swamp-pink is only known to occur in wetlands with relatively robust perennial spring water seepage occurring over a broad area. The surveyed wetlands of the tract had next to no perennial seepage (probably due to the relatively high topographic position and lack of topographic relief on the tract.)

The lack of habitat suitability was also in evidence by the scarcity or outright absence of species associated with *Helonias bullata*. Most striking is that no skunk cabbage (*Symplocarpus foetidus*) was found in the surveyed wetlands. Skunk cabbage co-occurs with Swamp-pink at virtually every known Swamp-pink site. Also telling was the near absence of two fern species heavily assosciated with Swamp-pink, namely Cinnamon Fern (*Osmunda cinnamomea*) and Royal Fern (*Osmunda regalis*) as well as the near absence or absence of many sedge species known to occur with Swamp-pink at most coastal plain sites including *Carex atlantica* and Carex folliculata.

In summary, activities occurring on this tract will not negatively impact *Helonias bullata* (Swamp-pink) at the tract as no *Helonias bullata* is known to be present.

APPENDIX E:
CULTURAL RESOURCES INFORMATION

HANOVER COUNTY BRANCH
ASSOCIATION FOR THE PRESERVATION OF VIRGINIA ANTIQUITIES

Mr. Robert A. Cox, Jr.
P. O. Box 500
Richmond, VA 23218-0500

Dear Mr. Cox:

I am writing to update you regarding the Merry Oaks Archeological Study being done at that site.

We are continuing efforts in the investigation of Merry Oaks as per our original discussion and proffers. The studies will generally be restricted to the two-acre (2) parcel identified in the compiled plot dated November 14, 1995.

If you have questions please contact me:
Mrs. G. Edmond Massie, III
The Grove, 33115 Mt. Gideon Road, Hanover, VA 23069
1-804-994-2211

Sincerely,

Jayne Massie

Jayne Massie

dwickn

HIRSCHLER, FLEISCHER, WEINBERG, COX & ALLEN
A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

ROBERT A. COX, JR.

RICHMOND
(804) 771-9547

E-MAIL ADDRESS:
bcox@hfwca.com

FEDERAL RESERVE BANK BUILDING
701 EAST BYRD STREET
RICHMOND, VIRGINIA 23219
TELEPHONE: (804) 771-9500
FACSIMILE: (804) 644-0957

MAILING ADDRESS:
P.O. BOX 500
RICHMOND, VIRGINIA 23218-0500

FREDERICKSBURG OFFICE:
606 WILLIAM STREET
FREDERICKSBURG, VA 22401-5749

TELEPHONE: (540) 372-3515
FACSIMILE: (540) 372-3941

January 26, 1998

Mrs. Jayne Massie
Hanover County Branch
Association for the Preservation of Virginia Antiquities
33115 Mount Gideon Road
Hanover, Virginia 23069-2220

Dear Mrs. Massie:

Thank you for your letter dated January 20, 1998.

Air Park Associates, L.P. is pleased to permit the archeological study of the Merry Oaks Tavern site to continue until December 31, 1998, subject, however, to it continuing to be the owner of the property. Should a change of ownership occur, the continuation of the study would be subject to agreement by the new owner.

Sincerely,

Robert A. Cox, Jr., General Partner
Air Park Associates, L.P.

/dt

cc: Mr. Phillip W. Dean

#86236 - 12039.01125

GRAY & PAPE
INC.
CULTURAL RESOURCES CONSULTANTS
1705 EAST MAIN STREET RICHMOND, VIRGINIA 23223 (804) 644-0656 FAX (804)643-8119

DATE: 6·26·96

This fax is directed to: MIKE FIORE

URGENT: YES NO

DEPARTMENT:

COMPANY: GRAY & PAPE, INC. CINCINNATI OHIO

BUSINESS PHONE: (513) 287-7700

FAX PHONE: (513) 287-7703

TOTAL PAGES INCLUDING COVER: -8-

MESSAGE:

SEE ATTACHED TEXT
FOR YOUR MEETING C
JANE MASSIE & MR. COX.

SENT BY: Len Winter **RICHMOND OFFICE**

Sign up in 1920's

INTERIM REPORT OF PHASE I ARCHAEOLOGICAL INVESTIGATIONS OF A TWO-ACRE PARCEL OWNED BY AIR PARK ASSOCIATES, HANOVER COUNTY, VIRGINIA

On May 22, 1996, the cultural resources consulting firm of Gray & Pape, Inc. (Gray & Pape) was contracted by Jane Massie to conduct Phase I archaeological investigations on a two-acre parcel owned by Airpark Associates, Inc. The parcel fronts on the southern side of Ashcake Road, approximately 1500 feet west of its intersection with Sliding Hill Road in Hanover County, Virginia.

Ms. Massie contracted with Gray & Pape to identify the archaeological remains of the Merry Oaks Tavern, a historic inn -- or "ordinary" -- purportedly located on the property. This interim report will present the current findings of archaeological and historical investigations focused on that property. In addition, Gray & Pape will offer specific recommendations regarding the need for additional archaeological investigations on the property.

THE HISTORICAL RECORD

There is an ambiguous scattering of records on Merry Oaks Tavern. Primary documents suggest that historic activity commenced at the site that would later become the Merry Oaks Tavern by the middle eighteenth century. By the 1760s, during the time of the French and Indian War, a tavern -- possibly the original Merry Oaks Tavern -- was constructed. The site is historically notable due its later association with Patrick Henry who assembled the first colonial troops in Virginia on the site on November 11, 1774. The record falls virtually silent during the 18th and 19th centuries. Local informants stated that the structure known as the Merry Oaks Tavern was razed ca. 1915.

The cartographic record which locates the Merry Oaks Tavern site is also ambiguous. Indeed, the site of "Merry Oaks" appears to have been used variously through time to identify either a specific site or the general area surrounding the tavern. Wood's 1820 map of Hanover County illustrates the intersection of two roads which appear to represent the precursors of Ashcake and Sliding Hill Roads. A single-line reference to "Oaks" is marked to the east of this intersection. Four decades later, an 1862 map prepared by Blackford illustrates the "Merry Oaks" to the north of the same major east-west crossing. The 1863 Gilmer map identifies a "Merry Oak Church" northeast of the same intersection with no reference to a tavern of the same name. An 1864 map prepared by Campbell prominently displays "Merry Oaks" in the general area of the intersection but illustrates no proximal structures for reference. A second map prepared by Campbell in 1864 illustrates "Merry Oaks" far to the southeast of the intersection. Lastly, researchers located two maps dated 1892 and 1932, respectively. Neither locates the site of the Merry Oaks Tavern, although the latter does illustrate a Merry Oaks Church at the northwestern corner of what can be presumed to be the intersection of Ashcake and Sliding Hills Roads.

Two insurance maps dated 1801 and 1813, respectively, survive to offer yet more ambiguous information on the Merry Oaks Tavern. Although neither policy is specific about the location of the tavern, each provides important information on the number and relative location of outbuildings that served the larger complex. Unfortunately, the policies provide measurements which are contradictory both to each other as well as the archaeological remains.

The 1801 policy indicates that the wooden tavern with two porches measured 68 feet in length by 18 feet in width. By contrast, the 1813 policy indicates that the dutch roofed structure measured 70 feet in length by 16 feet in width. While structures can and often do increase in length through the construction of additions, the expressed reduction in the gable length of the structure is problematic. Researchers cannot determine if the variance relates to inadequate recording measures of the same structure or correct measurements of different structures. Neither policy indicates whether the structure exhibited a raised foundation to accommodate a basement although a reference attributed to Effie Bowles Kelley in 1929 states that the first story of the Merry Oaks Tavern "was of brick and [the] upper story was lumber or wood."

In 1928, the Hanover Branch of the Association for the Preservation of Virginia Antiquities (APVA) erected a highway marker in front of the current property which commemorated the Merry Oaks Tavern "near" that location. The vague descriptor appears to have led many to believe that the tavern site was proximal to the sign if not fronting on the road. Ms. Lois Wickham conducted an informal interview and site walkover with two African-American men from the neighboring Brown Grove community. The men, in their seventies and eighties, respectively, identified the site specifically as the Merry Oaks Tavern and flagged numerous locations around the property where they recalled certain building types. Their oral testimony suggests that the structure at that location and numerous undiscovered outbuildings were extant on the property until ca. 1915.

THE ARCHAEOLOGICAL RECORD

Phase I archaeological investigations were commenced on May 21, 1996 by archaeologists Robert Wharton and Harry Jaeger. To facilitate recordation and provide a base area map, the team excavated shovel tests at 50-foot-intervals across the 2-acre property. Two general soil profiles were revealed: a 6-9-inch brown topsoil/humus stratum capping a naturalized gray or compacted orange silty soil, respectively. Numerous brick fragments and occasional historic artifacts, dating predominantly to the nineteenth century, were recovered in both types of shovel tests across the property.

A shovel test located approximately 50 feet from Ashcake Road revealed a layer of densely-packed, fragmented brick rubble approximately 1.3 feet below modern grade. The team expanded the shovel test into a 2-foot-wide trench in which hundreds of broken brick bats were observed and removed. A prepared, level natural surface was exposed approximately 3 feet below modern grade. Expanding the feature level approximately 14 feet to the west, excavators encountered an English-bond foundation wall measuring 13-inchs in width (Figure 1). Removing fill southward along the foundation wall, the team discovered a

corner returning to the east. The exposed foundation wall, measuring approximately 5 feet in length, and the discarded-rubble layer clearly define the archaeological remains of an eighteenth-century structure with a English basement. The exposed profile topping the structural remains revealed a 9-inch topsoil stratum capping a 12-inch stratum of compacted orange silty soil which overlay the 15-inch stratum of brick rubble.

A series of probings and expanded shovel test excavations were oriented along the rectilinear lines of the structure. Within several days, the team had exposed the remains of a structure measuring approximately 45 feet in length by 24 feet 6 inches in width (Figure 2) The opposing northeast corner was exposed archaeologically to reveal a similar English bond foundation (Figure 3). The remaining corners were identified on the basis of a visible builder's trench.

Excavation in the northeastern corner revealed that the bricks had been laid atop sterile soil and that an English basement was not present (Figure 3). Excavation northward from the exposed southern wall failed to locate a east-west cross wall delimiting the partial basement A larger builder's trench along the southern gable wall suggests the presence of a chimney and bulkhead entrance. In an attempt to reconcile the historical and archaeological records, excavations conducted to the north and south of the gable walls failed to locate any evidence of additions. Phase I investigations were unable to determine whether a light, frame addition was appended to the long axis of the house. Additional area excavation identified two wells, each measuring approximately 4 feet in width, located north and south of the short axis of the structure, respectively. Neither well was excavated.

A sparse number of artifacts -- and even fewer eighteenth century materials -- was recovered from the brick rubble enclosed within the limits of the basement. By contrast, excavators noted the complete absence of kaolin pipestems, holloware ceramics, and glassware which would typically be represented at the site of a tavern dating to the eighteenth century. On the one hand, such omissions from the material culture record suggest that the identified structure is not the Merry Oaks Tavern. On the other hand, it is important to remember that the structure was occupied as a residence throughout the 19th and early 20th century. The absence of such artifacts may be related to cleaning and uptake over the century of occupation that post dates the heyday of the tavern.

