

Appendix A:  
Resource Agency Coordination





# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ecological Services  
6669 Short Lane  
Gloucester, Virginia 23061



Date:

## Online Project Review Certification Letter

Project Name:

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be mailed to the address on the letterhead for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in “no effect” and/or “not likely to adversely affect” determinations for listed species and critical habitat and/or “no Eagle Act permit required” determinations for eagles regarding potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” and “not likely to adversely affect” determinations for listed species and critical habitat and “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species, critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for one year.

Applicant

Page 2

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website [http://www.fws.gov/northeast/virginiafield/endspecies/project\\_reviews.html](http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html). If you have any questions, please contact Kimberly Smith of this office at (804) 693-6694, extension 124.

Sincerely,

/s/ Cynthia A. Schulz

Cindy Schulz  
Supervisor  
Virginia Field Office

Enclosures - project review package





U.S. Fish and Wildlife Service

## Natural Resources of Concern

**This resource list is to be used for planning purposes only — it is not an official species list.**

**Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:**

VIRGINIA ECOLOGICAL SERVICES FIELD OFFICE  
6669 SHORT LANE  
GLOUCESTER, VA 23061  
(804) 693-6694  
<http://www.fws.gov/northeast/virginiafield/>

***Project Name:***

ANC Marker Removal



U.S. Fish and Wildlife Service

## Natural Resources of Concern

### ***Project Location Map:***



### ***Project Counties:***

Arlington, VA

### ***Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):***

MULTIPOLYGON (((-77.074283 38.8860901, -77.0729097 38.8867407, -77.0736607 38.8855724, -77.0732316 38.883735, -77.0720729 38.8836014, -77.071751 38.8830168, -77.0733174 38.8826159, -77.0740255 38.8815803, -77.0747122 38.8815469, -77.0749267 38.8827997, -77.0752271 38.8841192, -77.074283 38.8860901)))

### ***Project Type:***

Stream / Waterbody / Canals / Levees / Dikes



U.S. Fish and Wildlife Service

## Natural Resources of Concern

### *Endangered Species Act Species List*

There are no listed species found within the vicinity of your project.

### *FWS National Wildlife Refuges*

There are no refuges found within the vicinity of your project.

### *FWS Migratory Birds*

Not yet available through IPaC.

### *FWS Delineated Wetlands*

Not yet available through IPaC.

**From:** [Sumalee\\_Hoskin@fws.gov](mailto:Sumalee_Hoskin@fws.gov)  
**To:** [Underwood, Martin K. NAO](mailto:Underwood, Martin K. NAO)  
**Cc:** [Conner, Susan L. NAO](mailto:Conner, Susan L. NAO)  
**Subject:** RE: Arlington National Cemetery Marker Removal Project (UNCLASSIFIED)  
**Date:** Wednesday, June 13, 2012 11:48:02 AM

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Hi Marty,

Thanks for the completed species conclusion table and project review certification letter, everything looks right. Just keep this information for your files. I'm sorry, I mislead you, Federal agencies do not need to contact us or send us their project review packets for "no effect" and/or a "no Eagle Act permit is required" determinations. Keep a completed copy of the project review packet for your files.  
Sumalee

Note: Our phone lines are not working properly. Please try 804 824 9720 or 9740 to reach me. My ext. is 128

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

Tel: 804-693-6694 ex. 128

Fax: 804-693-9032

Visit us at <http://www.fws.gov/northeast/virginiafield/>

Inactive hide details for "Underwood, Martin K. NAO"  
<Martin.K.Underwood@usace.army.mil>"Underwood, Martin K. NAO"  
<Martin.K.Underwood@usace.army.mil>

"Underwood, Martin K. NAO" <Martin.K.Underwood@usace.army.mil>

06/13/2012 11:11 AM

To

"Sumalee\_Hoskin@fws.gov" <Sumalee\_Hoskin@fws.gov>

cc

"Conner, Susan L. NAO" <Susan.L.Conner@usace.army.mil>

Subject

RE: Arlington National Cemetery Marker Removal Project (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Hi Sumalee,

I think I got it this time. Please see attached WORD and PDF files. Thanks for your help and patience. Let me know if you need anything else. There is a bald eagle nest in Arlington County but it is at least a few miles away from the action area.

Thanks again,

Marty

-----Original Message-----

From: Sumalee\_Hoskin@fws.gov [[mailto:Sumalee\\_Hoskin@fws.gov](mailto:Sumalee_Hoskin@fws.gov)]  
Sent: Wednesday, June 13, 2012 9:55 AM  
To: Underwood, Martin K. NAO  
Cc: Conner, Susan L. NAO  
Subject: RE: Arlington National Cemetery Marker Removal Project (UNCLASSIFIED)

Hi Marty,

You just would need to send us a complete project review packet, our office's online process can be found here, [http://www.fws.gov/northeast/virginiafield/endspecies/Project\\_Reviews\\_Introduction.html](http://www.fws.gov/northeast/virginiafield/endspecies/Project_Reviews_Introduction.html). The process can be a bit confusing or cumbersome the first few times people go through it, but it does get better after a few times.

The components of the resulting project review packet are listed in Step 8 of the process ([http://www.fws.gov/northeast/virginiafield/endspecies/Project\\_Reviews\\_Step8.html](http://www.fws.gov/northeast/virginiafield/endspecies/Project_Reviews_Step8.html)) and will consist of:

- 1 ) the official species list (the version you attached was the unofficial list),
- 2 ) action area (the USGS map you sent earlier will work so no need to resend),
- 3 ) VaEagles Map from Step 6, and
- 4 ) the species conclusion table. For a project with no species it would be filled out as I listed below. I know there is no Critical Habitat in Arlington. I am not sure about an eagle nest in relation to your project, so please check, I was making an assumption. If you had a project that needed surveys, more would be included in your project packet.

Column #1 = "ESA listed species," Column #2 = "species not present" Column #3 = "no effect".

Column #1 = "Critical Habitat," Column #2 = "no critical habitat present," Column #3 = "no effect"

Column #1 = "Bald Eagle," Column #2 = "unlikely to disturb nesting bald eagles," Column #3 = "no eagle act permit required," Column #4= No nests within 660' and not within a concentration area" .

I hope this cleared this up for you, if not please feel free to contact me.

Sumalee

Note: Our phone lines are not working properly. Please try 804 824 9720 or 9740 to reach me. My ext. is 128

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

Tel: 804-693-6694 ex. 128

Fax: 804-693-9032

Visit us at <http://www.fws.gov/northeast/virginiafield/>

Inactive hide details for "Underwood, Martin K. NAO"  
<Martin.K.Underwood@usace.army.mil>"Underwood, Martin K. NAO"  
<Martin.K.Underwood@usace.army.mil>



**U.S. Army Corps  
Of Engineers**  
Norfolk District

**CERTIFICATE OF COMPLIANCE  
WITH  
ARMY CORPS OF ENGINEERS PERMIT**

**Northern Virginia Regulatory Section**

NAO-2011-02220 (Tributaries to Boundary Channel)

Arlington National Cemetery  
Attn Mr. Kenton L. Carson  
Administration Building, ANC  
Arlington, Virginia 22211

Date of Issuance: June 13, 2012

Permit Type: Nationwide Permit 18 and Nationwide permit 33

Within 30 days of completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

Regena Bronson  
US Army Corps of Engineers  
1329 Alum Springs Road, Suite 202  
Fredericksburg, Virginia 22401-7001  
[Regena.d.bronson@usace.army.mil](mailto:Regena.d.bronson@usace.army.mil)  
Phone 540.548.2838

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation has been completed in accordance with the nationwide permit conditions.

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Signature of Permittee

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Date



**DEPARTMENT OF THE ARMY**  
NORFOLK DISTRICT, CORPS OF ENGINEERS  
FORT NORFOLK, 803 FRONT STREET  
NORFOLK, VIRGINIA 23510-1096

June 13, 2012

REPLY TO  
ATTENTION OF:

Northern Virginia Regulatory Section  
NAO-2011-02220 (Tributaries to Boundary Channel)

Arlington National Cemetery  
Attn Mr. Kenton L. Carson  
Administration Building, ANC  
Arlington, Virginia 22211

Dear Mr. Carson:

This is in regard to your Department of the Army permit application number NAO-2011-02220 to remove approximately 1,136 stone markers from the North, South and Middle Branch channels. Approximately 1000 linear feet of stream (2000 square feet) will be disturbed for marker removal and stabilized with log check dams in various locations as needed for grade control. All work is to occur within Section 29 of the Arlington National Cemetery in Arlington Virginia. These impacts are detailed on the enclosed drawings entitled "Arlington National Cemetery Marker Removal, Arlington, Virginia, Sheets 1 through 5", prepared and submitted on behalf of the applicant by Norfolk District Corps of Engineers, Norfolk Virginia and dated May 23, 2012 (attached).

Your proposed work as outlined above satisfies the criteria contained in the Corps Nationwide Permit(s) 18 and 33, attached. The Corps Nationwide Permits were published in the February 21, 2012 Federal Register notice (77 FR 10184) and the regulations governing their use can be found in 33 CFR 330 published in Volume 56, Number 226 of the Federal Register dated November 22, 1991.

This nationwide permit verification is contingent upon the following project specific conditions:

Provided the project specific conditions detailed on the enclosed Sheets 3, 4 and 5 and the Nationwide Permit General Conditions (enclosed) are met, an individual Department of the Army Permit will not be required. In addition, the Virginia Department of Environmental Quality has provided a **conditional** §401 Water Quality Certification for Nationwide Permit Number(s) 18. A permit may be required from the Virginia Marine Resources Commission and/or your local wetlands board, and this verification is not valid until you obtain their approval, if necessary. This authorization does not relieve your responsibility to comply with local requirements pursuant to the Chesapeake Bay Preservation Act (CBPA), nor does it supersede local government authority and responsibilities pursuant to the Act. You should contact your local government before you begin work to find out how the CBPA applies to your project.

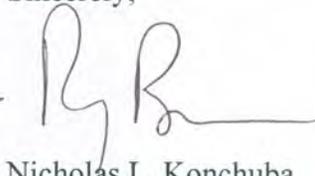
Enclosed is a "compliance certification" form, which must be signed and returned within 30 days of completion of the project, including any required mitigation. Your signature on this form certifies that you have completed the work in accordance with the nationwide permit terms and conditions.

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2017. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). Project specific conditions listed in this letter continue to remain in effect after the NWP verification expires, unless the district engineer removes those conditions. Activities completed under the authorization of an NWP which was in effect at the time the activity was completed continue to be authorized by that NWP.

If you have any questions, please contact Regena Bronson at (540) 548-2838 or [regena.d.bronson@usace.army.mil](mailto:regena.d.bronson@usace.army.mil).

Copies of this verification have been provided to Department of Environmental Quality, Virginia Marine Resource Commission and Virginia Department of Historical Resources.