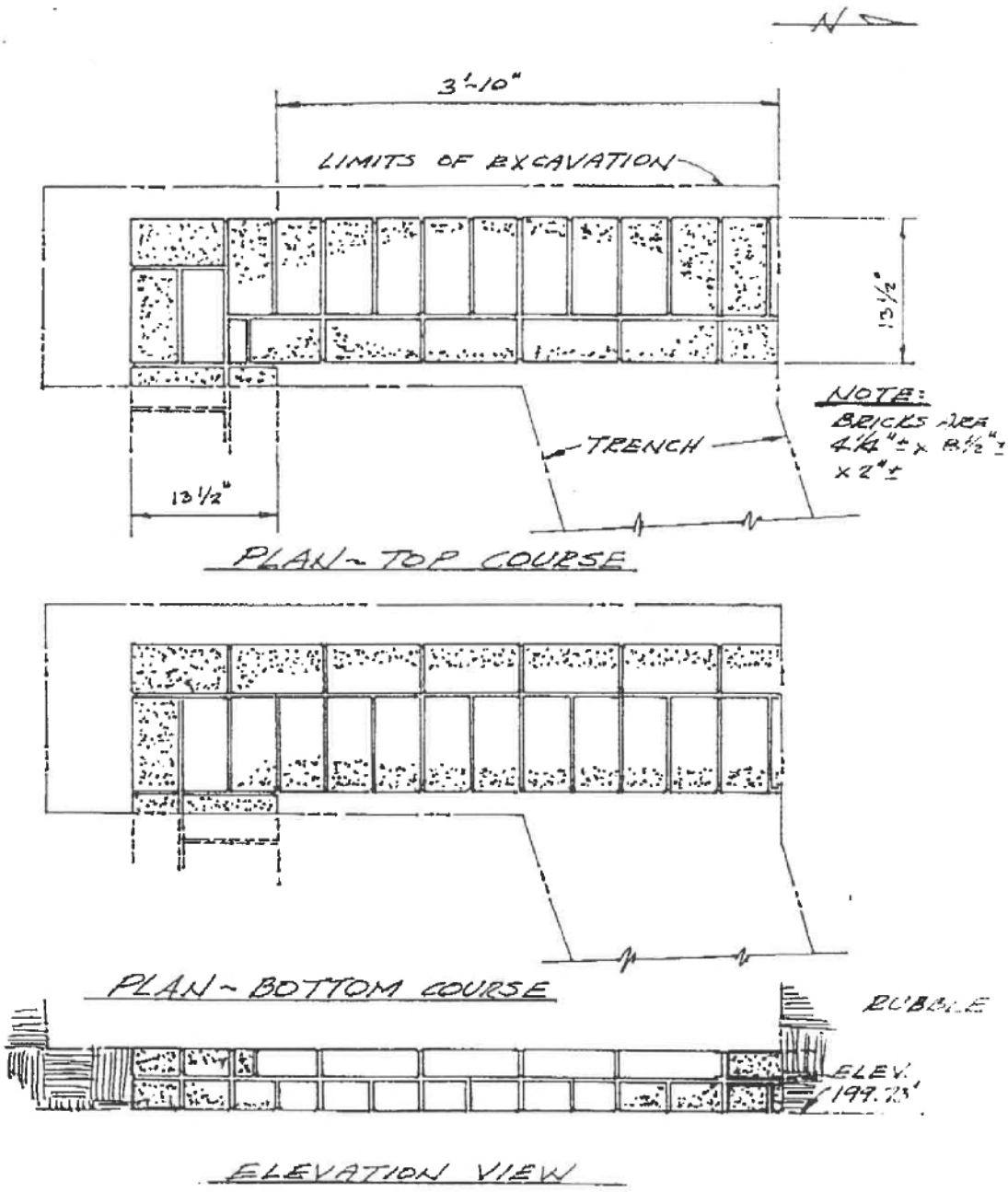
Phase I archaeological investigations were unable to prove definitively that the eighteenth century brick foundation represents the remains of the Merry Oaks Tavern. The greatest discrepancy lies in the measurements of the recovered structure versus those expressed in the historic record. The structure identified archaeologically is too wide and not long enough in comparison to the measurements expressed on the insurance policies.

PHASE II ARCHAEOLOGICAL INVESTIGATIONS

Phase I archaeological investigations identified the remains of an eighteenth century English-bond-foundation structure measuring 45 feet in length by 24 feet 6 inches in width. Artifacts recovered from the confines of the structure date predominantly to the 19th century

Phase I investigations were unable to define this structure as the remains of the Merry Oaks Tavern. As noted earlier, archaeological excavations were concentrated largely within the limits of the structure. Phase II archaeological investigations may be warranted to define activity areas and ancillary structures elsewhere on the property.

Phase II investigations should attempt to expose larger areas in the vicinity of the structure. A program of limited grading and backhoe excavation should enable researchers to identify other cultural resources on the property. The recovery of trash pit features and ancillary structures may provide information that will resolve the issue of whether the Merry Oaks Tavern was located at this site. Moreover, additional excavation on the property may locate the remains of a structure that conforms to the measurements expressed in the insurance policies.

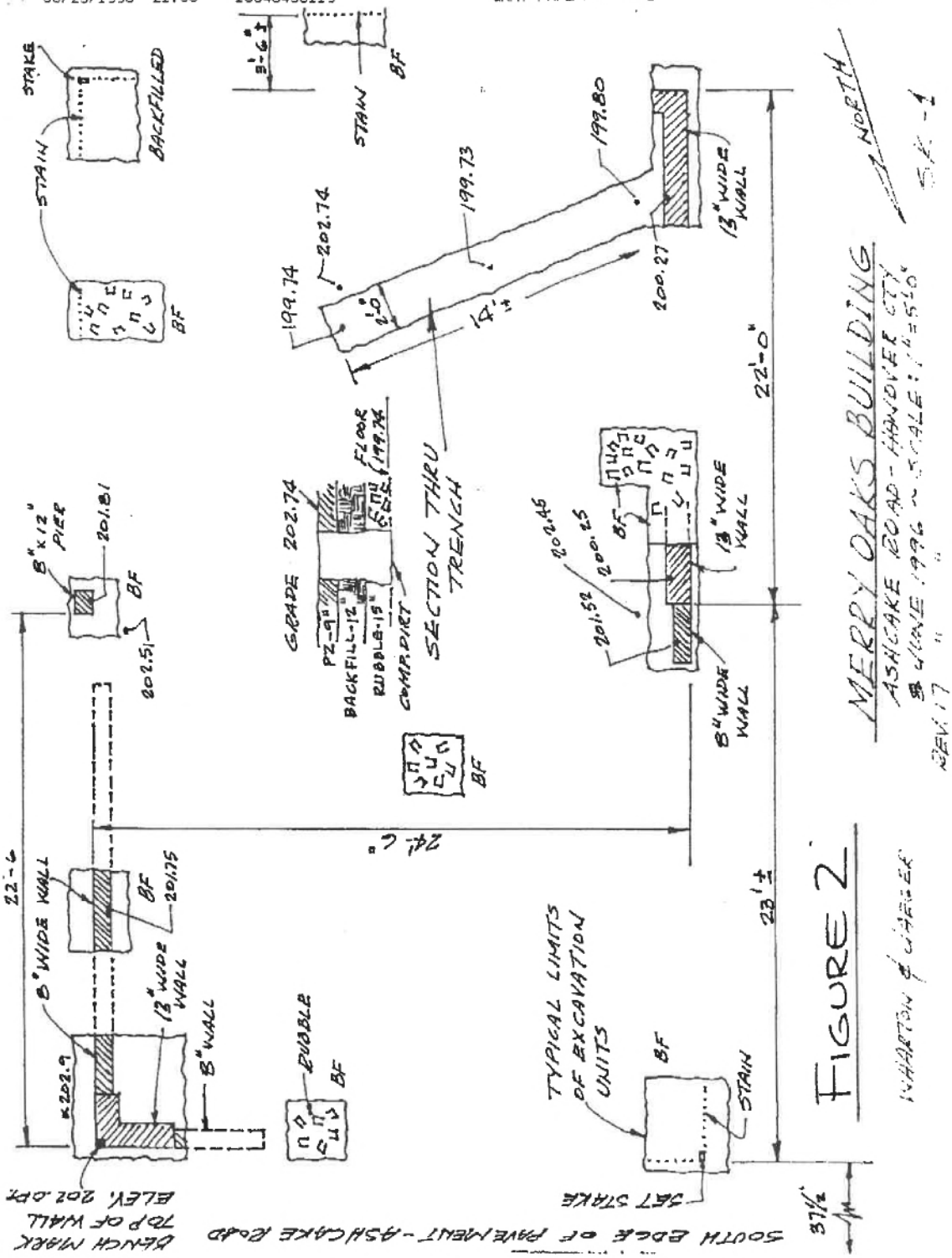


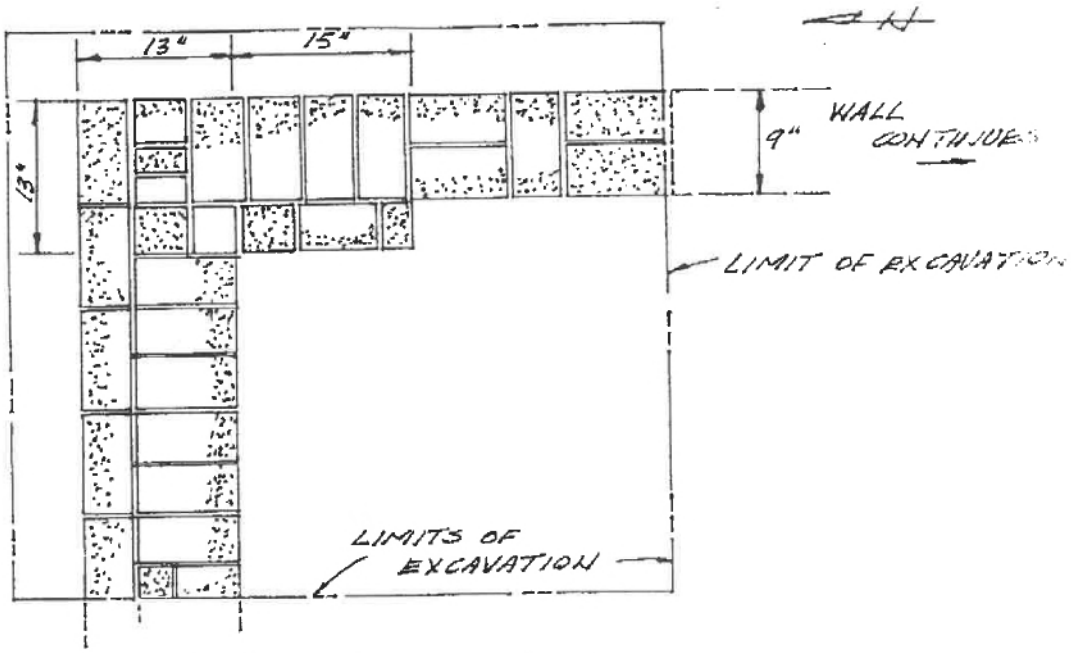
BRICKWORK - SOUTHWEST CORNER
SCALE: 1"=12"
MERRY OAKS -1
96-22101