Sincerely,

for  


Nicholas L. Konchuba  
Chief, Northern Virginia  
Regulatory Section



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3821

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

Thomas A. Faha  
Regional Director

July 5, 2012

Mr. Kenton L. Carson  
Arlington National Cemetery  
Administrative Building  
Arlington, Virginia 22211

RE: Department of the Army Permit NAO-2011-02220  
Arlington National Cemetery Marker Removal, Arlington County, Virginia  
Notification of No Permit Required

Dear Mr. Carson:

The Virginia Department of Environmental Quality (DEQ) has reviewed your application received on June 12, 2012 to impact approximately 1000 linear feet of stream channel for marker removal and stabilization during the removal of stone markers from the North, South and Middle Branch channels in Arlington County, Virginia

Provided that the project is authorized by the U.S. Army Corps of Engineers under Nationwide Permit (NWP) No.18 (Minor Discharges) and NWP 33 (Temporary Construction Access and Dewatering), and meets all of the §401 Certification Conditions, a Virginia Water Protection (VWP) general or individual permit will not be required for this project. This letter constitutes the §401 Certification for this project. You are advised that this does not give you the authority to violate Virginia's State Water Quality Standards.

Please note that should the size and scope of the project change, a VWP general or individual permit may be required. If you have any questions, please do not hesitate to contact me at 703-583-3937 or [Elizabeth.Cooper@deq.virginia.gov](mailto:Elizabeth.Cooper@deq.virginia.gov).

Respectfully,

A handwritten signature in cursive script that reads "Elizabeth Cooper".

Elizabeth Cooper  
VWP Program Specialist

cc: Ms. Cara Sydney USACE- VIA EMAIL  
Ms. Regena Bronson, USACE ~VIA EMAIL



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax: 804-698-4019 - TDD (804) 698-4021

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4020  
1-800-592-5482

April 18, 2012

Colonel Paul B. Olsen  
District Commander  
U. S. Army Corps of Engineers  
Norfolk District, Fort Norfolk  
803 Front Street  
Norfolk, Virginia 23510-1096

### **RE: Section 401 Water Quality Certification for 2012 Nationwide Permit Program**

Dear Colonel Olsen:

This is the Commonwealth of Virginia's decision with regard to §401 Water Quality Certification for activities authorized by the U.S. Army Corps of Engineers (the Corps) Nationwide Permits (NWP), and Norfolk District Regional Conditions. These NWPs were published in Part II of the *Federal Register* on February 21, 2012, with an effective date of March 19, 2012. The Commonwealth supports the issuance and use of nationwide and regional permits to expedite the processing of permits while safeguarding the environment and reducing duplication of effort by government regulatory agencies.

Pursuant to Virginia Water Protection (VWP) Permit Regulation 9VAC 25-210-130H, the State Water Control Board is issuing this final §401 Water Quality Certification as meeting the requirements of the VWP regulation after advertising and accepting public comment for 30 days on our intent to provide this certification.

The State Water Control Board hereby provides unconditional §401 Water Quality Certification for all of the Norfolk District Regional Conditions and for the following Nationwide Permits, as meeting the requirements of the Virginia Water Protection Permit Regulation, which serves as the Commonwealth's §401 Water Quality Certification:

NWP 1: *Aids to Navigation*

NWP 2: *Structures in Artificial Canals*

NWP 3: *Maintenance*

NWP 4: *Fish & Wildlife Harvesting, Enhancement, & Attraction Devices & Activities*

NWP 5: *Scientific Measurement Devices*  
NWP 6: *Survey Activities*  
NWP 8: *Oil and Gas Structures*  
NWP 9: *Structures in Fleeting and Anchorage Areas*  
NWP 10: *Mooring Buoys*  
NWP 11: *Temporary Recreational Structures*  
NWP 13: *Bank Stabilization*  
NWP 15: *U.S. Coast Guard Approved Bridges*  
NWP 20: *Oil Spill Cleanup*  
NWP 22: *Removal of Vessels*  
NWP 23: *Approved Categorical Exclusions*  
NWP 28: *Modifications of Existing Marinas*  
NWP 30: *Moist Soil Management for Wildlife*  
NWP 31: *Maintenance of Existing Flood Control Facilities*  
NWP 33: *Temporary Construction, Access and Dewatering*  
NWP 34: *Cranberry Production Activities*  
NWP 35: *Maintenance Dredging of Existing Basins*  
NWP 36: *Boat Ramps*  
NWP 37: *Emergency Watershed Protection and Rehabilitation*  
NWP 38: *Cleanup of Hazardous and Toxic Waste*  
NWP 45: *Repair of Uplands Damaged by Discrete Events*  
NWP 46: *Discharges Into Ditches*  
NWP 49: *Coal Re-mining Activities*  
NWP 50: *Underground Coal Mining Activities*

Unless otherwise covered under of the Norfolk District State Program General Permit SPGP-01, or other subsequent SPGPs, the State Water Control Board hereby provides §401 Water Quality Certification for the following Nationwide Permits as meeting the requirements of the Virginia Water Protection Permit Regulation, which serves as the Commonwealth's §401 Water Quality Certification provided that any compensatory mitigation meets the requirements in the Code of Virginia, Section 62.1-44.15:23 A through C:

NWP 14: *Linear Transportation Projects*  
NWP 21: *Surface Coal Mining Activities*  
NWP 29: *Residential Developments (Single Family Dwelling Only)*

The State Water Control Board hereby provides conditional §401 Water Quality Certification for the following Nationwide Permits provided that any compensatory mitigation meets the requirements in the Code of Virginia, Section 62.1-44.15:23 A through C and as detailed below:

NWP 7: *Outfall Structures and Maintenance*, provided that the structure or maintenance is not associated with intake structures  
NWP 12: *Utility Line Activities*, provided that the activities are not associated with intake structures or do not transport non-potable raw surface water  
NWP 16: *Return Water from Upland Contained Disposal Areas*, provided that the associated dredging does not otherwise require issuance of an Individual or General Virginia Water Protection Permit from VDEQ

NWP 18: *Minor Discharges*, provided that: (1) the discharge does not include water withdrawals, such as the construction of an intake structure, weir or water diversion structure; (2) a Virginia Pollutant Discharge Elimination System (VPDES) permit is obtained prior to the placement of any alternative septic system discharging into Virginia Department of Health (VDH) designated shellfish waters

NWP 19: *Minor Dredging*, provided that dredging is not used to create a deep space for water withdrawal

NWP 25: *Structural Discharges*, provided that the discharge does not include structures such as pilings to construct a platform to mount a pump for water withdrawals

NWP 27: *Stream and Wetland Restoration Activities*, provided that: (1) when used to permit a wetland mitigation bank, compensation for any surface water impacts is debited from the bank credits; (2) natural stream design shall be used for stream restoration projects; (3) monitoring for success of these sites shall be conducted including submittal of as-built plans, surveys, and photographs; (4) Dam removal for those dams meeting the following limits: a) less than 25 feet in height with a maximum impoundment capacity of less than 15 acre-feet or b) less than six feet in height with a maximum impounding capacity less than 50 acre-feet, or c) dams operated primarily for agricultural purposes which are less than 25 feet in height or which create a maximum impoundment capacity smaller than 100 acre-feet

NWP 32: *Completed Enforcement Actions*, provided that the impact does not exceed 2 acres of wetlands or 1500 linear feet of streambed and only past unauthorized impacts are addressed

NWP 40: *Agricultural Activities*, except for the location of concentrated animal feeding operations or waste storage facilities in surface waters or activities associated with intake structures or impoundments in surface waters.

NWP 41: *Reshaping Drainage Ditches*, provided the impact does not exceed 2 acres of wetlands or 1500 linear feet of streambed

NWP 42: *Recreational Facilities*, provided that: (1) the facility does not include an impoundment for irrigation; (2) compensation is required for wetland and/or stream loss due to direct impacts and permanent back flooding

NWP 43: *Stormwater Management Facilities*, provided that the facility is not associated with a water withdrawal

NWP 44: *Mining Activities*, provided that the activity is not for hydraulic dredging

NWP 48: *Commercial Shellfish Aquaculture Activities*, provided that the activity complies with the conditions of any VPDES permit issued for the facility, and provided that the associated activities do not include a surface water withdrawal or diversion

NWP 51: *Land Based Renewable Energy Generation Facilities*, provided that: (1) the discharge does not include water withdrawals, such as the construction of an intake structure, weir or water diversion structure; (2) the impact does not exceed 2 acres of wetlands or 1500 linear feet of streambed

NWP 52: *Water-Based Renewable Energy Generation Pilot Projects*, provided that: (1) the discharge does not include water withdrawals, such as the construction of an intake structure, weir or water diversion structure; (2) the impact does not exceed 2 acres of wetlands or 1500 linear feet of streambed

The following Nationwide Permit is not currently applicable in the Commonwealth and therefore does not require §401 Certification:

NWP 24: *Indian Tribe or State Administered Section 404 Programs*

The following Nationwide Permit is suspended for use in the State of Virginia and the activities that it authorized are covered under of the Norfolk District State Program General Permit SPGP-01, or other subsequent SPGPs:

NWP 39: *Commercial and Institutional Developments*

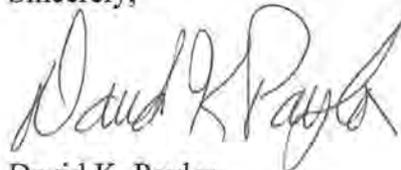
The State Water Control Board denies §401 Water Quality Certification for the following Nationwide Permits, as these types of projects require individual review under state laws:

NWP 17: *Hydropower Projects*

As to the exceptions for activities that would otherwise qualify for one of these Nationwide Permits, the State will continue to process applications for individual §401 Certification through a Virginia Water Protection General or Individual Permit pursuant to 9VAC 25-210-10 *et seq.* To accomplish our goal of individual review of certain activities, the Commonwealth is requesting that the Corps forward to the Department of Environmental Quality pre-construction notifications for any activities that fall into an excepted category.

Thank you for your continuing cooperation in the administration of the Joint Permit Program.

Sincerely,



David K. Paylor

cc: The Honorable Douglas W. Domenech  
Mr. William Seib, Chief, USACE, Baltimore District Regulatory Branch  
Mr. Jack G. Travelstead, Acting Commissioner, VMRC



## COMMONWEALTH of VIRGINIA

### DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

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

April 19, 2012

U.S. Army Corps of Engineers  
ATTN: CECW-CO-R  
441 G Street, NW  
Washington, DC 20314-1000

RE: Federal Consistency Determination for the Reissuance of Nationwide Permits and Virginia Regional Conditions, U.S. Army Corps of Engineers, DEQ 12-047F.

Dear Sir or Madam:

The Commonwealth of Virginia has completed its consistency review of the reissuance of the Nationwide Permits (NWPs) and Virginia Regional Conditions by the U.S. Army Corps of Engineers (Corps). The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal consistency documents submitted under the Coastal Zone Management Act (CZMA) and responding to appropriate officials on behalf of the Commonwealth. This letter is in response to the Corps' February 21, 2012 *Federal Register* notice (Vol. 77, No. 34, pages 10184-10290) announcing the reissuance of the NWPs, which serves as the Corps determination of CZMA consistency with the Virginia Coastal Zone Management Program. In addition, this letter responds to the consistency of the Virginia Regional Conditions submitted by the Corps Norfolk District in a February 24, 2012 letter. The following agencies and planning district commissions participated in this review:

Department of Environmental Quality  
Department of Conservation and Recreation  
Department of Game and Inland Fisheries  
Virginia Marine Resources Commission  
Department of Agriculture and Consumer Services  
Department of Health  
Department of Historic Resources  
Hampton Roads Planning District Commission  
Crater Planning District Commission  
Richmond Regional Planning District Commission

In addition, the Department of Forestry, Virginia Institute of Marine Science, Accomack-Northampton Planning District Commission, Middle Peninsula Planning District Commission, Northern Neck Planning District Commission, George Washington Regional Commission and Northern Virginia Regional Commission were invited to comment on the proposed action.

## **DESCRIPTION OF THE PROPOSED ACTION**

The U.S. Army Corps of Engineers proposes to reissue 48 of the 49 existing nationwide permits, general conditions and definitions, with some modifications. The Corps is also issuing two new NWPs, three new general conditions, and three new definitions. The Corps issues NWPs to authorize certain activities that require Department of the Army permits under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. Authorizations apply to activities such as aids to navigation, utility lines, bank stabilization, road crossings, stream and wetland restoration, residential developments, mining, commercial shellfish aquaculture, and agricultural. The NWPs are intended to protect the aquatic environment and the public interest while effectively authorizing activities that have minimal individual and cumulative adverse effects on the aquatic environment. In addition, it is sometimes necessary to add regional conditions to NWPs to address state water quality standards and to be consistent with state coastal zone management plans. Accordingly, the Corps Norfolk District has submitted regional conditions for Virginia that are applicable to specific NWPs. The NWPs and regional conditions are issued for a period of five years. The reissued NWPs and regional conditions are effective beginning March 19, 2012 to March 18, 2017.

## **PUBLIC PARTICIPATION**

In accordance with 15 CFR §930.2, the public was invited to participate in the review of the Corps' submission under federal consistency. Public notice of this proposed action was published on the DEQ website from March 5, 2012 through March 30, 2012. No public comments were received in response to the notice.

## **FEDERAL CONSISTENCY ANALYSIS**

Pursuant to the Coastal Zone Management Act of 1972 (§ 1456(c)), as amended, and the federal consistency regulations implementing the CZMA (15 CFR Part 930, Subpart C, § 930.30 *et seq.*) federal actions that can have reasonably foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia Coastal Zone Management Program (VCP). The VCP is comprised of a network of programs administered by several agencies. In order to be consistent with the VCP, the federal agency action must be consistent with all the applicable enforceable policies of the VCP prior to commencing the action.

The agencies responsible for the administration of the enforceable policies of the VCP generally agree with the Corps' determination. The Corps must ensure that the proposed action is consistent with the enforceable policies. The analysis which follows responds to the Corps' discussion of the enforceable policies of the VCP that apply to these activities and review comments submitted by agencies that administer the enforceable policies.

## **FEDERAL CONSISTENCY CONDITIONAL CONCURRENCE**

Based on the comments submitted by the agencies administering the enforceable policies of the VCP, DEQ concurs that the reissuance of the NWP and Virginia Regional Conditions, as proposed, is consistent with the VCP **provided** that the following conditions, discussed below, are satisfied:

- 1) Prior to construction, applicants shall obtain all required permits and approvals not yet secured for the activities to be performed that are applicable to the VCP's enforceable policies and that applicants also adhere to all the conditions contained therein.
  - The Virginia Marine Resources Commission's (VMRC) concurrence of consistency with the subaqueous lands management enforceable policy is based on the recognition that prospective permittees may be required to obtain additional state and/or local approvals prior to commencement of work in waters of the United States from the VMRC and/or the local wetlands board. Such approvals must precede implementation of the projects.
  - Similarly, the Department of Conservation and Recreation, Division of Stormwater Management, Local Implementation (formerly the Division of Chesapeake Bay Local Assistance) concurs that the proposed action is consistent with the coastal lands management enforceable policy provided projects are designed and constructed in a manner consistent with all state and local requirements pursuant to the Chesapeake Bay Preservation Act ("the Act") (Virginia Code §10.1-2100 et seq.) and the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20 et seq.). Applicable projects must receive local approval to be consistent with the coastal lands management enforceable policy.
- 2) The State Water Control Board has provided §401 Clean Water Act Water Quality Certification for the NWP and Virginia Regional Conditions. Therefore, the activities that qualify for the NWP meet the requirements of DEQ's Virginia Water Protection Permit Regulation, provided that the permittee abides by the conditions of the NWP. As to the exceptions for activities that would otherwise qualify for one of these Nationwide Permits, the State will continue to process applications for individual §401 Certification through a Virginia Water Protection General or Individual Permit pursuant to 9 VAC 25-210-10 *et seq.* The Commonwealth requests that the Corps forward to DEQ pre-construction

notifications for any activities that fall into an excepted category for individual review of certain activities.

In addition, we recommend that the Corps continue to work with the Department of Game and Inland Fisheries on the development of an agreement providing for the agency's review and comment on NWP's to ensure impacts to aquatic resources are addressed and to ensure consistency with the fisheries management enforceable policy of the VCP.

In accordance with the *Federal Consistency Regulations* at 15 CFR Part 930, section 930.4, this conditional concurrence is based on the applicants demonstrating to the Corps that they have obtained, or will obtain, all necessary authorizations prior to implementing a project which qualifies for a NWP. If the requirements of section 930.4, sub-paragraphs (a)(1) through (a)(3) are not met, this conditional concurrence becomes an objection under 15 CFR Part 930, section 940.43.

Other state approvals which may apply to this project are not included in this consistency concurrence. Therefore, the Corps must ensure that the action is administered in accordance with all applicable federal, state, and local laws and regulations.

## **APPLICABLE ENFORCEABLE POLICIES OF THE VCP**

### **1. Fisheries Management.**

#### **1(a) Agency Jurisdiction.**

##### ***(i) Department of Game and Inland Fisheries***

The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts. For more information, see the DGIF website at [www.dgif.virginia.gov](http://www.dgif.virginia.gov).

##### ***(ii) Virginia Marine Resources Commission***

The Virginia Marine Resources Commission (Virginia Code 28.2-200 to 28.2-713) and the Department of Game and Inland Fisheries (Virginia Code 29.1-100 to 29.1-570) have management authority for the conservation and enhancement of finfish and shellfish resources in the Commonwealth.

***(iii) Virginia Department of Health***

The Virginia Department of Health's (VDH) Division of Shellfish Sanitation (DSS) is responsible for protecting the health of the consumers of molluscan shellfish and crustacea by ensuring that shellfish growing waters are properly classified for harvesting, and that molluscan shellfish and crustacea processing facilities meet sanitation standards. The mission of this Division is to minimize the risk of disease from molluscan shellfish and crustacea products at the wholesale level by classifying shellfish waters for safe commercial and recreational harvest; by implementing a statewide regulatory inspection program for commercial processors and shippers; and by providing technical guidance and assistance to the shellfish and crustacea industries regarding technical and public health issues.

**1(b) Agency Findings.**

***(i) Department of Game and Inland Fisheries***

According to DGIF, it is difficult to determine that all of the NWP's are consistent with the fisheries management enforceable policy of the VCP, as currently there is no process to review each project covered by these permits. In many situations, the regional and standard permit conditions required through coverage by the NWP result in consistency with the fisheries management enforceable policy. However, there are situations, depending on project location and scope, where these conditions may not adequately protect the fisheries resources known from the impacted waterbody. DEQ has provided Section 401 Clean Water Act (CWA) certification for some of the NWP's, allowing the agency to waive DEQ permit issuance for some projects occurring in coastal waters. In these cases, there is no review of the project by DGIF to ensure protection of important fisheries resources and listed species.

DGIF is currently working on the development of an agreement with the Corps Norfolk District and the resource agencies to define a project review process. This agreement may result in a process that allows DGIF to review Corps permit applications of interest to the agency.

***(ii) Virginia Marine Resources Commission***

VMRC has no comments specific to its fisheries management responsibilities and the reissuance of the NWP's and Virginia Regional Conditions.

***(iii) Virginia Department of Health***

The Virginia Department of Health finds that the proposed reissuance of the NWP's and Virginia Regional Conditions does not conflict with regulations administered by the Division of Shellfish Sanitation.

**1(c) Conclusion.** DGIF concludes that the reissuance of the Corps NWP and Virginia Regional Conditions is consistent with the fisheries management enforceable policy under its jurisdiction, provided the Corps continues to coordinate with DGIF to address its concerns with the impacts of permitted actions on aquatic resources.

For additional information, contact DGIF, Amy Ewing at (804) 367-2211; VRMC, Robert Neikirk at (757) 247-2254; and/or VDH-DSS, Robert Croonenberghs at (804) 864-7480.

## **2. Subaqueous Lands Management.**

**2(a) Agency Jurisdiction.** Pursuant to Section 28.2-1204 of the Code of Virginia the Virginia Marine Resources Commission has jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks in the Commonwealth. Accordingly, any portion of the project involving encroachments channelward of mean low water below the fall line may require a permit.

VMRC serves as the clearinghouse for the Joint Permit Application (JPA) used by:

- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands;
- U.S. Army Corps of Engineers (Corps) for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a Virginia Water Protection Permit; and
- local wetlands board for impacts to wetlands.

**2(b) Agency Findings.** VRMC finds that many of the activities authorized by the NWP may require permits from VMRC or a Local Wetlands Board pursuant to the requirements of Chapter 12 or Title 28.2 of the Code of Virginia (Tony Watkinson and Ellie Irons, May 18, 2012 telephone conversation). Should projects covered by the NWP and those covered by the Virginia Regional Conditions result in encroachments in, on or over state-owned submerged lands, a JPA will need to be submitted to VMRC for review.

**2(c) Conclusion.** VMRC has no objection to the proposed reissuance of the Corps' Nationwide Permits and Virginia Regional Conditions. Accordingly, the proposed action will be consistent with the subaqueous lands management enforceable policy of the VCP provided the applicants obtain any required permit for encroachment in, on or over subaqueous lands.

For additional information, contact VMRC, Tony Watkinson at (757) 247-2250.

### **3. Wetlands Management.**

#### **3(a) Agency Jurisdiction.**

##### ***(i) Department of Environmental Quality***

The State Water Control Board (SWCB) promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge Elimination System Permit, Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection Permit (VWPP). The VWPP is a state permit which governs wetlands, surface water, and surface water withdrawals/impoundments. It also serves as § 401 certification of the federal *Clean Water Act* § 404 permits for dredge and fill activities in waters of the U.S. The VWPP Program is under the Office of Wetlands and Water Protection/Compliance, within the DEQ Division of Water Quality Programs. In addition to central office staff that review and issue VWP permits for transportation and water withdrawal projects, the six DEQ regional offices perform permit application reviews and issue permits for the covered activities.

##### ***(ii) Virginia Marine Resources Commission***

Tidal wetlands are administered by the Virginia Marine Resources Commission under the authority of Virginia Code 28.2-1301 through 28.2-1320.

#### **3(b) Agency Findings.**

##### ***(i) Department of Environmental Quality***

The State Water Control Board has provided unconditional §401 Water Quality Certification for all of the Norfolk District Regional Conditions and for certain NWP, as meeting the requirements of the Virginia Water Protection Permit Regulation, which serves as the Commonwealth's §401 Water Quality Certification. NWP not receiving unconditional certification are discussed as follows.