SK-2

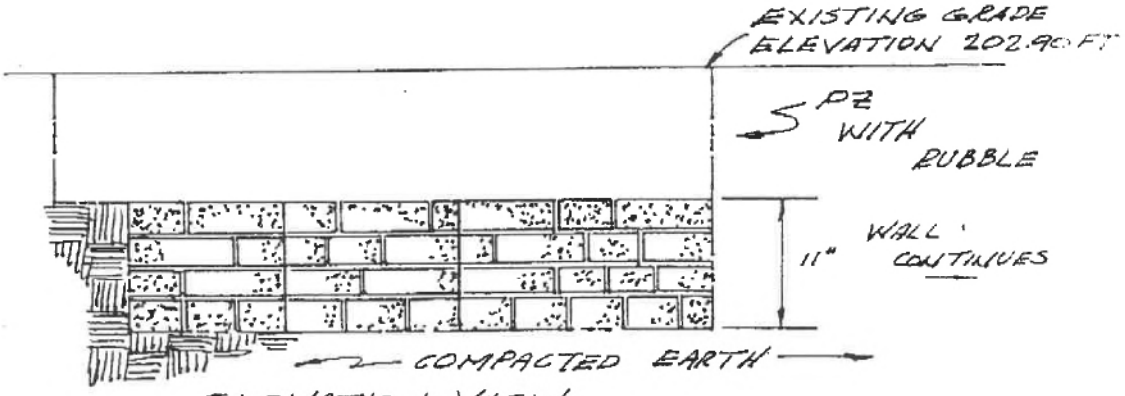
FIGURE 1

HARRY A. JAEGER
6/16/96


MERRY OAKS BUILDING
ASHCAKE ROAD - HANOVER CTY
SECTION THRU TRENCH
GRADE 202.74
FLOOR 199.74
PZ-9"
BACKFILL-12"
RUBBLE-15"
COMP. DIRT
199.74
202.74
199.73
199.80
200.27
14'±
22'-0"
13" WIDE WALL
8" WIDE WALL
8" x 12" PIPE
201.81
202.51
202.46
200.25
201.52
24' c.
22'-6
8" WIDE WALL
13" WIDE WALL
8" WALL
201.75
202.9
RUBBLE
TYPICAL LIMITS OF EXCAVATION UNITS
23'±
37½'
STAKE
BACKFILLED
STAIN
BF
NORTH
FIGURE 2
SOUTH EDGE OF PAVEMENT - ASHCAKE ROAD
BENCH MARK TOP OF WALL ELEV. 202.09



PLAN ~ TOP OF WALL



ELEVATION VIEW

BRICKWORK - NORTHEAST CORNER
SCALE: 1" = 12"
MERRY OAKS-1
96-22101

SK-3

FIGURE 3

HARRY A. GAEGER
6/17/96

Post Office Box 500
Richmond, Virginia 23218-0500
March 29, 1996

Mr. Michael E. Fiore
Chairman
Hanover County Historical Commission
Post Office Box 470
Hanover, Virginia 23069

Re: Archaeological Study - Merry Oaks Tavern Site

Dear Mike:

I am writing in reply to your letter dated March 27, 1996 addressed to Phil Dean, requesting written permission for the archaeological study team of the Hanover Historical Commission to access the property of Air Park Associates, L.P. for the purpose of conducting a Phase I Archaeological Study on the Merry Oaks Tavern Site.

This letter may be considered authorization for the conduct of the Phase I Archaeological Study on the two-acre site identified on the plat dated November 14, 1995, a copy of which was sent to Peter Trible on December 5, 1995. Should there be any desire to expand the study beyond the boundaries of the site shown on the plat, we will consider a request to do so if made. It is understood that this activity will be conducted in accord with the provisions of paragraph 13 of Hanover County Ordinance C-13-94(c), Air Park Associates.

It is requested that we be provided with a certificate of insurance evidencing liability insurance coverage in effect for the organization and/or individuals who will be conducting the work on the site.

With kindest regards, I am

Sincerely,

AIR PARK ASSOCIATES, L.P.

By Robert A. Cox
Robert A. Cox, Jr., General Partner

cc: Mr. Phillip W. Dean
Mr. John Hodges

RAC\WP\LTRMEF.004

M E M O R A N D U M

TO: Robert A. Cox, Jr.
Phillip W. Dean

FROM: Peter L. Trible

DATE: March 28, 1996

RE: Air Park Associates - Comprehensive Plan Amendment

Enclosed is a letter from John Hodges explaining the action of the Board regarding planning in the vicinity of the Air Park Associates property in Hanover County. I am providing this for your information and files.

If you have any questions, please let me know.

P.L.T.

PLT/rs
Encl.
cc: James W. Theobald, Esquire (w/encl.)

Hanover County Historical Commission
Post Office Box 470, Hanover, Virginia 23069

March 27, 1996

Mr. Philip Dean
Air Park Associates
c/o Leadbetter
11277 Air Park Road
Ashland, VA 23005

RE: Archaeological Study - Merry Oaks Tavern Site

Dear Phil,

The Hanover Branch of the APVA, has raised sufficient funds to have a Phase I Archaeological Study completed on the Merry Oaks Tavern Site. Field studies will generally be restricted to the two (2) acre parcel identified in the compiled plat dated November 14, 1995 and forwarded to Peter Trible on December 5, 1995.

The purpose of this letter is to obtain written permission for the archaeological study team to access the property and to complete their investigative work. The funds have been appropriated and the study team is ready to commence their field work as soon as permission is received.

The Hanover Branch of the APVA is designated by the Hanover Historical Commission as the non-profit group that would be eligible to complete this work and be a steward for any property that may be preserved.

You may address the letter of permission to: Mrs. Jayne Massie
APVA - Hanover Branch
c/o The Grove
33115 Mt. Gideon Rd.
Hanover, VA 23069

I would appreciate a copy of the letter for the Commission files. I am forwarding a copy of this letter to Bob Cox of Hirschler, Fleischer as instructed by you.

Please call me if you have any questions.

Sincerely,

Mike

Michael E. Fiore
Chairman

cc: R. Cox, Hirschler, Fleischer, et. al.
J. Hodges, Hanover County

M E M O R A N D U M

TO: Robert A. Cox, Jr.

FROM: Peter L. Trible

DATE: January 17, 1996

RE: Air Park Associates - Proffer Regarding Merry Oaks Site

In reviewing my files, I came across the enclosed letter dated December 5, 1995 from Hanover County. To be honest, I am not sure whether I sent you a copy or not -- at any rate, enclosed is a letter from John Hodges dated December 5, 1995 regarding the location of the Merry Oats site in compliance with Proffer No. 13 of the rezoning case.

Please let me know if you have any questions.

P.L.T.

PLT/rs
Encl.
cc: Mr. Phillip W. Dean (w/encl.)

BOARD OF SUPERVISORS

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CHICKAHOMINY DISTRICT

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COLD HARBOR DISTRICT

J. T. "JACK" WARD
MECHANICSVILLE DISTRICT

HANOVER COUNTY
P. O. BOX 470
HANOVER, VIRGINIA 23069-0470

JOHN F. BERRY
COUNTY ADMINISTRATOR

RICHARD R. JOHNSON
DEPUTY COUNTY ADMINISTRATOR

STERLING E. RIVES, III
COUNTY ATTORNEY

December 5, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Peter L. Trible, Esq.
P. O. Box 6248
Ashland, Virginia 23005

RE: C-13-94(c), Proffer Regarding Merry Oaks Sites

Dear Mr. Trible:

This is to follow up Mr. Fiore's letter of November 22, 1995, to submit a plat prepared by Resource International of a "compiled plat of a parcel of land lying on the south side of Route 657," prepared November 14, 1995.

This information is submitted in compliance with proffer number 13 of the C-13-94(c) rezoning case, Air Park Associates. As indicated in Mr. Fiore's letter, the APVA is actively pursuing qualified archaeological historians to complete the investigation as needed.

Please advise if you have any questions regarding this proffer from the information provided by the Historical Commission.

Very truly yours,

John H. Hodges, AICP
Director of Planning

/jds/JHH-4

cc: Michael E. Fiore, Chairman
A. Lisa Barker, Esq.
Michael E. Crescenzo
File: C-13-94(c)

attachments

Hanover County Historical Commission
Post Office Box 470, Hanover, Virginia 23069

John

November 22, 1995

Mr. John H. Hodges
Director of Planning
Hanover County
P O Box 470
Hanover, VA 23069

Dear John,

Pursuant to the proffers negotiated for the Air Park Associates rezoning request, the Historical Commission has taken the following action:

At its scheduled meeting on November 15, the Commission identified the APVA Hanover Branch as its designee to perform archaeological investigations on the Merry Oaks site. These investigations will occur on the two-acre site identified on survey drawing, dated 11/14/95, and previously forwarded to the applicant. The APVA is actively pursuing qualified archaeological historians to complete the investigation as needed.

As progress is made regarding the investigations, we will keep you and the developer apprised.

Sincerely,

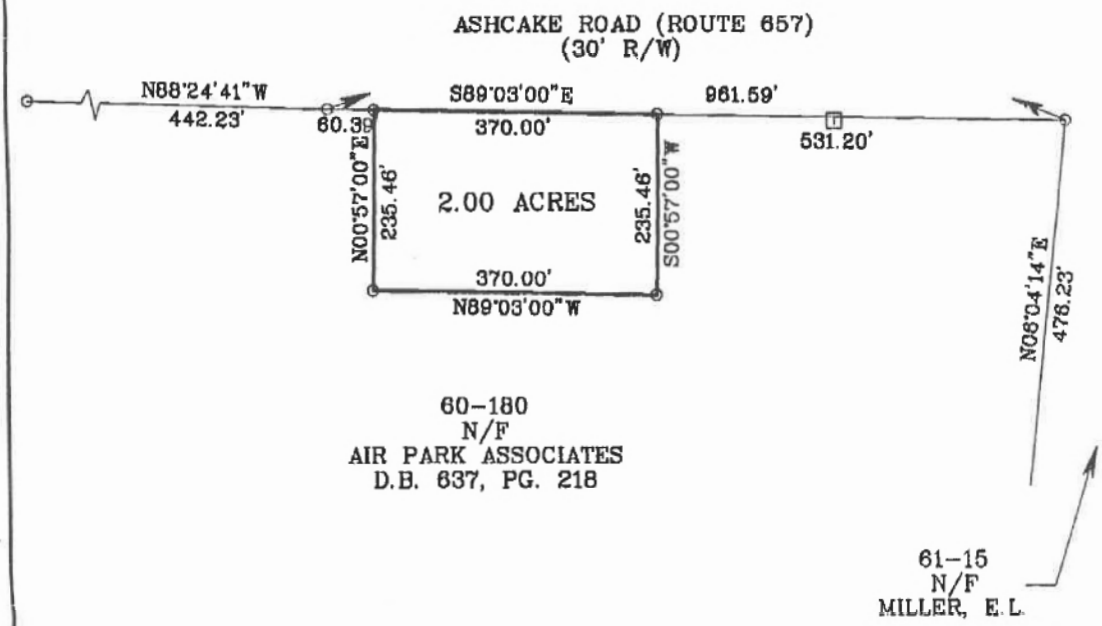
Michael E. Fiore
Chairman

cc: Peter L. Trible

RECEIVED

PARCEL SHOWN HEREON IS NOT WITHIN A SPECIAL FLOOD HAZARD AREA AS DESIGNATED BY THE FLOOD INSURANCE RATE MAP #510237-0310A, ZONE C.

PROPERTY LINE INFORMATION TAKEN FROM PLAT BY E.D. LEWIS & ASSOC. DATED 2/5/93.



COMPILED PLAT OF A PARCEL OF LAND LYING ON THE SOUTH LINE OF ROUTE 657,

ASHLAND DISTRICT,
HANOVER COUNTY, VIRGINIA

DATE: 11/14/95 SCALE: 1" = 200'

COMMONWEALTH OF VIRGINIA
Howard B. Weatherford III
1610
11/14/95
LAND SURVEYOR

RESOURCE
INTERNATIONAL, LTD.
ENVIRONMENTAL CONSULTANTS & DESIGNERS
P.O. BOX 6160 ◇ 3334 KINGS CHARTER DRIVE ◇ ASHLAND, VA 23005
(804)550-9230 ◇ (804)550-9200 ◇ FAX (804)550-9259

HIRSCHLER, FLEISCHER, WEINBERG,
COX & ALLEN
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW

REPLY TO:

Richmond
(804) 771-9547

MAILING ADDRESS:
P. O. BOX 500
RICHMOND, VIRGINIA 23204-0500

FEDERAL RESERVE BANK BUILDING
701 EAST BYRD STREET
RICHMOND, VIRGINIA 23219
TELEPHONE: (804) 771-9500
FACSIMILE: (804) 644-0957

11139 AIR PARK ROAD, SUITE 1
P.O. BOX 6248
ASHLAND, VIRGINIA 23005-6248
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FACSIMILE: (804) 798-6415

606 WILLIAM STREET
FREDERICKSBURG, VIRGINIA 22401-5749
TELEPHONE: (540) 372-3515
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ROBERT A. COX, JR.
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GINA M. BURGIN
CHRISTOPHER T. McGEE
OF COUNSEL
EDWARD S. HIRSCHLER
ALAN G. FLEISCHER
JETER M. WATSON

January 25, 1996

Mr. Phillip W. Dean
Executive Vice President
Leadbetter, Inc.
405 Air Park Road
Ashland, Virginia 23005

RE: Air Park Associates/Merry Oaks Site

Dear Phil:

In case you do not have them, I enclose copies of two letters, one dated November 22, 1995 addressed to John Hodges by Mike Fiore, and one dated December 5, 1995 addressed to Peter Trible by John Hodges. A copy of the plat is attached to the letter dated November 22, 1995.