The following NWP meet the requirements of the Virginia Water Protection Permit Regulation, provided that any compensatory mitigation meets the requirements in the Code of Virginia, Section 62.1-44.15:23 A through C:

- NWP 14: *Linear Transportation Projects*
- NWP 21: *Surface Coal Mining Activities*
- NWP 29: *Residential Developments (Single Family Dwelling Only)*

The following NWP were granted conditional §401 Water Quality Certification provided that any compensatory mitigation meets certain requirements in the Code of Virginia, Section 62.1-44.15:23 A through C (the detailed conditions are attached):

- NWP 7: *Outfall Structures and Maintenance*

Reissuance of Nationwide Permits and Virginia Regional Conditions  
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NWP 12: *Utility Line Activities*  
NWP 16: *Return Water from Upland Contained Disposal Areas*  
NWP 18: *Minor Discharges*  
NWP 19: *Minor Dredging*  
NWP 25: *Structural Discharges*  
NWP 27: *Stream and Wetland Restoration Activities*  
NWP 32: *Completed Enforcement Actions*  
NWP 40: *Agricultural Activities*  
NWP 41: *Reshaping Drainage Ditches*  
NWP 42: *Recreational Facilities*  
NWP 43: *Stormwater Management Facilities*  
NWP 44: *Mining Activities*  
NWP 48: *Commercial Shellfish Aquaculture Activities*  
NWP 51: *Land Based Renewable Energy Generation Facilities*  
NWP 52: *Water-Based Renewable Energy Generation Pilot Projects*

The following NWP is not currently applicable in the Commonwealth and, therefore, does not require §401 Certification:

NWP 24: *Indian Tribe or State Administered Section 404 Programs*

The following NWP is suspended for use in the State of Virginia and the activities that it authorized are covered under of the Norfolk District State Program General Permit SPGP-01, or other subsequent SPGPs:

NWP 39: *Commercial and Institutional Developments*

The State Water Control Board denies §401 Water Quality Certification for the following NWP, as these types of projects require individual review under state laws:

NWP 17: *Hydropower Projects*

As to the exceptions for activities that would otherwise qualify for one of these Nationwide Permits, the State will continue to process applications for individual §401 Certification through a Virginia Water Protection General or Individual Permit pursuant to 9 VAC 25-210-10 *et seq.* The Commonwealth requests that the Corps forward to DEQ pre-construction notifications for any activities that fall into an excepted category for individual review of certain activities.

***(ii) Virginia Marine Resources Commission***

According to VMRC, many of the activities authorized by the NWPs may require permits from VMRC or a Local Wetlands Board pursuant to the requirements of Chapter 12 or Title 28.2 of the Code of Virginia. Should projects covered by the NWPs and those covered by the Virginia Regional Conditions result in encroachments to tidal wetlands, a Joint Permit Application will need to be submitted to VMRC for review.

**3(c) Conclusion.** DEQ has no objection to, and supports, the reissuance of the Corps' Nationwide Permits and Virginia Regional Conditions. Full details of DEQ's §401 Water Quality Certification is attached. Applicants which qualify for NWP's that will impact tidal wetlands must submit a JPA to VMRC for review prior to any disturbance.

For additional information, contact DEQ-OWWP, David Davis at (804) 698-4105 or VMRC, Tony Watkinson at (757) 247-2250.

#### **4. Dunes Management.**

**4(a) Agency Jurisdiction.** Dune protection is carried out pursuant to the Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes and beaches. This program is administered by the Marine Resources Commission (Virginia Code 28.2-1400 through 28.2-1420).

**4(b) Agency Findings.** Should projects covered by the NWP's and those covered by the Virginia Regional Conditions result in encroachments to primary dunes and beaches, a Joint Permit Application must be submitted to VMRC for review.

**4(c) Conclusion.** For consistency with the dunes management enforceable policy of the VCP, applicants for NWP's that will impact dunes and beaches must submit a JPA to VMRC for review.

For additional information, contact VMRC, Tony Watkinson at (757) 247-2250.

#### **5. Nonpoint Source Pollution Control.**

**5(a) Agency Jurisdiction.** The Department of Conservation and Recreation (DCR) Division of Stormwater Management (DSM) administers the nonpoint source pollution control enforceable policy through the *Virginia Erosion and Sediment Control Law and Regulations (VESCL&R)* and *Virginia Stormwater Management Law and Regulations (VSWML&R)*.

**5(b) Agency Comments.** DCR-DSM did not comment on the reissuance of the NWP's.

For additional information, contact DCR-DSM, John McCutcheon at (804) 371-7440,

#### **6. Point Source Pollution Control.**

**6(a) Agency Jurisdiction.** The State Water Control Board (SWCB) promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge Elimination System Permit (VPDES), Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection Permit. In addition to the VWPP, DEQ issues individual VPDES permits to both municipal and industrial facilities. Permit requirements, special conditions, effluent limitations and

monitoring requirements are determined for each facility on a site specific basis in order to meet applicable water quality standards. General permits are permits written for a general class of dischargers including Discharges of Storm Water Associated With Industrial Activity (9 VAC 25-151 (VAR 05)). The six DEQ regional offices perform permit application reviews and issue permits for the covered activities.

**6(b) Agency Comments.** As previously discussed (**3. Wetlands Management**), the State Water Control Board has provided §401 Water Quality Certification for the NWP's and Virginia Regional Conditions. In addition, the VWPP program coordinated the §401 Certification review with the VPDES program (Steve Hardwick and John Fisher, April 18, 2012 telephone conversation).

**6(c) Conclusion.** The reissuance of the NWP's and Virginia Regional Conditions is consistent, to the maximum extent practicable, with the point source pollution control enforceable policy of the VCP.

For additional information, contact DEQ-OWWP, David Davis at (804) 698-4105.

## **7. Shoreline Sanitation.**

**7(a) Agency Jurisdiction.** This program is administered by the Department of Health, Division of Onsite Sewage and Water Services (Virginia Code 32.1-164 through 32.1-165) to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth.

**7(b) Agency Findings.** The Virginia Department of Health finds that the proposed reissuance of the NWP's and Virginia Regional Conditions does not conflict with regulations administered by the Division of Onsite Sewage and Water Services.

For additional information, contact VDH-DOSWS, Marcia Degen at (804) 387-1883.

## **8. Air Pollution Control.**

**8(a) Agency Jurisdiction.** DEQ's Air Quality Division, on behalf of the State Air Pollution Control Board, is responsible to develop regulations that become Virginia's *Air Pollution Control Law*. DEQ is charged to carry out mandates of the state law and related regulations as well as Virginia's federal obligations under the *Clean Air Act* as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to

be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

**8(b) Agency Findings.** According to the DEQ Air Division, NWP's may be issued for projects located in a designated ozone maintenance areas and ozone nonattainment area and emission control area for volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>). Precursors to ozone (O<sub>3</sub>) pollution include VOCs and NO<sub>x</sub>.

**8(c) Recommendation.** The applicant should take all reasonable precautions to limit emissions of VOCs and NO<sub>x</sub>, principally by controlling or limiting the burning of fossil fuels.

**8(d) Requirements.** The project applicant must comply with the following requirements as applicable.

**(i) Fugitive Dust**

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

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

**(ii) Open Burning**

If project activities include open burning, this activity must meet the requirements of 9 VAC 5-130-10 through 9 VAC 5-130-60 and 9 VAC 5-130-100 of the *Regulations* for open burning, and it may require a permit. The *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning. The applicant should contact the appropriate local officials to determine what local requirements, if any, exist.

For additional information, contact the DEQ Air Division, Kotur Narasimhan at (804) 698-4415.

## **9. Chesapeake Bay Preservation Areas.**

**9(a) Agency Jurisdiction.** The DCR-DSM Local Assistance (LI) administers the coastal lands management enforceable policy of the VCP, which is governed by the *Chesapeake Bay Preservation Act* (Virginia Code §10.1-2100-10.1-2114) and *Chesapeake Bay Preservation Area Designation and Management Regulations* (9 VAC 10-20 *et seq.*).

**9(b) Agency Findings.** According to Section 9 VAC 10-20-120 B 11 of the *Regulations*, local governments are required to obtain evidence that all wetlands permits required by state and federal agencies have been obtained prior to the initiation of any onsite land-disturbing activity. The issuance of a NWP for an activity in a wetland that is designated by the local government as a Resource Protection Area (RPA) does not override the requirements in Section 9 VAC 10-20-130 of the *Regulations* that limits development activities in RPAs. The local government is still required to ensure that any permitted activity within a designated RPA complies with all applicable requirements as outlined under the *Regulations*, regardless of whether or not such an activity has received a permit from the Corps.

**9(c) Conclusion.** DCR-DSM-LI concludes that the reissuance of the NWPs and Virginia Regional Conditions would be consistent with the coastal lands management enforceable policy of the VCP as administered through the *Chesapeake Bay Preservation Act and Regulations*, since specific projects under NWPs will be reviewed by the locality to ensure that all other applicable requirements under their local *Bay Act* program will be enforced.

For additional information, contact DCR-DSM-LI, Joan Salvati at (804) 225-3440.

## **ADDITIONAL ENVIRONMENTAL CONSIDERATIONS**

In addition to the enforceable policies of the VCP, comments were also provided with respect to applicable requirements and recommendations of the following programs:

### **1. Solid and Hazardous Wastes.**

**1(a) Agency Jurisdiction.** Solid and hazardous wastes in Virginia are regulated by the Virginia Department of Environmental Quality, the Virginia Waste Management Board (VWMB) and the U.S. Environmental Protection Agency. They administer programs created by the federal Resource Conservation and Recovery Act, Comprehensive Environmental Response Compensation and Liability Act, commonly called Superfund, and the Virginia Waste Management Act. DEQ administers regulations established by the VWMB and reviews permit applications for completeness and conformance with facility standards and financial assurance requirements. All Virginia localities are required, under the Solid Waste Management Planning Regulations, to identify the strategies they will follow on the management of their solid wastes to include items such

as facility siting, long-term (20-year) use, and alternative programs such as materials recycling and composting.

## **1(b) Requirements.**

### ***(i) Waste Management***

Any soil that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations. Some of the applicable state laws and regulations are:

- Virginia Waste Management Act (Code of Virginia Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9 VAC 20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9 VAC 20-80);
- Virginia Regulations for the Transportation of Hazardous Materials (9 VAC 20-110).

Some of the applicable federal laws and regulations are:

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 *et seq.*);
- Title 40 of the Code of Federal Regulations; and
- U.S. Department of Transportation Rules for Transportation of Hazardous materials (49 CFR Part 107).

### ***(ii) Asbestos-containing Material and Lead-based Paint***

Any existing structures to be demolished or otherwise impacted by construction should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to construction. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, state regulations 9 VAC 20-80-640 for ACM and 9 VAC 20-60-261 for LBP must be followed.

## **1(c) Recommendations.**

### ***(i) Data Base Search***

DEQ recommends that permit applicants conduct an environmental investigation on and near the property to identify any solid or hazardous waste sites or issues before work begins. This investigation should include a search of the following waste-related databases:

- <http://www.epa.gov/superfund/sites/cursites/index.htm> or
- [http://www.epa.gov/enviro/html/rcris/rcris\\_query\\_java.html](http://www.epa.gov/enviro/html/rcris/rcris_query_java.html).

***(ii) Pollution Prevention***

DEQ recommends the implementation of pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

Contact DEQ Division of Land Protection and Revitalization (DLPR), Steve Coe at (804) 698-4229, for additional information.

**2. Natural Heritage Resources.**

**2(a) Agency Jurisdiction.** The mission of the Virginia Department of Conservation and Recreation (DCR) is to conserve Virginia's natural and recreational resources. The DCR-Natural Heritage Program's (DCR-DNH) mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The *Virginia Natural Area Preserves Act*, 10.1-209 through 217 of the *Code of Virginia*, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources (the habitats of rare, threatened, and endangered species, significant natural communities, geologic sites, and other natural features).

**2(b) Agency Comments.** DCR-DNH provided comments on the following NWPs.

***(i) Regional Conditions Applicable to Specific NWPs***

**NWP 12-Utility Line Activities**

Existing maintained utility line corridors may provide habitat for natural heritage resources including rare plants. As part of the pre-construction notification, DCR recommends a database search be conducted for construction, maintenance, repair of utility lines to determine if documented natural heritage resources occur within the project area. For avoiding and minimizing impacts to the documented resources, DCR recommends coordination with the Division of Natural Heritage for specific protection recommendations.

***(ii) Regional Conditions Applicable to Multiple and/or All NWPs***

**4. Conditions for Federal-Listed Species and Designed Critical Habitat**

DCR recommends that species with state-listed status, but no federal-listed status, be included as part of the pre-construction notification for NWPs provided 401 Water Quality Certification. If a state-listed species is documented within the project area and determined to be adversely impacted by the proposed project, DCR recommends the

activity not be authorized under a NWP and the permittee be required to obtain an individual permit.

### 7. Conditions Regarding Invasive Species

Invasive species are the second largest threat to natural heritage resources. DCR supports the condition of not using invasive species as identified on the most current *Virginia Department of Conservation and Recreation's Invasive Alien Plant List* for re-vegetation activities authorized by any NWP and using only native plants (see [http://www.dcr.virginia.gov/natural\\_heritage/nativeplants.shtml](http://www.dcr.virginia.gov/natural_heritage/nativeplants.shtml)) for restoration activities.

### 8. Conditions Pertaining to Countersinking of Pipes and Culverts in Nontidal Waters

DCR supports countersinking of pipes to maintain natural water velocities and allow movement of aquatic organisms. DCR also supports countersinking during the emergency pipe replacements and after the initial repair is completed if necessary.

- f. ii. Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Department of Conservation and Recreation, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. As part of the pre-notification process, DCR recommends the permittee coordinate with DGIF and DCR if a state listed species is identified within the search area.

### 9. Conditions for the Repair of Pipes

- A. b. During the pre-construction notification, DCR recommends the Corps Norfolk District conduct a database search and consult with DCR and DGIF if a state-listed species is identified within the search area.

Contact DCR-DNH, Rene Hypes at (804) 371-2807, for additional information.

### 3. Protected Plant and Insect Species

**3(a) Agency Jurisdiction.** The *Endangered Plant and Insect Species Act* of 1979, Chapter 39 §3.1-1020 through 1030 of the *Code of Virginia*, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect, and manage endangered and threatened species of plants and insects. The VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the U.S. Fish and Wildlife Service (USFWS), DCR-DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by USFWS, are available, adherence to the order and tasks outlined in the plans are followed to the extent possible.

**3(b) Agency Comments.** VDACS has no comments with regard to endangered plant and insect species.

For additional information, contact VDACS, Keith Tignor at (804) 786-3515.

#### **4. Water Supply.**

**4(a) Agency Jurisdiction.** The Virginia Department of Health (VDH), Office of Drinking Water (ODW) reviews projects for the potential to impact public drinking water sources (groundwater wells, springs and surface water intakes).

**4(b) Agency Findings.** The Virginia Department of Health finds that the proposed reissuance of the NWPs and Virginia Regional Conditions does not conflict with regulations administered by the Office of Drinking Water.

Contact VDH-ODW, Diedre Forsgren at (804) 864-7241 for additional information.

#### **5. Forest Resources.**

**5(a) Agency Jurisdiction.** The mission of the Virginia Department of Forestry (VDOF) is to protect and develop healthy, sustainable forest resources for Virginians. VDOF was established in 1914 to prevent and suppress forest fires and reforest bare lands. Since the Department's inception, it has grown and evolved to encompass other protection and management duties including: protecting Virginia's forests from wildfire, protecting Virginia's waters, managing and conserving Virginia's forests, managing state-owned lands and nurseries, and managing regulated incentive programs for forest landowners.

**5(b) Agency Findings.** VDOF finds that the conditions outline in the Virginia Regional Conditions (3.b.ii.) for NWP 12 will result in no significant impact to the overall forest resources of the Commonwealth.

**5(c) Recommendations.** Measures to consider when tree harvesting occurs are as follows:

- Wherever feasible, existing groupings and/or clusters of trees and natural vegetation should remain on the site to provide esthetic and environmental benefits.
- Trees not slated for removal should be protected from the effects of construction activities associated with future construction. These trees should be marked and fenced at least to the drip line or the end of the root system, whichever extends farther from the stem. Marking should be done with highly visible ribbon so that equipment operators see the protected areas easily.

- Parking and stacking of heavy equipment and construction materials near trees can damage root systems by compacting the soil. Soil compaction, from weight or vibration, affects root growth, water and nutrient uptake, and gas exchange. The protection measures suggested above should be used for parking and stacking as well as for moving of equipment and materials. If parking and stacking are unavoidable, contractors should use temporary crossing bridges or mats to minimize soil compaction and mechanical injury to plants.
- Any stockpiling of soil should take place away from trees. Piling soil at a tree stem can kill the root system of the tree. Soil stockpiles should be covered, as well, to prevent soil erosion and fugitive dust.

For additional information, contact VDOF, Tom Harlan at (434) 220-9064.

## **6. Historic Resources.**

**6(a) Agency Jurisdiction.** The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated State's Historic Preservation Office, ensures that federal actions comply with *Section 106 of the National Historic Preservation Act of 1966 (NHPA)*, as amended, and its implementing regulation at 36 CFR Part 800. The NHPA requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding.

**6(b) Agency Comments.** DHR is working directly with the Corps under *Section 106 NHPA*.

For additional information, contact DHR, Roger Kirchen at (804) 482-6091.

## **7. Regional Planning Districts.**

**7(a) Agency Jurisdiction.** In accordance with CFR 930, Subpart A, § 930.6(b) of the *Federal Consistency Regulations*, DEQ, on behalf of the state, is responsible for securing necessary review and comment from other state agencies, the public, regional government agencies, and local government agencies, in determining the Commonwealth's concurrence or objection to a federal consistency determination.

### **7(b) Findings.**

#### ***(i) Hampton Roads Planning District Commission***

The Hampton Roads Planning District Commission (HRPDC) finds the proposed reissuance of NWPs and Virginia Regional Conditions consistent with local and regional plans and policies.

**(ii) Richmond Regional Planning District Commission**

The staff of the Richmond Regional Planning District Commission (RRPDC) has no objection to the reissuance of the NWP's and the Virginia Regional Conditions.

**(iii) Crater Planning District Commission**

The Crater Planning District Commission (CPDC) staff finds the NWP's and Virginia Regional Conditions in full accord with the CPDC's environmental policy directives. CPDC supports the proposed action.

For more information contact HRPDC, John Carlock at (757) 420-8300, RRPDC, Barbara Jacocks at (804) 232-2033 and CPDC, Mark Bittner at (804) 861-1666 x237.

Thank you for the opportunity to review and respond to the reissuance of the Nationwide Permits and Virginia Regional Conditions. The detailed comments of reviewing agencies are attached for your review. If you have questions, please call Ellie Irons at (804) 698-4325 or John Fisher at (804) 698-4339.

Sincerely,



Rick Weeks, Chief Deputy  
Executive Management

Enclosures

Ec: Ellie Irons, DEQ-OEIR  
David Davis, DEQ-OWSP  
Steve Coe, DEQ-DLPR  
Kotur Narasimhan, DEQ-Air  
Tony Watkinson, VMRC  
Robbie Rhur, DCR  
Amy Ewing, DGIF  
Keith Tignor, VDACS  
Barry Matthews, VDH  
Roger Kirchen, DHR  
Tom Harlan, VDOF  
Pam Mason, VIMS  
Elaine Meil, A-NPDC  
John Carlock, HRPDC  
Dennis Morris, CPDC  
Robert Crum, RRPDC  
Lewis Lawrence, MPPDC  
Jerry Davis, NNPDC

**From:** Underwood, Martin K. NAO  
**To:** ["Jason Papacosma"; Qianqian Li](#)  
**Cc:** [Sydnor, Cara Y NAO](#); [Conner, Susan L. NAO](#); [Malbon, Norman T NAO](#); [Hudgins, Mark H NAO](#); [Bryant, Mark E NAO](#)  
**Subject:** WOIA, Project Plans (includes E&S Control Plan), Map and Image for Stone Marker Removal Project (UNCLASSIFIED)  
**Date:** Tuesday, June 12, 2012 8:35:00 AM  
**Attachments:** [ANC\\_MARKER\\_REMOVAL.PDF](#)  
[ANC\\_stonemarker\\_location\\_map.pdf](#)  
[ANC\\_stonemarker\\_image.pdf](#)  
[waterqualityimpact\\_assessment\\_ANCmarker\\_removal.pdf](#)

---

Classification: UNCLASSIFIED  
Caveats: NONE

Hi Jason and Qianqian,

Please see attached for various files pertinent to the Stone Marker Removal Project at ANC. I hope this meets your requirements and allows us to move forward with the project. Please let me know if you need anything else or have any questions or concerns.

Thanks,

Marty

Marty Underwood  
Biologist  
USACE Norfolk District  
Water Resources Division  
(757) 201-7766 Desk  
(757) 201-7646 FAX

Classification: UNCLASSIFIED  
Caveats: NONE

**From:** [Qianqian Li](#)  
**To:** [Underwood, Martin K. NAO](#); [Jason Papacosma](#)  
**Cc:** [Sydnor, Cara Y NAO](#); [Conner, Susan L. NAO](#); [Malbon, Norman T NAO](#); [Hudgins, Mark H NAO](#); [Bryant, Mark E NAO](#)  
**Subject:** RE: WQIA, Project Plans (includes E&S Control Plan), Map and Image for Stone Marker Removal Project (UNCLASSIFIED)  
**Date:** Tuesday, June 19, 2012 10:07:26 AM  
**Attachments:** [RLD LETTER.doc](#)  
[LAND DISTURBANCE APPLICATION.doc](#)

---

Marty,

Jason and I looked over your plan, it look ok to us. Please fill out the attached forms and submit them with the plan (4 copies) to 2100 Clarendon Blvd, suite 800, Arlington VA 22201 to apply a Land Disturbance Permit.

Let me know if you have any question.

Qianqian Li, P.E.

ESC Program Administrator

Arlington County

Department of Environmental Services

Development Services Bureau

2100 Clarendon Blvd., Suite 800

Arlington, VA 22201

Tel: 703.228.0129

Fax: 703.228.3967

-----Original Message-----

From: Underwood, Martin K. NAO [<mailto:Martin.K.Underwood@usace.army.mil>]

Sent: Tuesday, June 12, 2012 8:36 AM

To: Jason Papacosma; Qianqian Li

Cc: Sydnor, Cara Y NAO; Conner, Susan L. NAO; Malbon, Norman T NAO; Hudgins, Mark H NAO; Bryant, Mark E NAO

Subject: WQIA, Project Plans (includes E&S Control Plan), Map and Image for Stone Marker Removal Project (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Hi Jason and Qianqian,

Please see attached for various files pertinent to the Stone Marker Removal Project at ANC. I hope this meets your requirements and allows us to move forward with the project. Please let me know if you need anything else or have any questions or concerns.