You may already have copies, and so far as I can tell there is nothing that we need to do at this point.

Sincerely,

Bob

Robert A. Cox, Jr.

/dt

Enclosures

L:\...\131\70\00882\LTRPWD.004

BOARD OF SUPERVISORS

WILLIAM T. BOLLING, CHAIRMAN
CHICKAHOMINY DISTRICT

R. J. KLOTZ, JR., VICE CHAIRMAN
HENRY DISTRICT

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JOHN F. BERRY
COUNTY ADMINISTRATOR

RICHARD R. JOHNSON
DEPUTY COUNTY ADMINISTRATOR

STERLING E. RIVES, III
COUNTY ATTORNEY

December 5, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Peter L. Trible, Esq.
P. O. Box 6248
Ashland, Virginia 23005

RE: C-13-94(c), Proffer Regarding Merry Oaks Sites

Dear Mr. Trible:

This is to follow up Mr. Fiore's letter of November 22, 1995, to submit a plat prepared by Resource International of a "compiled plat of a parcel of land lying on the south side of Route 657," prepared November 14, 1995.

This information is submitted in compliance with proffer number 13 of the C-13-94(c) rezoning case, Air Park Associates. As indicated in Mr. Fiore's letter, the APVA is actively pursuing qualified archaeological historians to complete the investigation as needed.

Please advise if you have any questions regarding this proffer from the information provided by the Historical Commission.

Very truly yours,

John H. Hodges, AICP
Director of Planning

/jds/JHH-4

cc: Michael E. Fiore, Chairman
A. Lisa Barker, Esq.
Michael E. Crescenzo
File: C-13-94(c)

attachments

Hanover County Historical Commission
Post Office Box 470, Hanover, Virginia 23069

John

November 22, 1995

Mr. John H. Hodges
Director of Planning
Hanover County
P O Box 470
Hanover, VA 23069

Dear John,

Pursuant to the proffers negotiated for the Air Park Associates rezoning request, the Historical Commission has taken the following action:

At its scheduled meeting on November 15, the Commission identified the APVA Hanover Branch as its designee to perform archaeological investigations on the Merry Oaks site. These investigations will occur on the two-acre site identified on survey drawing, dated 11/14/95, and previously forwarded to the applicant. The APVA is actively pursuing qualified archaeological historians to complete the investigation as needed.

As progress is made regarding the investigations, we will keep you and the developer apprised.

Sincerely,

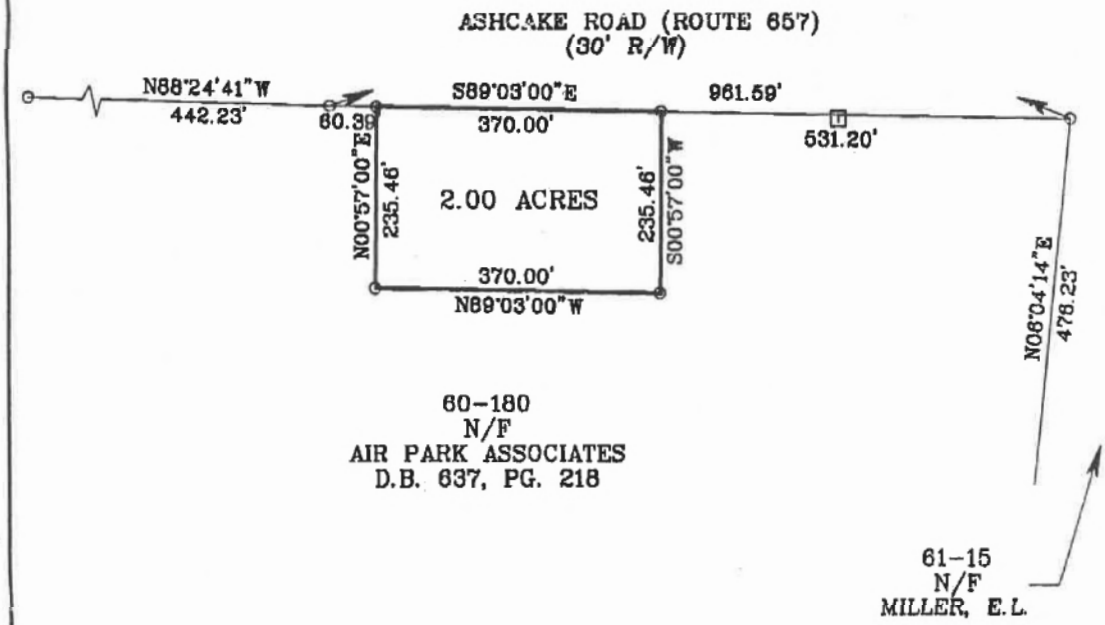
Michael E. Fiore
Chairman

cc: Peter L. Trible

RECEIVED

PARCEL SHOWN HEREON IS NOT WITHIN A SPECIAL FLOOD HAZARD AREA AS DESIGNATED BY THE FLOOD INSURANCE RATE MAP #510237-0310A, ZONE C.

PROPERTY LINE INFORMATION TAKEN FROM PLAT BY E.D. LEWIS & ASSOC. DATED 2/5/93.



COMPILED PLAT OF A PARCEL OF LAND LYING ON THE SOUTH LINE OF ROUTE 657,

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DATE: 11/14/95 SCALE: 1" = 200'

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Hanover County Historical Commission
Post Office Box 470, Hanover, Virginia 23069

November 22, 1995

Mr. John H. Hodges
Director of Planning
Hanover County
P O Box 470
Hanover, VA 23069

Dear John,

Pursuant to the proffers negotiated for the Air Park Associates rezoning request, the Historical Commission has taken the following action:

At its scheduled meeting on November 15, the Commission identified the APVA Hanover Branch as its designee to perform archaeological investigations on the Merry Oaks site. These investigations will occur on the two-acre site identified on survey drawing, dated 11/14/95, and previously forwarded to the applicant. The APVA is actively pursuing qualified archaeological historians to complete the investigation as needed.

As progress is made regarding the investigations, we will keep you and the developer apprised.

Sincerely,

Mike

Michael E. Fiore
Chairman

cc: Peter L. Trible

HIRSCHLER, FLEISCHER, WEINBERG,
COX & ALLEN
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW

REPLY TO:

Ashland
(804) 771-9571

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RICHMOND, VIRGINIA 23204-0500

FEDERAL RESERVE BANK BUILDING
701 EAST BYRD STREET
RICHMOND, VIRGINIA 23219
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CHRISTOPHER T. McGEE

OF COUNSEL
EDWARD S. HIRSCHLER
ALAN G. FLEISCHER
JETER M. WATSON

November 30, 1995

Mr. Phillip W. Dean
Leadbetter, Inc.
11277 Air Park Road
Ashland, VA 23005

Re: Air Park Associates

Dear Phil:

Enclosed is a letter I received from Mike Fiore, the chairman of the Hanover County Historical Commission. Please take whatever action you deem appropriate.

Sincerely yours,

Peter L. Trible

PLT/jg
Enclosure
cc: Robert A. Cox, Jr., Esquire

Hanover County Historical Commission
Post Office Box 470, Hanover, Virginia 23069

June 21, 1995

Peter L. Trible, Esq.
Hirschler, Fleischer, Weinberg, Cox & Allen
P O Box 6248
Ashland, VA 23005

RE: Merry Oaks Tavern Site

Dear Peter,

As we discussed, I would like to request the following.

1. A letter of permission to permit the APVA to post the suspected tavern site in an effort to discourage relic hunters.

2. A copy of the most recent boundary survey of the property. This will assist the Historical Commission's efforts to prepare a plat of a 2 acre area that would be identified around the suspected tavern site for future archeological investigations.

Your assistance with these matters will be greatly appreciated.

Sincerely,

Michael E. Fiore, P.E.
Chairman

HIRSCHLER, FLEISCHER, WEINBERG,
COX & ALLEN
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW

REPLY TO:

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GINA M. BURGIN
CHRISTOPHER T. McGEE

OF COUNSEL
EDWARD S. HIRSCHLER
ALAN G. FLEISCHER
JETER M. WATSON

July 6, 1995

Mr. Phillip W. Dean
Executive Vice President
Leadbetter, Inc.
405 Air Park Road
Ashland, VA 23005

Re: Merry Oaks Tavern Site

Dear Phil:

Enclosed is a letter I received from Mike Fiore, Chairman of the Hanover County Historical Commission, regarding the Merry Oaks Tavern site. I am forwarding the letter to you for the appropriate response.

I see no reason to not cooperate with the Commission. In accordance with the proffers, they do have access to the site and permission to post same seems appropriate.

Considering the Historical Commission folks will be going onto the property, it seems appropriate that some insurance coverage be considered by Air Park Associates. In lieu of that, it might be appropriate to request that the individuals who will be going on the site sign some form of liability waiver and hold harmless. I do believe insurance may be the best way to go.

At any rate, I will leave you to respond to Mike. If you have any questions, please let me know.

Sincerely yours,

Peter L. Trible

PLT/rs
Encl.
cc: Robert A. Cox, Jr., Esquire

HIRSCHLER, FLEISCHER, WEINBERG,
COX & ALLEN
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EDWARD S. HIRSCHLER
ALAN G. FLEISCHER
JETER M. WATSON

July 6, 1995

Mr. Michael E. Fiore
Chairman
Hanover County Historical Commission
P. O. Box 470
Hanover, VA 23069

Re: Merry Oaks Tavern Site

Dear Mike:

I received your letter of June 21, 1995. I have forwarded the letter to Phil Dean, General Partner of Air Park Associates, for him to respond directly to you.

If you have any questions, please let me know.

Sincerely yours,

Peter L. Trible

PLT/rs
cc: Mr. Phillip W. Dean

In the event the owner desires to construct all or a portion of the aforementioned road improvements and is unable to acquire the off-site right-of-way necessary for such construction, the owner may request, in writing, the County to acquire such right-of-way as a public road improvement. All costs associated with the acquisition of the right-of-way shall be borne by the owner. In the event the County chooses not to assist the owner in acquisition of such right-of-way or is unable to acquire the right-of-way, the owner shall be relieved of the obligation to cap this development below 2420 trips in the P.M. In the event the new Ashcake Road extended improvements are made prior to the Sliding Hill improvements, the Planning Commission may, in its sole discretion, adjust the phasing caps, but in no event shall development on site exceed trip generation of more than 2420 trips in the P.M.

13. Merry Oaks Tavern Site. The owner agrees that within six (6) months from the date of the approval of this rezoning by the Board of Supervisors, a 2 acre site adjacent to Ashcake Road may be designated an archaeological investigation site (the "Site") by the Hanover Historical Commission (the "Commission"). The Site shall be identified by a metes and bounds survey and provided to the owner. The owner agrees that the Site will not be developed for a period of thirty-six (36) months from the date of approval of this rezoning. During such thirty-six (36) month period, the Commission, its agents and designees, may perform archaeological investigations in its sole discretion in order to inventory the cultural resources, if any, within the project area. Such archaeological investigations may include excavations, the recovery of artifacts and the mapping and identification of any particular areas that have historical significance. Upon completion of any such archaeological investigations, the owner will consult with the Commission regarding the dedication, sale, etc., of an appropriate area, if any, for preservation and/or interpretation. As a minimum, the owner will provide an area of no less than .2 acres to be chosen by the owner at a prominent location to be eventually accessible to the public, to surround a historical marker to commemorate past events of historical significance occurring on the property. The owner will consult with the Commission on the creation and location of such area and marker.