Thanks,

Marty

Marty Underwood  
Biologist  
USACE Norfolk District  
Water Resources Division  
(757) 201-7766 Desk  
(757) 201-7646 FAX

Classification: UNCLASSIFIED  
Caveats: NONE

**From:** [Underwood, Martin K. NAO](#)  
**To:** [Underwood, Martin K. NAO](#)  
**Subject:** FW: ESSLog# 32982\_Arlington National Cemetery Marker Removal/Stream Restoration (UNCLASSIFIED)  
**Date:** Tuesday, June 26, 2012 7:03:03 AM

---

Classification: UNCLASSIFIED  
Caveats: NONE

-----Original Message-----

From: Ewing, Amy (DGIF) [<mailto:Amy.Ewing@dgif.virginia.gov>]  
Sent: Monday, June 25, 2012 4:01 PM  
To: Conner, Susan L. NAO  
Cc: nhreview (DCR); Cason, Gladys (DGIF); Bugas, Paul (DGIF)  
Subject: ESSLog# 32982\_Arlington National Cemetery Marker Removal/Stream Restoration

We have reviewed the subject project that proposes to perform stream restoration activities on a stream located at Arlington National Cemetery.

State Threatened bald eagles have been documented from the project area. This project site falls outside the management zone(s) for the nest(s) we currently document. Therefore, we do not anticipate this project to result in adverse impacts upon the eagles using this (these) nest(s).

The Potomac River has been designated an Anadromous Fish Use Area. If the stream proposed for instream work is a tributary to the Potomac River, we recommend that all instream work adhere to a time of year restriction from February 15 through June 30 of any year. We recommend conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time, stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend coordination with VDCR-DNH regarding the protection of these resources.

Thanks, Amy

Amy Ewing

Environmental Services Biologist

VA Dept. of Game and Inland Fisheries

4010 W. Broad Street

Richmond, VA 23230

804-367-2211

amy.ewing@dgif.virginia.gov <<mailto:amy.ewing@dgif.virginia.gov>>

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NORFOLK DISTRICT CORPS OF ENGINEERS  
FORT NORFOLK 803 FRONT STREET  
NORFOLK, VIRGINIA 23510-1096

June 5, 2012

Planning and Policy Branch

Mr. Marc Holma  
Department of Historic Resources  
Office of Review and Compliance  
2801 Kensington Avenue  
Richmond, VA 23221

Dear Mr. Holma,

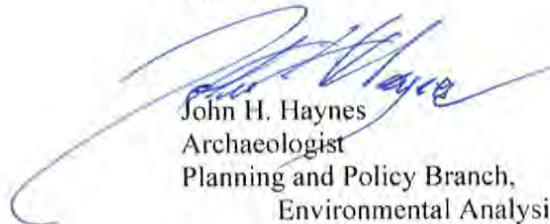
Please find enclosed a brief consultation report discussing the effects of the Marker Removal, Section 29 Arlington National Cemetery (DHR file # 2012-0390) on historic resources, as well as a paper copy of an earlier reconnaissance report related to this project which was submitted electronically.

The earlier report, "Reconnaissance of Marker Drains and Footbridges in Section 29 of Arlington National Cemetery/Arlington House," recommended that landscape features constructed of grave markers in the stream drainage of Section 29 of Arlington National Cemetery and eastern areas of the National Park Service Arlington House property were not National Register of Historic Places eligible, nor contributing to either the Arlington National Cemetery historic district, or to Arlington House.

The new report, "Additional Section 106 Consultation for Marker Removal (Stream Restoration) Section 29, Arlington National Cemetery/Arlington House, the Robert E. Lee Memorial (DHR file# 2012-0390)" supplies further details concerning the proposed undertaking, and the potential effects of the undertaking on archaeological resources. It recommends that the proposed undertaking would result in no adverse effects to historic properties.

Copies of this letter and the enclosures have been furnished to Daniel Delahaye, Army National Cemeteries Program and Mathew Virta, National Park Service. If you should have any questions do not hesitate to email me at [John.H.Haynes@usace.army.mil](mailto:John.H.Haynes@usace.army.mil) or call at (757) 201-7008.

Sincerely,



John H. Haynes  
Archaeologist  
Planning and Policy Branch,  
Environmental Analysis Section

Enclosures



# COMMONWEALTH of VIRGINIA

## Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Douglas W. Domenech  
*Secretary of Natural Resources*

Kathleen S. Kilpatrick  
*Director*

Tel: (804) 367-2323  
Fax: (804) 367-2391  
TDD: (804) 367-2386  
[www.dhr.virginia.gov](http://www.dhr.virginia.gov)

12 June 2012

Colonel Victoria M. Bruzese  
Department of the Army  
Arlington National Cemetery  
Arlington, Virginia 22211-5003

Re: Removal of markers used as stream bank stabilization at Arlington National Cemetery  
Arlington County, Virginia  
DHR File # 2012-0390

Dear Colonel Bruzese:

The Department of Historic Resources (DHR) has received for our review and comment the above referenced project. It is our understanding that Arlington National Cemetery (ANC) proposes to remove markers that were used for stream bank stabilization in Section 29. We concur with ANC that the markers are not eligible for listing in the National Register of Historic Places (NRHP) and that their removal will have No Adverse Effect on historic properties listed in or eligible for the NRHP.

If you have any questions about our comments, please call me at (804) 482-6090.

Sincerely,

Marc Holma, Architectural Historian  
Office of Review and Compliance

C: Mr. John Haynes, Army Corps of Engineers  
Superintendent Matthew Virta, George Washington Memorial Parkway, NPS

Administrative Services  
10 Courthouse Ave.  
Petersburg, VA 23803  
Tel: (804) 862-6416  
Fax: (804) 862-6196

Capital Region Office  
2801 Kensington Office  
Richmond, VA 23221  
Tel: (804) 367-2323  
Fax: (804) 367-2391

Tidewater Region Office  
14415 Old Courthouse Way 2<sup>nd</sup>  
Floor  
Newport News, VA 23608  
Tel: (757) 886-2807  
Fax: (757) 886-2808

Western Region Office  
962 Kime Lane  
Salem, VA 24153  
Tel: (540) 387-5428  
Fax: (540) 387-5446

Northern Region Office  
5357 Main Street  
PO Box 519  
Stephens City, VA 22655  
Tel: (540) 868-7031  
Fax: (540) 868-7033

**From:** [Holma, Marc \(DHR\)](#)  
**To:** [Haynes, John H. NAO](#)  
**Subject:** NR eligibility of headstones along streambed (2012-0390)  
**Date:** Tuesday, May 15, 2012 11:24:39 AM

---

John,

In response to your earlier emails, DHR does not believe these headstones to be eligible for the National Register of Historic Places.

Sincerely,

Marc Holma

**From:** Haynes, John H. NAO  
**To:** "[Holma, Marc \(DHR\)](#)"; [Matthew Virta \(matthew\\_virta@nps.gov\)](#); [Brandon Bies \(brandon\\_bies@nps.gov\)](#)  
**Cc:** [Sydnor, Cara Y NAO](#); [Conner, Susan L. NAO](#); [Delahaye, Daniel B Mr CIV USA ANC/POG OSA](#); [Smith, Adam ERDC-CERL-IL](#); [Tooker, Megan W ERDC-CERL-IL](#)  
**Subject:** Reconnaissance Report on Arlington National Cemetery Section 29 Stream Restoration Project DHR #2012-0390 (UNCLASSIFIED)  
**Date:** Friday, April 06, 2012 12:04:00 PM

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Classification: UNCLASSIFIED  
Caveats: NONE

The report documents drainage features and footbridges constructed of tombstones in Arlington National Cemetery Section 29, which planned to be removed as a part of the stream restoration project, and recommends that they are not contributing to the Arlington National Cemetery historic district due to a lack of architectural integrity.

The file is 4MB and has been sent to Mr. Holma via the Virginia State Government file share site. If others receiving this email want a copy of the report contact me and indicate a means of receiving the file (i.e., can accept through email, ftp site, or mail disc).

V/r

John H. Haynes  
Archaeologist  
US Army Corps of Engineers,  
Norfolk District (NAO)  
803 Front Street  
Norfolk, VA 23510  
757-201-7008  
fax 757-201-7646  
[john.h.haynes@usace.army.mil](mailto:john.h.haynes@usace.army.mil)

Classification: UNCLASSIFIED  
Caveats: NONE

**From:** Haynes, John H. NAO  
**To:** [Matthew Virta \(matthew\\_virta@nps.gov\)](mailto:matthew_virta@nps.gov); [Brandon Bies \(brandon\\_bies@nps.gov\)](mailto:brandon_bies@nps.gov)  
**Subject:** FW: Determination of eligibility, prehistoric components Loci 1, 2, and 3 of 44AR0032; DHR file # 2008-1022 (UNCLASSIFIED)  
**Date:** Friday, April 06, 2012 7:52:00 AM  
**Attachments:** [Archaeological sections of Millis et al 1998.pdf](#)

---

Classification: UNCLASSIFIED  
Caveats: NONE

Matt, Brandon,

My apologies for not copying NPS on this email at the time it was sent, but it does allow me to add an update.

The site identified on the south end of the Ft. Myer picnic area has been assigned DHR site #44AR0046, and we are in the process of contracting for a Phase II investigation at the site. I recently found a high resolution 1949 aerial which shows a small building at exact location of the architectural artifacts recovered (generally dating to the first half of the 20th century or slightly earlier); the other component of the site was a layer of fire-cracked rock and dark soil 13 cm below soil surface, beneath a thin layer of light colored loamy sand. No artifacts were in association with this feature.

The metal detector survey conducted 27-29 March did not identify any new sites. An isolated wrought nail north of the Maintenance Yard north of Loci 3 of 44AR0032 was the only clearly pre-20th century artifact identified. Surface inspection at Loci 1 of 44AR0032 reinforced my assessment of that site, discussed below. There is substantial surface exposure at the south end of the site, the area of highest density reported in Mills et al 1998. Artifacts visible on the surface were few, and consisted of shatter and cobble/core fragments, and no flakes or bifaces. I did not take a collection. The large numbers of naturally occurring stones exposed in that area indicates soil loss.

I am attaching the pertinent sections of the 1998 report. We have the entire report in pdf format, but it is 33mb. I can burn a copy to disk and mail it to you if you would like.

Regards,

John

John H. Haynes  
Archaeologist  
US Army Corps of Engineers,  
Norfolk District (NAO)  
803 Front Street  
Norfolk, VA 23510  
757-201-7008  
fax 757-201-7646  
[john.h.haynes@usace.army.mil](mailto:john.h.haynes@usace.army.mil)

-----Original Message-----

From: Haynes, John H. NAO  
Sent: Thursday, March 22, 2012 2:31 PM  
To: [marc.holma@dhr.virginia.gov](mailto:marc.holma@dhr.virginia.gov); [brad.mcdonald@dhr.virginia.gov](mailto:brad.mcdonald@dhr.virginia.gov); [Ethel.Eaton@dhr.virginia.gov](mailto:Ethel.Eaton@dhr.virginia.gov)  
Cc: Conner, Susan L. NAO; Neitzke, Laurie D. NAO; Hegge, Greg E NAO; Delahaye, Daniel B Mr CIV USA ANC/POG OSA  
Subject: Determination of eligibility, prehistoric components Loci 1, 2, and 3 of 44AR0032; DHR file #

2008-1022 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Marc, Ethel, Brad,

As I'd brought up briefly we are working on identification of properties for the Arlington National Cemetery Millennium project. Prior DHR comment (letter from Marc Holma to John Metzler dated 29 July 2009) discussed potentially contributing landscape elements, and Phase II investigation of a site at the Ft. Myer Picnic area, later recorded as 44AR0043, tested at the Phase II level and determined ineligible (letter from Marc Holma to John Metzler dated 1 April 2010).

In reviewing the past work on the area, I found that no Phase I survey had been done on the south half of the Ft. Myer picnic area. The north half had been surveyed under Jay Custer in 1991, and a site identified later identified as 44AR0043. I conducted Phase I survey last week on the south part of the Ft. Myer picnic area and identified a site with potential NRHP eligibility, along with supplemental metal detector survey. I intend to undertake further metal detector survey in other portions of the Millennium Project area next week. The results of the Phase I survey, supplemental metal detector survey, and historical research focused on the Civil War era will be included in a forthcoming report which shall discuss their findings along with other cultural resources which might be affected by the Millennium Project.

As we expect to be contracting for a Phase II excavation at the newly identified site (temporary designation FMS1, DSS form and mapping submitted 3/21) and perhaps others pending further fieldwork, we wish to get a determination on Loci 1, 2, and 3 of 44AR0032 which we recommend as no further work. If DHR believes further work is warranted at these sites, it would be helpful know this before scoping the Phase II work at FMS1, so that other work could be included.

Shovel tests pits and 1x1 meter units excavated at 44AR0032 Loci 1, 2, and 3 yielded no evidence of stratigraphy either cultural or natural, and no features. There is a low diversity of artifacts at these sites, and no diagnostic artifacts were recovered. There is a moderate density of artifacts, which for this type of site is relatively low. There are literally thousands of sites of this type, often referred to as 'lithic scatters,' recorded in northern Virginia. The evidence at these locations suggests sporadic use of lithic material occurring at these locations, quartz and quartzite cobbles, for the production of expedient tools. This activity was most likely embedded in hunting and gathering activities, and travel to the locations was probably not solely for lithic extraction.

There is no basis for the boundary of 44AR0032 in archaeological data. The results of the Phase I and II survey conducted in 1997-1998 (Millis et al. 1998) identified six loci within the tract owned by the National Park Service (NPS). NPS land tenure, not historic or archaeological data defines the boundaries of 44AR0032. Five of the six loci are contiguous, and 44AR0032 should be considered four sites, three prehistoric and one multicomponent. Even in the report finds outside the loci are referred to as non-site finds, even though they came from within the boundary of 44AR0032. Here is a summary of our recommendations regarding the sites included in 44AR0032.

Outside of Millennium APE

44AR0032A

Locus 4 – Artifacts, cultural stratigraphy, and features 19th-20th century associated with Arlington House: eligible, overlaps Locus 5

Locus 5 – Dispersed distribution of prehistoric artifacts, 1 steatite sherd (Late Archaic-Middle Woodland) as diagnostic, no features or stratigraphy: ineligible, however coterminous with Locus 4

Locus 6 – Concentration of prehistoric artifacts, focused quarry area, feature identified: eligible, borders Locus 4/5

Within or bordering the Millennium APE

44AR0032B

Locus 1 – Lithic scatter, no stratigraphy, no diagnostic artifacts, no features: ineligible, separated by a

deep stream cut from Locus 2, and distance from other Loci

44AR0032C

Locus 2 – Lithic scatter, no stratigraphy, no diagnostic artifacts, no features: ineligible

44AR0032D

Locus 3 – Lithic scatter, no stratigraphy, no diagnostic artifacts, no features, eroded landform: ineligible

For your conveniences and for my marginal notes, I am attaching archaeological sections of the report "Cultural Resource Investigations at Section 29 at Arlington House, The Robert E. Lee Memorial, Arlington County, Virginia" Heather Millis, Jeff Holland, Todd Cleveland, and Bill Nethery; Garrow and Associates, Inc.; Chapel Hill, North Carolina; 1998.

Regards,

John

John H. Haynes  
Archaeologist  
US Army Corps of Engineers,  
Norfolk District (NAO)  
803 Front Street  
Norfolk, VA 23510  
757-201-7008  
fax 757-201-7646  
john.h.haynes@usace.army.mil

Classification: UNCLASSIFIED  
Caveats: NONE

Classification: UNCLASSIFIED  
Caveats: NONE



# COMMONWEALTH of VIRGINIA

## Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

James S. Gilmore, III  
Governor

John Paul Woodley, Jr.  
Secretary of Natural Resources

H. Alexander Wise, Jr.  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
TDD: (804) 367-2386

September 30, 1999

Audrey F. Calhoun, Superintendent  
George Washington Memorial Parkway  
National Park Service  
c/o Turkey Run Park  
Maclean, Virginia 22101

RE: Draft Environmental Assessment  
Proposed Transfer of Land: Section 29 at Arlington House, The Robert E. Lee Memorial  
Arlington County, Virginia  
DHR File No. 95-1353-F

Dear Ms. Calhoun:

Thank you for requesting our comments on the report entitled *Cultural Investigations at Section 29, Arlington House, the Robert E. Lee Memorial, Arlington County, Virginia*. The report was prepared in September 1998 by Heather Mills, *et al.* of the firm of Garrow & Associates, Inc.

I am pleased to inform you that the report successfully meets the federal standards entitled *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-77742, September 29, 1983) and our Department's *Guidelines for Preparing Identification and Evaluation Reports for Submission Pursuant to Sections 106 and 110, National Historic Preservation Act, Environmental Impact Reports of State Agencies, Virginia Appropriations Act, 1992 Session Amendments* (June 1992). It was a pleasure to read such a thorough and exceptionally well-written document.

### Landscape, Viewshed, and Forestry Issues

The historical research, Cultural Landscape Analysis, Viewshed Analysis, and Forestry Study, appear to be based on sound methodology. The results of the research, analysis, and study provide firm support for the Conclusions and Recommendations for preservation and/or mitigation of portions of the Interment and Preservation Zones of Section 29. As such, we concur with the report's recommendations as presented in Section VI of the report (and graphically in Figure 111).

Petersburg Office  
10 Courthouse Avenue  
Petersburg, VA 23803  
Tel: (804) 863-1620  
Fax: (804) 863-1627

Portsmouth Office  
612 Court Street, 3rd Floor  
Portsmouth, VA 23704  
Tel: (757) 396-6707  
Fax: (757) 396-6712

Roanoke Office  
1030 Penmar Avenue, SE  
Roanoke, VA 24013  
Tel: (540) 857-7585  
Fax: (540) 857-7588

Winchester Office  
107 N. Kent Street, Suite 203  
Winchester, VA 22601  
Tel: (540) 722-3427  
Fax: (540) 722-7535

### **Archeological Investigations.**

The archeological subcommittee of our Department's National Register Team met to consider the significance of Site 44AR32, the Arlington House Ravine Site. Based upon the information provided in the report, the Committee concurs that the historic component of 44AR32 is eligible under criteria B and D and contributes to the significance of Arlington House. However, the report provides insufficient information for us to concur that the prehistoric component is eligible. Prehistoric material is found across much of the project area, but is particularly concentrated in zone 1 and 6. We recommend further testing of Locus 1. It would be helpful to have the results of the additional testing presented in the form of artifact distribution maps to delineate specific activity areas. Apparently an interval of 15 meters was used in STP testing. As stated on page 56 of the report, this locus is characterized by numerous small activity areas that may not all be completely identified by a 15-meter-interval testing strategy. Further testing will be needed to establish this component's significance conclusively.

As we have previously stated, it appears that all alternatives with the exception of Alternative 4, the No Action alternative, will require mitigation of significant archeological resources. As you know, the Advisory Council on Historic Preservation has recently published its revised regulations in the Federal Register at 64 F.R. 27043-27084. The criteria of effect have been revised and the recovery of archaeological data is defined as an adverse effect, even if conducted in accordance with the Secretary's standards (800.5(a)(2)(iii)).

We are willing to participate in further discussions on the alternatives presented in the Environmental Impact Statement. If you have any questions concerning our comments, please do not hesitate to contact Ethel R. Eaton of our resource review staff at (804) 367-2323, ext. 112; fax (804) 367-2924; e-mail [eeaton@dhr.state.va.us](mailto:eeaton@dhr.state.va.us).

Sincerely,



Cara H. Metz, Director  
Division of Project Review

- c. Matthew R. Virta, Historian/Cultural Resource Manager  
Martha Catlin, ACHP

**Reconnaissance of Headstone Drains and  
Footbridges in Section 29 of Arlington  
National Cemetery/Arlington House  
(DHR file #2012-0390)**

**Appendix B**



## **Reconnaissance of Headstone Drains and Footbridges in Section 29 of Arlington National Cemetery/Arlington House (DHR file #2012-0390)**

John H. Haynes, Jr. RPA  
U.S. Army Corps of Engineers, Norfolk District  
16 August 2012

(This document is an updated version of one similarly titled dated 6 April 2012)

### **Abstract**

Drainage features and footbridges partially constructed of headstones are proposed to be removed as a part of a stream restoration project at Arlington National Cemetery. These features are evaluated as not contributing to the Arlington National Cemetery historic landscape; and the project is evaluated as having no adverse effect to historic properties.

### **Background**

The Thursday, June 17, 2010 edition of the Washington Post carried a story (Davenport 2010a) entitled “Arlington National Cemetery headstones found lining stream bed”. This was news to the public, already incensed by revelations of ill kept records and unmarked graves at the cemetery, which seemed to be callous and sacrilegious. Reemphasis of this story came the next day when an inscribed headstone mentioned in the article was identified by a reader as that of his father (Davenport 2010b). This like many other headstones had been discarded when a new headstone was inscribed with the name of the man’s wife when she deceased and was co-buried with his remains. Stones, once inscribed with the names of the honored dead become sacrosanct in the view of many people, if when replaced by a new headstone they are simply slabs of stone to others.

### **Proposed Undertaking - Stream Restoration**

Immediately following the publication of this story, Arlington National Cemetery pledged to remove the headstones from the stream bed and stabilize the watercourse with profane materials. Delays ensued resulting from a transition in the organization of Arlington National Cemetery management, as well as transfer of service areas for installations in northern Virginia from the Baltimore District to the Norfolk District of the U.S. Army Corps of Engineers. Presently, removal of the existing configurations of culverts lined by headstones is being planned, as designs for erosion control are developed to stabilize the drainage.