In the event the Site is needed for development prior to the end of the above referenced thirty-six (36) month period, the owner will, at its sole cost and expense, conduct a phase 1 cultural resources documentation study. Such study shall be pursuant to guidelines adopted by the Virginia Historic Resources Department for phase 1 identification and prepared by a qualified archaeological consultant approved by the Department. The results of any such study shall be provided to the Commission and the owner will consult with the Commission regarding the dedication, sale, etc., of an appropriate area, if any, for preservation and/or interpretation. In any event, the owner shall erect a marker and provide the minimum area as set out above.

14. Right-of-way Dedication. The owner agrees to dedicate (but not construct) areas of the property for the improvement of public roads as follows:

(a) A 30 foot strip of land over the property measured from the existing centerline of Ashcake Road for the full front of the property.

(b) An area not to exceed 100 feet in width for improvements to Sliding Hill Road, which area shall be located and measured no farther than 100 feet from the existing right-of-way line of Sliding Hill Road.

(c) An area for New Ashcake Road Extended not to exceed 100 feet in width located in the general area of the dashed line shown on Exhibit A and as close to the western property boundary as feasible as long as VDOT alignment standards can be met.

(d) An area not to exceed 100 feet in width in the general area shown on Exhibit A as Relocated Ashcake Road.

The specific areas for dedication shall be identified and agreed to at the time of subdivision. In the event the new roads shown on Exhibit A are not constructed within eighteen (18) years from the date of their dedication, the County shall reconvey to the owner any area dedicated but not constructed and the owner shall be relieved of any responsibility to so dedicate such property.

Snapshot

Date Generated: October 11, 2019

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	1700 - 1799
Site Type(s):	Dwelling, single
Other DHR ID:	No Data
Temporary Designation:	99-27401

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	YELLOW TAVERN
County/Independent City:	Hanover (County)
Physiographic Province:	Piedmont
Elevation:	200
Aspect:	Flat
Drainage:	James River
Slope:	2 - 6
Acreage:	No Data
Landform:	No Data
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components

Component 1

Category:	Domestic
Site Type:	Dwelling, single
Cultural Affiliation:	Euro-American
DHR Time Period:	Colony to Nation, Contact Period, Early National Period
Start Year:	1700
End Year:	1799
Comments:	Site of a dwelling possibly related to Merry Oaks Tavern

Bibliographic Information

Bibliography:

No Data

Informant Data:

Name: Unknown
Company 1: Hanover County Airport Commission
City: Hanover
State: Virginia
Owner Relationship: Owner of property

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

Phase I survey 1996 and archaeological evaluation 1999
Includes Phase II as well.

Project Review File Number:	VDHR File # 99-1195
Sponsoring Organization:	No Data
Organization/Company:	Unknown (DSS)
Investigator:	Gray & Pape, Inc - Bob Clarke
Survey Date:	5/25/1999

Survey Description:

Merry Oakes Tavern site is located on a wooded tract south of Ashcake Road, 1/4 mile west of its intersection with Sliding Hill Road. The purpose of the survey was to confirm that this, the traditional location for the tavern, was correct. The survey involved shovel testing at a 30 foot interval across a 2-acre tract. Once a structure was identified, a series of backhoe trenches were excavated. This revealed a brick foundation and chimney base. The southern half of the structure had a half cellar, which has been filled with brick rubble. Much of the whole brick had been removed from the foundation and the remains used to fill the cellar hole. 2 possible wells were located north and south of the foundation. Given the fact that the foundation dimensions do not match the dimensions given in an 1812 insurance map for the tavern, it is unlikely that this structure was once Merry Oaks Tavern. It may be a dwelling associated with the tavern. This dwelling appears to have been a small strucutre with a cellar to which an addition was added. Artifacts recovered as well as historic background research indicates that this site was occupied from the mid 18th century to 1913. For further information, see the excavation report.

Threats to Resource:	No Data
Site Conditions:	Surface Deposits Present And With Subsurface Integrity
Survey Strategies:	Subsurface Testing
Specimens Collected:	Yes
Specimens Observed, Not Collected:	Yes

Artifacts Summary and Diagnostics:

See attached inventory

Summary of Specimens Observed, Not Collected:

Relic hunters report 18th-19th century artifacts.

Current Curation Repository:	Temporarily with Gray & Pape
Permanent Curation Repository:	No Data
Field Notes:	Yes
Field Notes Repository:	Temporar
Photographic Media:	No Data
Survey Reports:	No

Survey Report Information:

Archaeological evaluation of Merry Oaks Tavern

Survey Report Repository:	Temporarily with Gray & Pape, Inc.
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

Snapshot

Date Generated: October 11, 2019

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	15000 B.C.E - 1606 C.E, 1800 - 1899, 1900 - 1999
Site Type(s):	Lithic scatter, Trash scatter
Other DHR ID:	No Data
Temporary Designation:	1127-2

Site Evaluation Status

DHR Staff: Not Eligible

Locational Information

USGS Quad:	YELLOW TAVERN
County/Independent City:	Hanover (County)
Physiographic Province:	Coastal Plain
Elevation:	200
Aspect:	No Data
Drainage:	York River
Slope:	6 - 10
Acreage:	1.000
Landform:	Ridge Finger
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	Antebellum Period, Civil War, Early National Period, Reconstruction and Growth
Start Year:	1800
End Year:	1899
Comments:	No Data

Component 2

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	Post Cold War, Reconstruction and Growth, The New Dominion, World War I to World War II
Start Year:	1900
End Year:	1999
Comments:	No Data

Component 3

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Native American
DHR Time Period:	Pre-Contact
Start Year:	-15000
End Year:	1606
Comments:	No Data

Component 4

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Component 5

Category:	Transportation/Communication
Site Type:	Trash scatter
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	Historic artifact scatter

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: DHR Staff: Not Eligible

DHR ID: 44HN0379
Staff Name: Horton, Tonia
Event Date: 10/4/2007
Staff Comment The consultant recommends sites 44HN0378, 44HN0379, 44HN0381, and 44HN0382 as not eligible for listing on the National Register and we concur.

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

Survey completed by Cultural Resources, Inc.

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: Unknown (DSS)
Investigator: CRI
Survey Date: 6/1/2007
Survey Description:

June 2007: This site designates a scatter of artifacts dispersed in a wooded area along the northwestern edge of a northeast-trending finger ridge overlooking Totopotomoy Creek and a small tributary.
Shovel tests were excavated at 50-foot intervals. Radial shovel tests, excavated at 25-foot intervals, were placed around single positive shovel tests in order to aid in the delineation of site boundaries and cultural deposits. All shovel tests were at least 1.0 foot in diameter and were excavated to sterile subsoil. Soil from each shovel test was screened through ¼-inch hardware cloth.

UTM coordinates were recorded based on NAD 1983.

Current Land Use	Date of Use	Comments
Forest	6/1/2007 12:00:00 AM	*No Data*

Threats to Resource: No Data
Site Conditions: Site Condition Unknown
Survey Strategies: Observation, Subsurface Testing
Specimens Collected: Yes
Specimens Observed, Not Collected: No
Artifacts Summary and Diagnostics:

June 2007: The assemblage included automatic machine-made dimpled bottle glass (TPQ=1939), other soda lime glass, iron strapping, and quartz debitage.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: CRI-Richmond
Permanent Curation Repository: No Data
Field Notes: Yes
Field Notes Repository: CRI-Richmond
Photographic Media: No Data
Survey Reports: Yes
Survey Report Information:

A PHASE I ARCHAEOLOGICAL ASSESSMENT
OF APPROXIMATELY 147 ACRES
OF THE PROPOSED HANOVER AIRPORT EXPANSION
HANOVER COUNTY, VIRGINIA
June 2007

A PHASE I ARCHAEOLOGICAL ASSESSMENT
OF APPROXIMATELY 147 ACRES
OF THE PROPOSED HANOVER AIRPORT EXPANSION
HANOVER COUNTY, VIRGINIA
June 2007

Survey Report Repository: CRI-Richmond

DHR Library Reference Number:	HN-87
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

Snapshot

Date Generated: October 11, 2019

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	15000 B.C.E - 1606 C.E, 1200 B.C.E - 1606 C.E
Site Type(s):	Camp, temporary
Other DHR ID:	No Data
Temporary Designation:	1127-3

Site Evaluation Status

DHR Staff: Not Eligible

Locational Information

USGS Quad:	YELLOW TAVERN
County/Independent City:	Hanover (County)
Physiographic Province:	Coastal Plain
Elevation:	200
Aspect:	No Data
Drainage:	York River
Slope:	2 - 6
Acreage:	1.200
Landform:	Ridge Top
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Native American
DHR Time Period:	Pre-Contact
Start Year:	-15000
End Year:	1606
Comments:	No Data

Component 2

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Native American
DHR Time Period:	Early Woodland, Late Woodland, Middle Woodland
Start Year:	-1200
End Year:	1606
Comments:	No Data

Component 3

Category:	Domestic
Site Type:	Camp, temporary
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Archaeological site data is protected under the Archaeological Resource Protection Act (ARPA 1979).

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: DHR Staff: Not Eligible

DHR ID: 44HN0380
Staff Name: Kirchen, Roger
Event Date: 2/25/2008
Staff Comment The committee concurs with the FAA's recommendation that site 44HN0380 is not eligible for listing in the National Register of Historic Places. Although the landform on which 44HN0380 is located appears to retain some degree of integrity, the low density and diversity of artifacts along with a lack of demonstrated subsurface integrity to the cultural deposits limits the research potential of this site.

Event Type: DHR Staff: Potentially Eligible

DHR ID: 44HN0380
Staff Name: Horton, Tonia
Event Date: 10/4/2007
Staff Comment The consultant refcommends site 44HN0380 as potentially eligible for listing on the National Register and we concur. Site 44HN0380 should be avoided or subjected to Phase II evaluation to determine eligibility.

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

Survey completed by Cultural Resources, Inc.

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: Unknown (DSS)
Investigator: CRI
Survey Date: 6/1/2007
Survey Description:

June 2007: This site is situated in a wooded area on a ridge top overlooking Totopotomoy Creek to the east, and is bounded by small tributaries to the north and south. Forty-four percent (14/32) of the shovel test pits within the site area produced artifacts.
Shovel tests were excavated at 50-foot intervals. Radial shovel tests, excavated at 25-foot intervals, were placed around single positive shovel tests in order to aid in the delineation of site boundaries and cultural deposits. All shovel tests were at least 1.0 foot in diameter and were excavated to sterile subsoil. Soil from each shovel test was screened through ¼-inch hardware cloth.

UTM coordinates were recorded based on NAD 1983.

Current Land Use	Date of Use	Comments
Forest	6/1/2007 12:00:00 AM	*No Data*

Threats to Resource: No Data
Site Conditions: Site Condition Unknown
Survey Strategies: Observation, Subsurface Testing
Specimens Collected: Yes
Specimens Observed, Not Collected: No
Artifacts Summary and Diagnostics:

June 2007: Temporally diagnostic artifacts included a thin, side-notched quartz point, possibly a thin Vernon or side-notched variant of a Jack's Reef Point, and a well-fired, quartz-tempered Albemarle cordmarked rim sherd. The remainder of the assemblage comprised flakes and shatter of quartz. The diagnostic artifacts imply a Middle Woodland II to early Late Woodland date for at least a portion of the assemblage (ca. A.D. 600-1200), though the side-notched point potentially dates to the Early Woodland period.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: CRI-Richmond
Permanent Curation Repository: No Data
Field Notes: Yes

Field Notes Repository:	CRI-Richmond
Photographic Media:	No Data
Survey Reports:	Yes

Survey Report Information:

2008. Mike Klein, Josh Duncan, Emily Lindveit, Jocelyn Pitts, Dane Magoon. Phase II Archaeological Evaluation of Site 44HN0380, Hanover County, Virginia.

A PHASE I ARCHAEOLOGICAL ASSESSMENT
OF APPROXIMATELY 147 ACRES
OF THE PROPOSED HANOVER AIRPORT EXPANSION
HANOVER COUNTY, VIRGINIA
June 2007

Survey Report Repository:	CRI-Richmond/VDHR, VDHR
DHR Library Reference Number:	HN-87, HN-88
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

Snapshot

Date Generated: October 11, 2019

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	15000 B.C.E - 1606 C.E
Site Type(s):	Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	1127-4

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	YELLOW TAVERN
County/Independent City:	Hanover (County)
Physiographic Province:	Coastal Plain
Elevation:	200
Aspect:	No Data
Drainage:	York River
Slope:	2 - 6
Acreage:	1.500
Landform:	Ridge Finger
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
DHR Time Period:	Pre-Contact
Start Year:	-15000
End Year:	1606
Comments:	No Data

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

Survey completed by Cultural Resources, Inc.

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Unknown (DSS)

Investigator: CRI

Survey Date: 6/1/2007

Survey Description:

June 2007: This site consisted of a low-density, shallowly buried scatter of quartz and quartzite debitage located in a wooded area on a finger ridge bounded by Totopotomoy Creek and two small tributaries. Thirty-one percent (15 /49) of the shovel tests within the site area produced artifacts. Shovel tests were excavated at 50-foot intervals. Radial shovel tests, excavated at 25-foot intervals, were placed around single positive shovel tests in order to aid in the delineation of site boundaries and cultural deposits. All shovel tests were at least 1.0 foot in diameter and were excavated to sterile subsoil. Soil from each shovel test was screened through ¼-inch hardware cloth.

UTM coordinates were recorded based on NAD 1983.

Current Land Use	Date of Use	Comments
Forest	6/1/2007 12:00:00 AM	*No Data*

Threats to Resource: No Data

Site Conditions: Site Condition Unknown

Survey Strategies: Observation, Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

June 2007: The assemblage included quartz and quartzite debitage.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: CRI-Richmond

Permanent Curation Repository: No Data

Field Notes: Yes

Field Notes Repository: CRI-Richmond

Photographic Media: No Data

Survey Reports: Yes

Survey Report Information:

A PHASE I ARCHAEOLOGICAL ASSESSMENT
OF APPROXIMATELY 147 ACRES
OF THE PROPOSED HANOVER AIRPORT EXPANSION
HANOVER COUNTY, VIRGINIA
June 2007

Survey Report Repository: CRI-Richmond

DHR Library Reference Number: HN-81

Significance Statement: No Data

Surveyor's Eligibility Recommendations: No Data

Surveyor's NR Criteria Recommendations, : No Data

Surveyor's NR Criteria Considerations: No Data

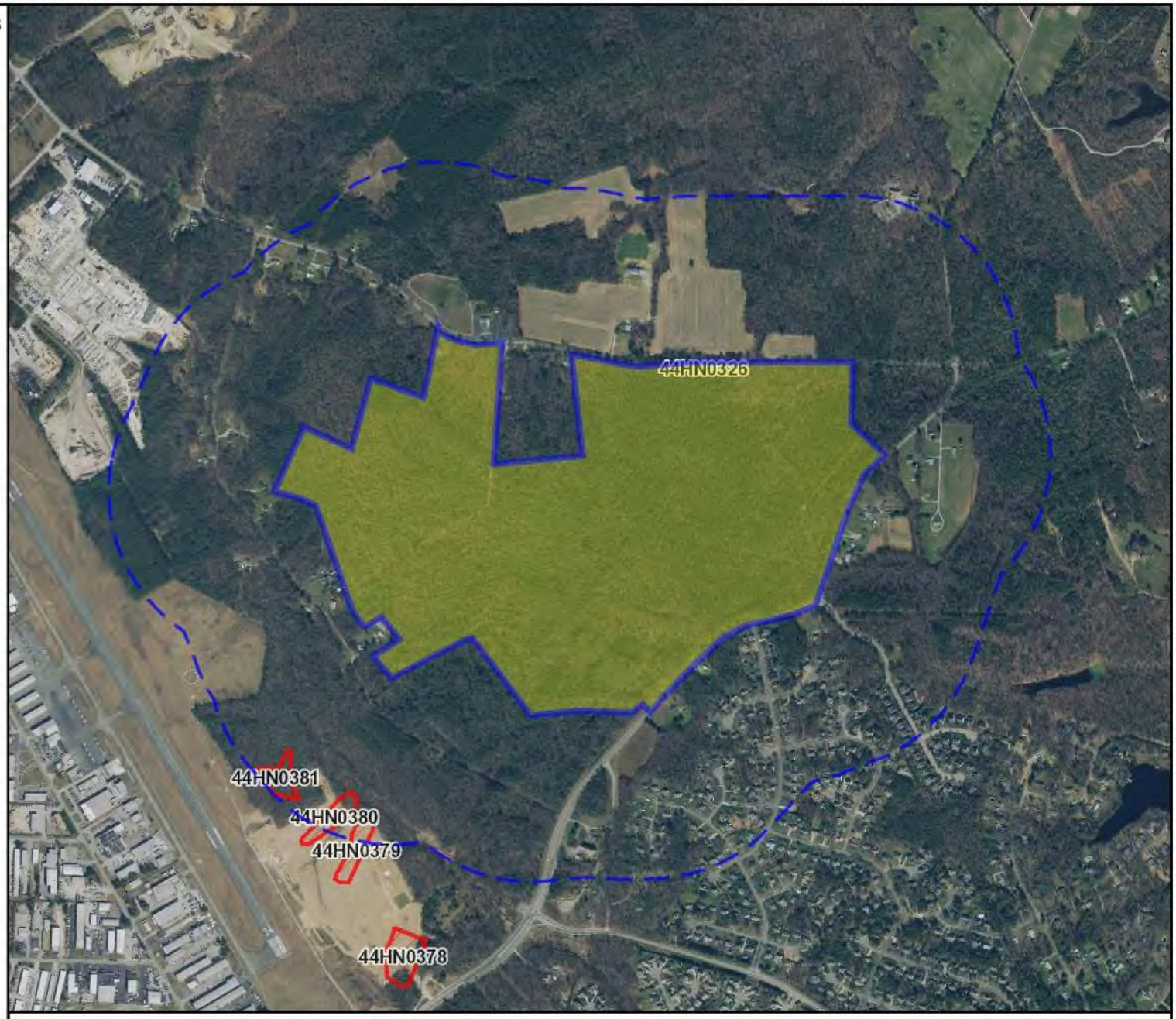
Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Archaeological Resources
- Archaeology Labels
- County Boundaries



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Feet

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Title:

Date: 10/11/2019

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

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

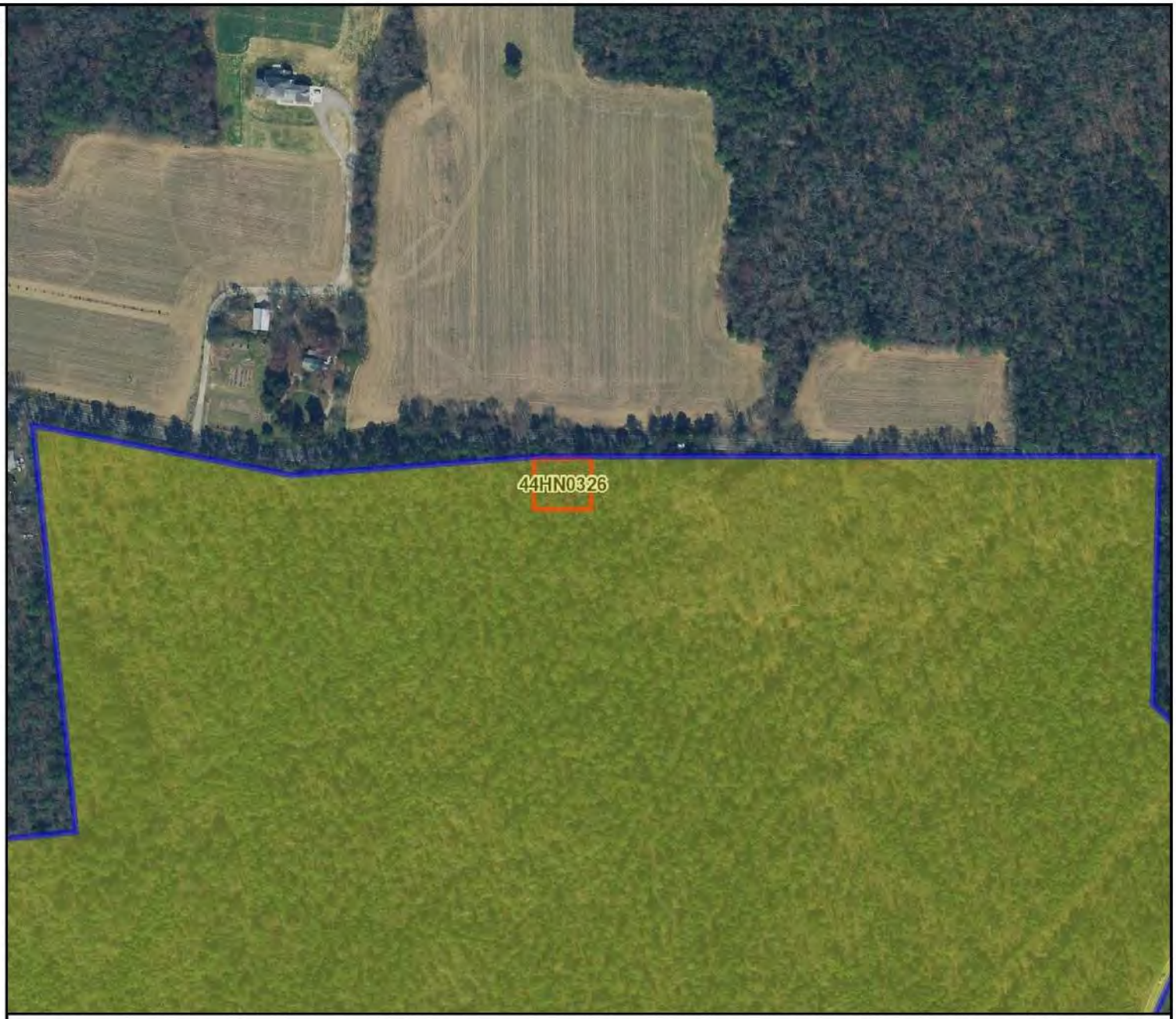
Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Archaeological Resources
- Archaeology Labels
- County Boundaries



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Feet

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Title:

Date: 10/11/2019

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

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

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Archaeological Resources
- Archaeology Labels
- County Boundaries

N

Feet

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1:9,028 / 1"=752 Feet

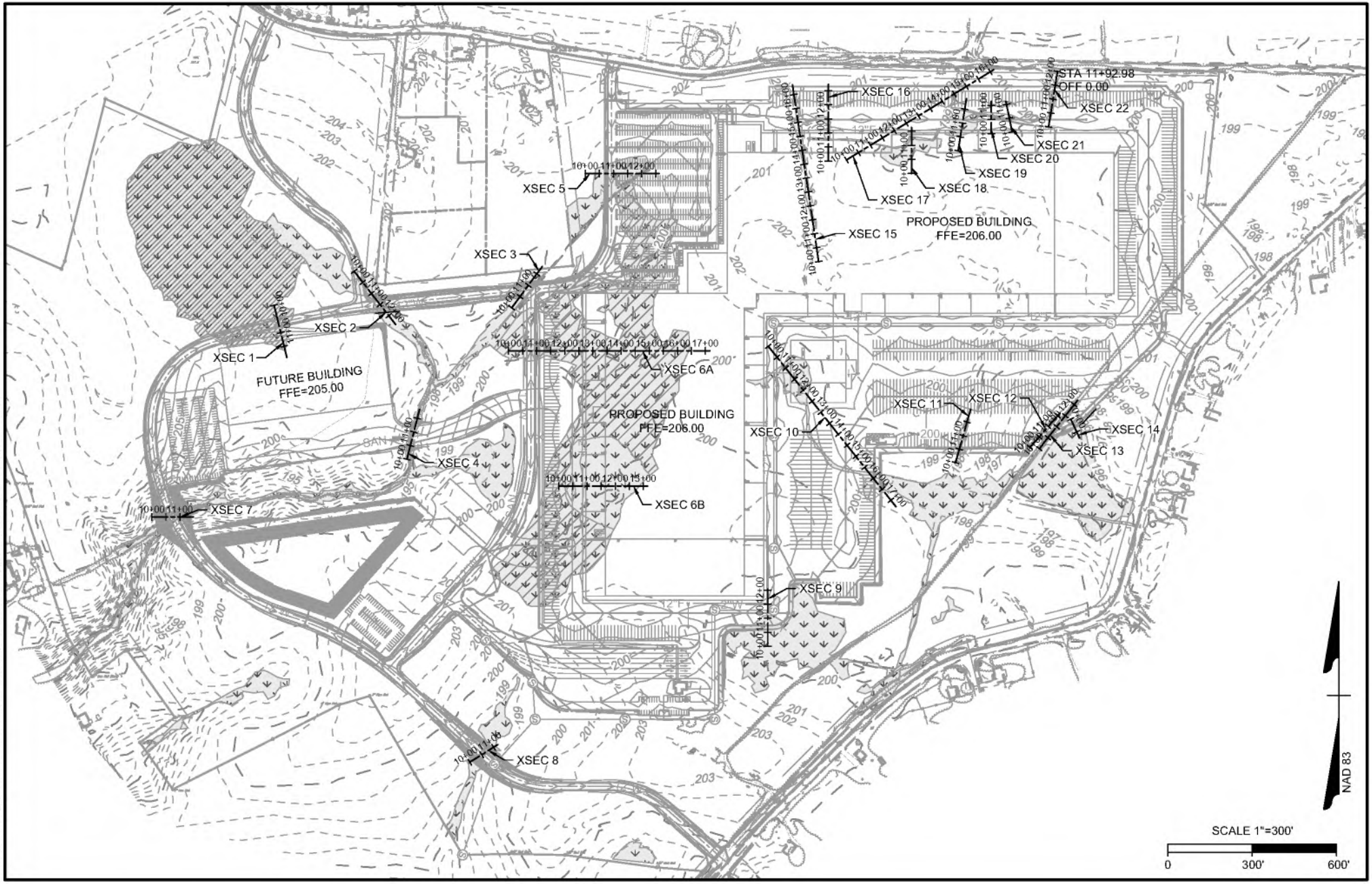
Title:

Date: 10/11/2019

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.

APPENDIX F:
WETLAND IMPACT CROSS SECTIONS



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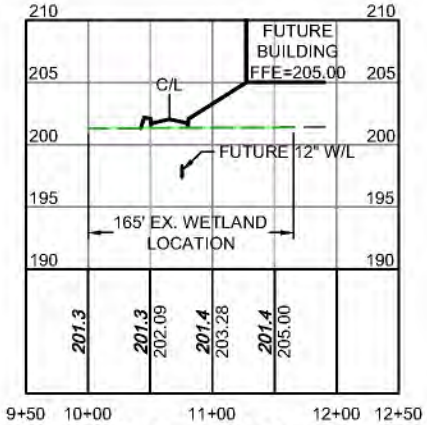

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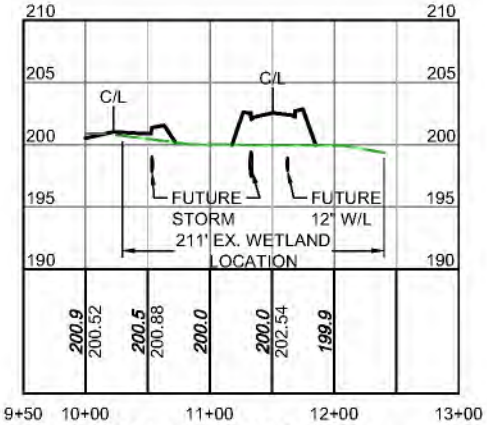

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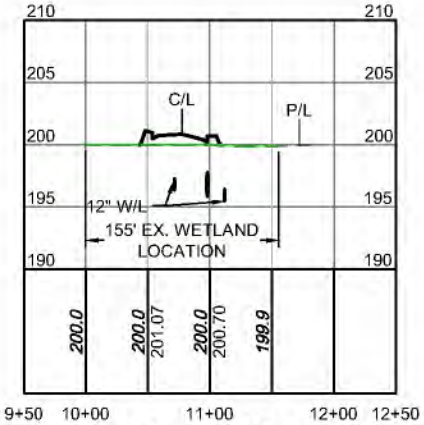

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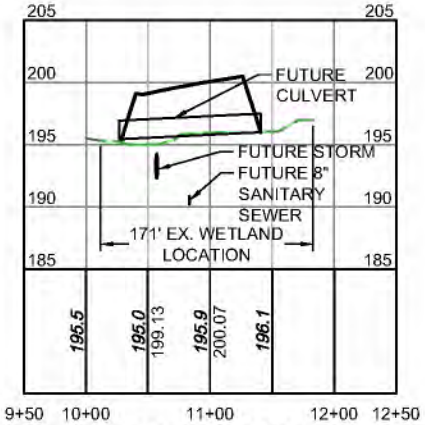

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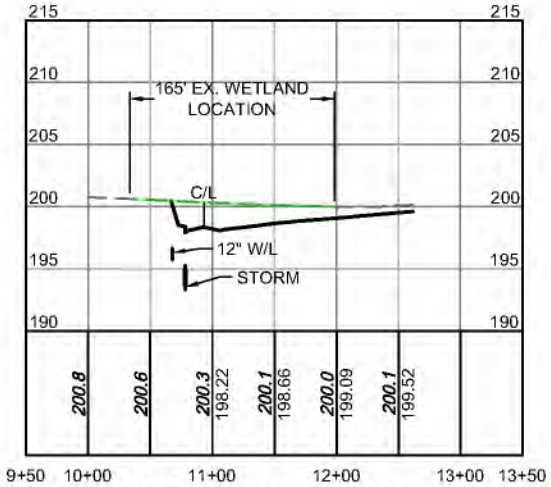

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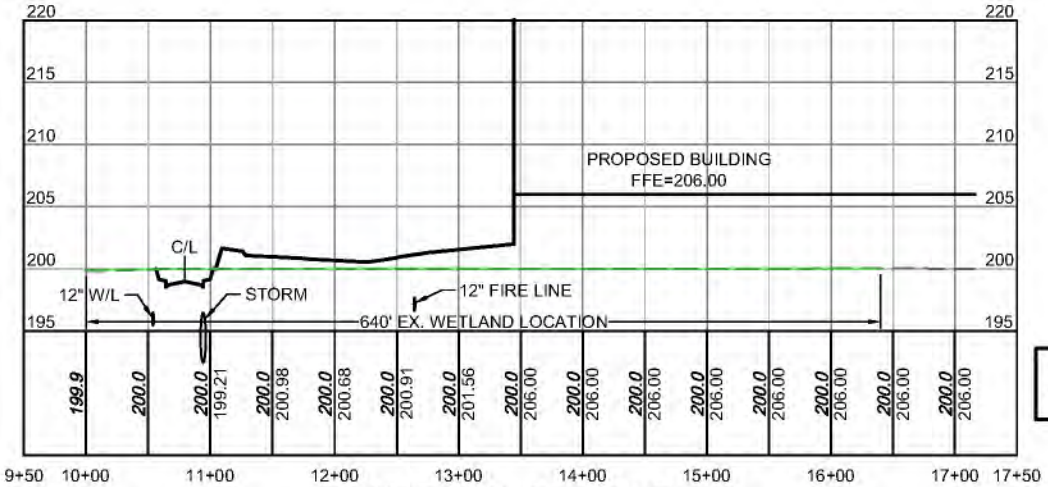

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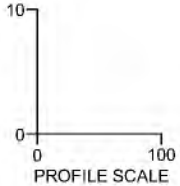

EXISTING GROUND
PROPOSED GRADE

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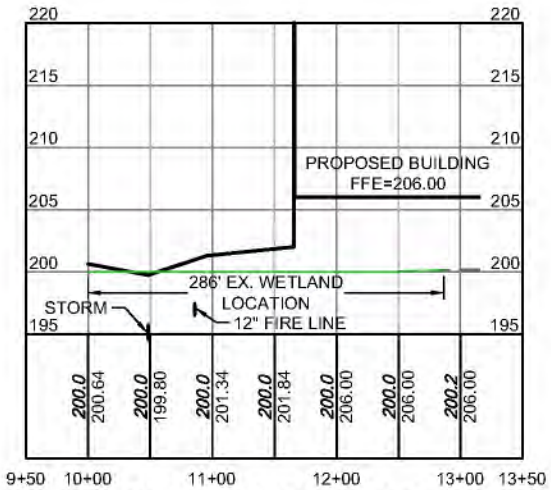

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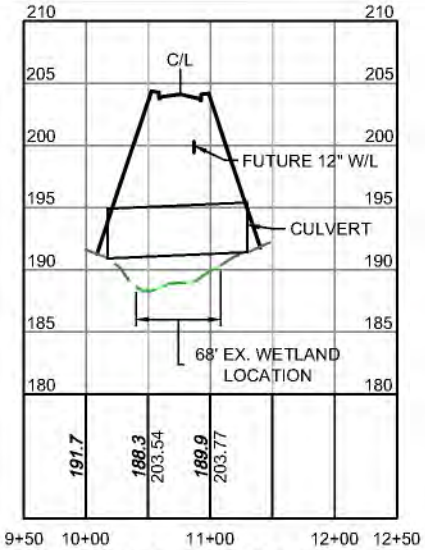

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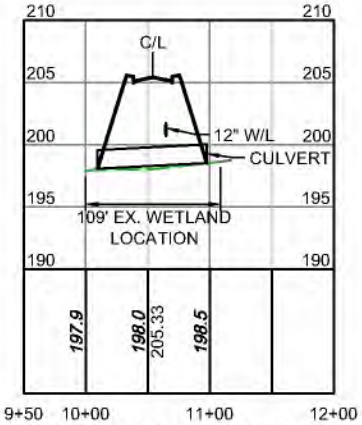

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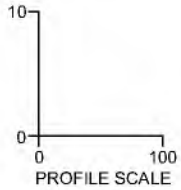
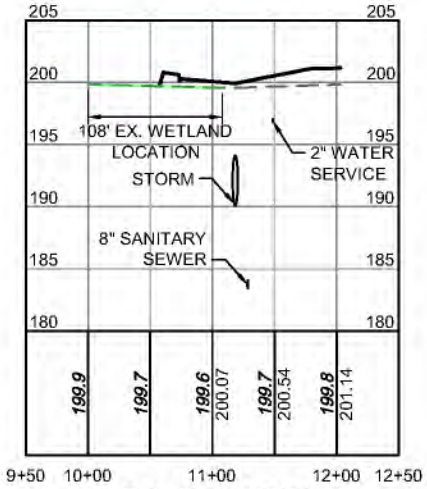


EXISTING GROUND
PROPOSED GRADE



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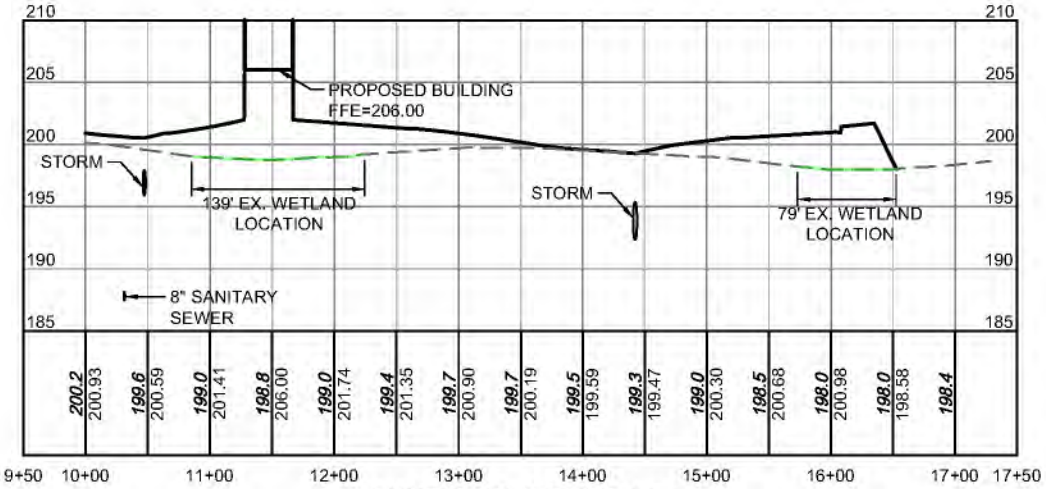

XSEC 10 PROFILE

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VERT SCALE: 1"=10

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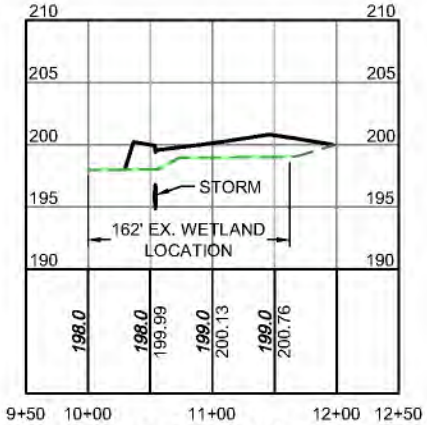

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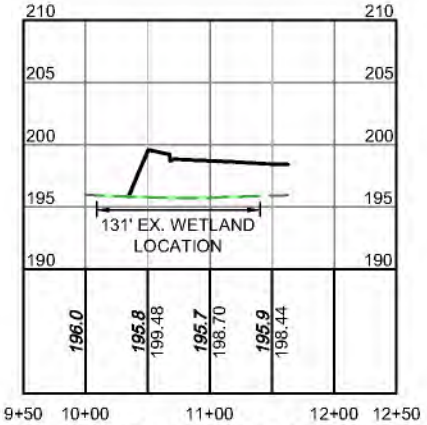
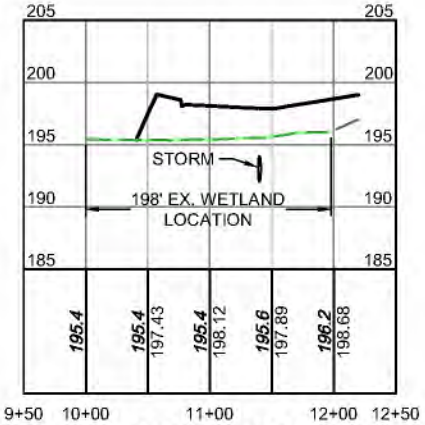


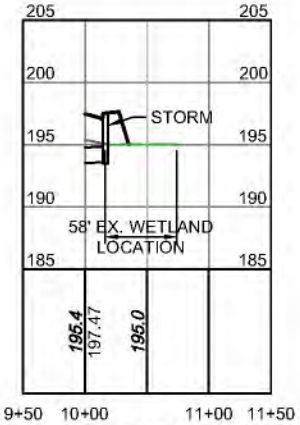
XSEC 12 PROFILE

HORIZ SCALE: 1"=100'
VERT SCALE: 1"=10



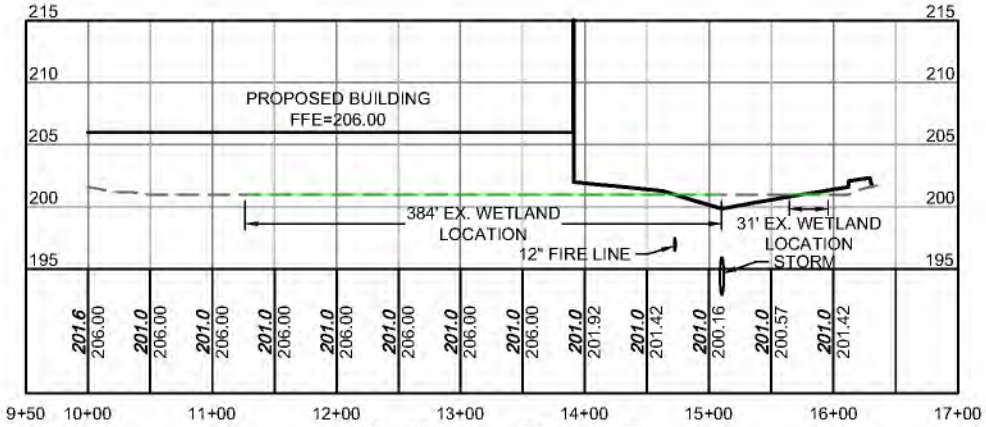
XSEC 13 PROFILE

HORIZ SCALE: 1"=100'
VERT SCALE: 1"=10



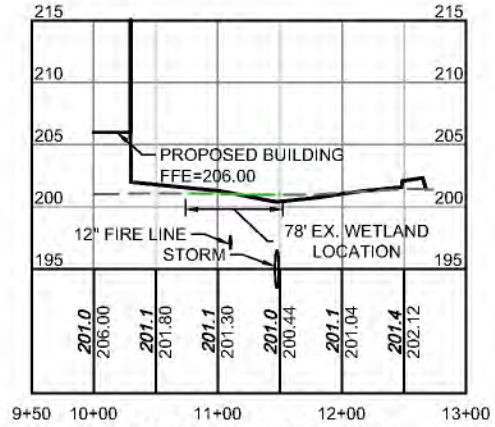
XSEC 14 PROFILE

HORIZ SCALE: 1"=100'
VERT SCALE: 1"=10



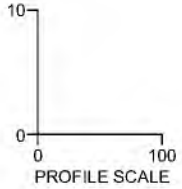
XSEC 15 PROFILE

HORIZ SCALE: 1"=100'
VERT SCALE: 1"=10



XSEC 16 PROFILE

HORIZ SCALE: 1"=100'
VERT SCALE: 1"=10



EXISTING GROUND
PROPOSED GRADE

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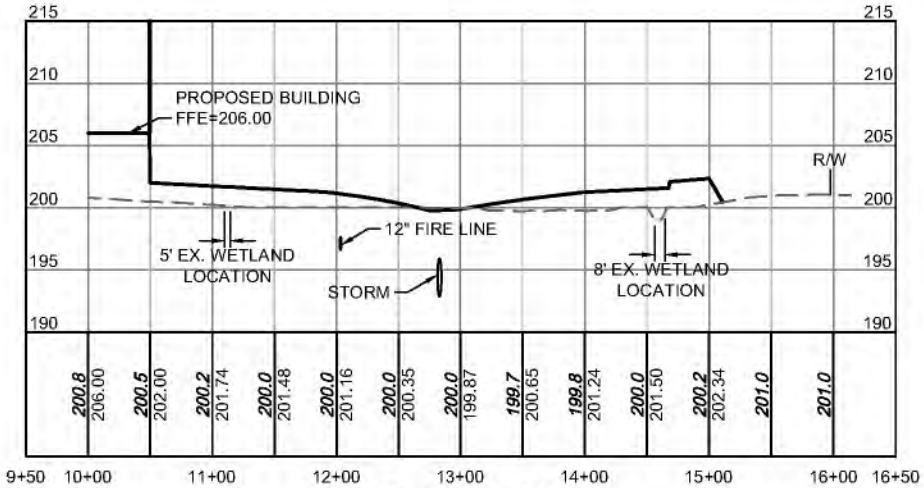

XSEC 17 PROFILE

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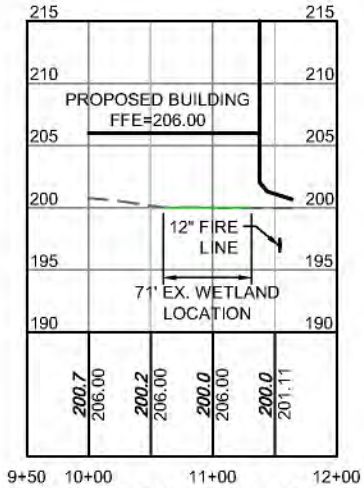

XSEC 18 PROFILE

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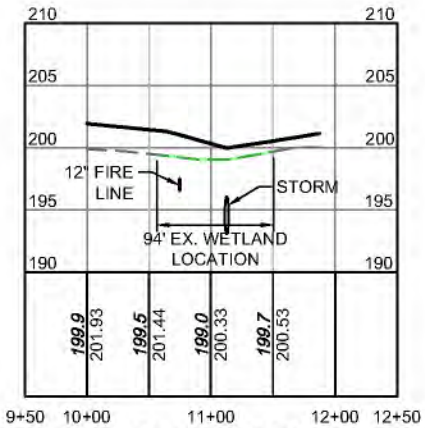

XSEC 19 PROFILE

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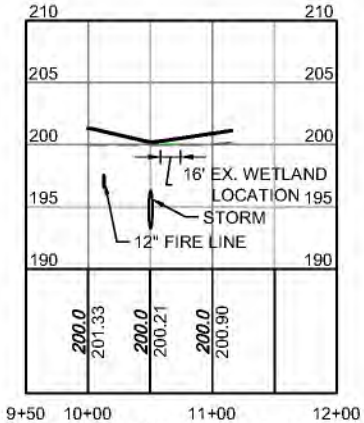

XSEC 20 PROFILE

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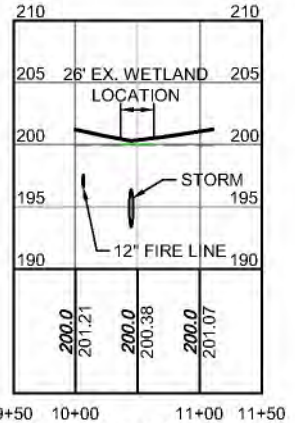

XSEC 21 PROFILE

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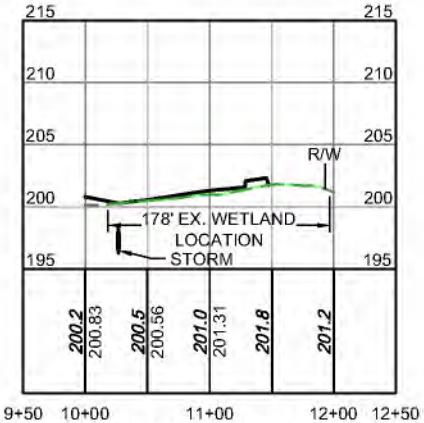

XSEC 22 PROFILE

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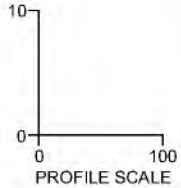

EXISTING GROUND
PROPOSED GRADE

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