### **Environmental Context**

The headstone-lined drains are situated within Section 29 of Arlington National Cemetery (Figures 1 and 2), which was transferred to the National Park Service in 1974 as part of the

Arlington House – Robert E. Lee Memorial. It is a tract of approximately 25 acres covering a rugged network of deep ravines west of Arlington House, between it and Fort Myer. Probably due to the rugged nature of the terrain, this area was never developed as a burial area, and is heavily wooded in mature oak-hickory forest. The upper Coastal Plain terrain of northern Virginia consists of steep hills deeply incised by streams which cut through unconsolidated Mesozoic and Tertiary sedimentary formations like the Potomac Formation which comprises the geology of Section 29. Given the vulnerability of the landforms in that area to erode at a rapid rate, federal land managing personnel were at some point prompted to install erosion control measures to preserve the built environment. Of several intermittent branches of the primary stream running through Section 29, only the branch descending from a point just below ‘Lodge #1’ of Arlington National Cemetery has headstones lining its course.

### **Field Methods**

Photographs and observations of the Section 29 Footbridges and Headstone Drain were made on 12 March and 28 March 2012 while en route to archaeological reconnaissance in the Millennium Project area. Measurements of the Headstone Drain were made by pacing in this field examination. The locations of the Headstone Drain and Section 29 Footbridges shown in Figure 3 are based on landforms observed in the field matched to the LiDar contours. Other dimensions reported for these landscape features are estimates based on observation; they were not directly measured by instrument.

A more thorough examination of the entire stream system in the Millennium Area (ANC Section 29) was carried out by Army Corps of Engineers hydrologists 16-17 April 2012. Their objective was to gain a better estimate of the total number of headstones installed in the drainages there, and develop potential erosion control measures to be installed after removal of the headstones. Their results are included in Appendix B of this document.

After review of the draft Environmental Assessment for the project the National Park Service, although acknowledging that the headstone features were not eligible as or contributing to a National Register of Historic Places eligible property, requested additional documentation of the headstone drain feature, described below. On 26 July 2012 Major Kevin W. Siegrist, U.S. Army Corps of Engineers, further documented the headstone drain (or culvert) feature (000-0042-0003). His results are included in Appendix C of this document.

### **Property Descriptions**

#### **Section 29 Footbridge North (000-0042-0004)**

The Arlington National Cemetery Section 29 North Footbridge is about 6 feet wide and 10 feet long, constructed of white marble slabs, 4 inches thick and 3 to 4 feet long. These are most

likely recycled headstones, replaced by new headstones when damaged, weathered, or more commonly with an inscription is changed to add a co-buried spouse. Widths of standard government issued headstones at Arlington National Cemetery have been of 10, 12, and 13 inch widths beginning in 1873, 1903, and 1922 respectively. Abutments of marble slabs parallel the stream bed, supporting a span of about 6 feet. The abutments are about four feet high. The marble slab structure is crowned by courses of red brick laid in English bond, which has collapsed on the downstream side, but remains as a curb on the upstream side. The site is heavily overgrown with underbrush. Many detailed maps were drawn of Arlington National Cemetery from its inception in 1864, which show footpaths. The footpath associated with this bridge is first shown on a 1935 map. It probably fell into disuse and disrepair by 1974 when Section 29 was ceded to the National Park Service. A portion of Section 29 has since been retroceded to Arlington National Cemetery for expansion of burial areas.

### **Section 29 Footbridge South (000-0042-0005)**

The Arlington National Cemetery Section 29 South Footbridge South is about 6 feet wide and 10 feet long, constructed of white marble slabs, 4 inches thick and 3 to 4 feet long. These are most likely recycled headstones, replaced by new headstones when damaged, weathered, or more commonly with an inscription is changed to add a co-buried spouse. Widths of standard government issued headstones at Arlington National Cemetery have been of 10, 12, and 13 inch widths beginning in 1873, 1903, and 1922 respectively. The widths of the marble slabs used Abutments of marble slabs parallel the stream bed, supporting a span of about 3 feet. The abutments are about four feet high. The marble slab structure is crowned by courses of red brick laid in English bond, forming a curb. This has collapsed on the upstream side where the streambed has completely filled with alluvium, and has buried the bridge on that side and on top, with the exception of the brick curb on the downstream side. Many detailed maps were drawn of Arlington National Cemetery from its inception in 1863, which show footpaths. The footpath associated with this bridge is first shown on a 1935 map (Figure 12). It probably fell into disuse and disrepair after 1974 when Section 29 was ceded to the National Park Service. A portion of Section 29 has since been retroceded to Arlington National Cemetery for expansion of burial areas.

### **Headstone Drain (000-0042-0003)**

The headstone-lined drains currently visible consist of two parts (Figure 3), and are recorded in the Department of Historic Resources Data Sharing System as ‘Headstone Drain, Arlington National Cemetery’ (000-0042-0003). The upper drain extends 150 feet from a sharp bend in the drain which begins 160 feet below the northwest corner of the parking lot between Lodge #1 and the Old Administration Building. Further investigations by hydrologists found additional headstones above the bend, extending to the top of the gully in the “Middle Branch” as they termed it. At its lower end it has been buried by an accumulation of alluvium. This structure has a square “U” configuration (Figures 4-7). Headstones mortared with fine pea-gravel grouted

concrete form the sides, while slabs of concrete of a similar composition form the bottom. The structure is substantially decayed, with the concrete slabs forming the bottom of the culvert uneven, and some of the headstones from the sides dislocated. The sides are about 1.5 to 2 feet high, and the bottom is about 4 feet wide. No inscriptions are visible on the headstones, either the inscribed sides are turned to the sides of the culvert, or they are blank.

The lower drain appears downstream of a foot bridge 205 feet down hill from the point where the above ground portion of the upper drain is buried. This section extends only 50 feet downstream of the brick and marble slab footbridge. In this area the configuration is different, with unmortared headstones lining both the sides and bottom of the drain, and two stones above the foot bridge on the ground surface (Figures 8-10). This is the area where three headstones with inscriptions were observed. The inscriptions are as follows:

- 1) MARJORIE JEAN/JUN 7 1920/MAY 16 1984/WIFE OF/COL/G E FORSYTH (Figure 11)
- 2) DONA(LD?)/HUTCHINS/MAJ. GEN/ USAF (stone broken off)
- 3) 10253 (stone above foot bridge)

Standard government-issue headstones at Arlington National Cemetery were produced in three widths in different periods, while remaining a standard 4 inches thick. From 1870's until 1903 they were 10 inches wide, 12 inches wide between 1903 and 1922, and 13 inches wide from 1922 to the present (USACE Baltimore District 2011). Only a few randomly selected stones were measured in this reconnaissance. While the majority of the stones observed were 13 inches wide, a few were 10 inches wide, and others may be of the 12 inch width.

### **Other Headstone Drainage Features in Section 29**

Cleveland (1997) reports three other drainage features further downstream of the Section 29 Footbridge and lower Headstone Drain. These are labeled "Brick Bulkhead with Tombstone Embankment," "Tombstone Lined Streambed," and "Tombstone Riprap" in Figure 14. The latter two seem to have been the areas photographed in the Washington Post stories. These were not investigated during the field reconnaissance reported here; however, based on the photograph in Millis et al (1998:121) the "Brick Bulkhead with Tombstone Embankment" appears to be in very poor condition (Figure 15). The bulkhead is mostly buried and the headstones are partially dislodged from the embankment. It is unlikely that this condition has been improved since that time, and is probably much worse. The other downstream headstone drainage features, photos of which may be seen on the Washington Post web site (<http://www.washingtonpost.com/wp-dyn/content/gallery/2010/06/17/GA2010061703018.html?sid=ST2010092006418>).

Investigations by Army Corps of Engineers hydrologists provided further information on the number and location of headstones in the drainage; their results are in Appendix B of this document.

### **Chronology**

Neither the Washington Post stories nor questioning of Arlington National Cemetery or National Park Service personnel responsible for land management in this area have revealed when headstones were first placed in the streambed. No National Park Service or Arlington National Cemetery records of this construction are known at this time, although the cultural resources survey of Section 29 undertaken in the mid-1990's documents the headstone-lined culverts and marble-slab and brick foot bridges (Millis et al. 1998). One intact stone (#1, above) with a legible date was observed during the recent field reconnaissance (March 2012). This bears a death date of 1984, and was therefore replaced sometime after (it bears the name of the wife of a service member who apparently deceased sometime after 1984). As an erosion control measure, the headstone-lined cement culvert uphill would have the most relevance to Lodge #1, which was constructed in 1932. Judging from the weathering and decay of the materials in the upper drain the structure likely dates as early as the 1930's, if loose stones were added to the lower drain area as recently as the 1980's. The foot bridges, both in a state of ruin, seem to date to the same era. This is apparent from both the similar weathering and use of marble slabs, possibly 'recycled' headstones or blanks for headstones, used in their construction. The path the footbridges were associated with is shown on a 1935 map (Figure 15) and may have been in place at that time. It may be that the upper Headstone Drain was constructed at some point after the bridges were to prevent them from washing out.

### **Evaluation of Significance**

A previous cultural resource report and cultural landscape inventory of Section 29 (Millis et al. 1998, Cleveland 1997) identifies the headstone drainage features and foot bridges and not contributing to the historic landscape of Arlington House, as they are not associated with the primary period of significance for that property, the Custis-Lee residency (1802-1861). These reports did not consider the possible contribution of these landscape features to the historic landscape of Arlington National Cemetery.

Currently the Army National Cemeteries Program has employed the Corps of Engineers in developing a National Register of Historic Places nomination for Arlington National Cemetery. Architectural historians working on the project have identified all burial areas as contributing landscapes under Criterion A, and the areas west of what is now named Eisenhower Drive as contributing under Criterion C as well for being part of the landscape design dating to the late

19<sup>th</sup> century (Adam Smith and Megan Tooker, personal communication). Their list of contributing landscape features includes drainage features west of Eisenhower Drive where the landscape is considered eligible under Criterion C. Features are considered contributing under this criterion if they date to the period of significance, which has been defined as 1864-1930's.

This report recommends the headstone drainage features and brick/marble slab foot bridges as not contributing to the historic landscape of Arlington National Cemetery for the following reasons, developed in consultation with architectural historians Adam Smith and Megan Tooker currently working on an NRHP nomination for Arlington National Cemetery:

- Not contributing to the ANC historic landscape due to a lack of physical integrity
- These properties have not, nor are likely to yield information important to the study of history.

Therefore, the Arlington National Cemetery Section 29 Stream Restoration project would not cause adverse effects to historic properties.

## References

Cleveland, M. Todd

1997 Cultural Landscape Inventory, Arlington National Cemetery and Arlington House, the Robert E. Lee Memorial. Garrow & Associates, Inc., Atlanta, Georgia.

Davenport, Christian

2010a "Arlington National Cemetery headstones found lining stream bed," The Washington Post, 17 June 2010.

2010b Man recognizes discarded Arlington National Cemetery headstone as his father's," The Washington Post, 17 June 2010.

Millis, Heather, Jeff Holland, Todd Cleveland, and Bill Nethery

1998 Cultural Investigations at Section 29 at Arlington House, the Robert E. Lee Memorial, Arlington County, Virginia. Garrow & Associates, Inc., Chapel Hill, North Carolina.

U.S. Army Corps of Engineers

2011 (draft) Integrated Cultural Resource Management Plan, Arlington National Cemetery, Arlington, Virginia. U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland.



SOURCE: Arlington County Department of Environmental Services 2010; Arlington National Cemetery 2010

FIGURE 4:77: Map Showing Buildings and Structures

Figure 1 - Map of Arlington National Cemetery Showing Sections and Buildings

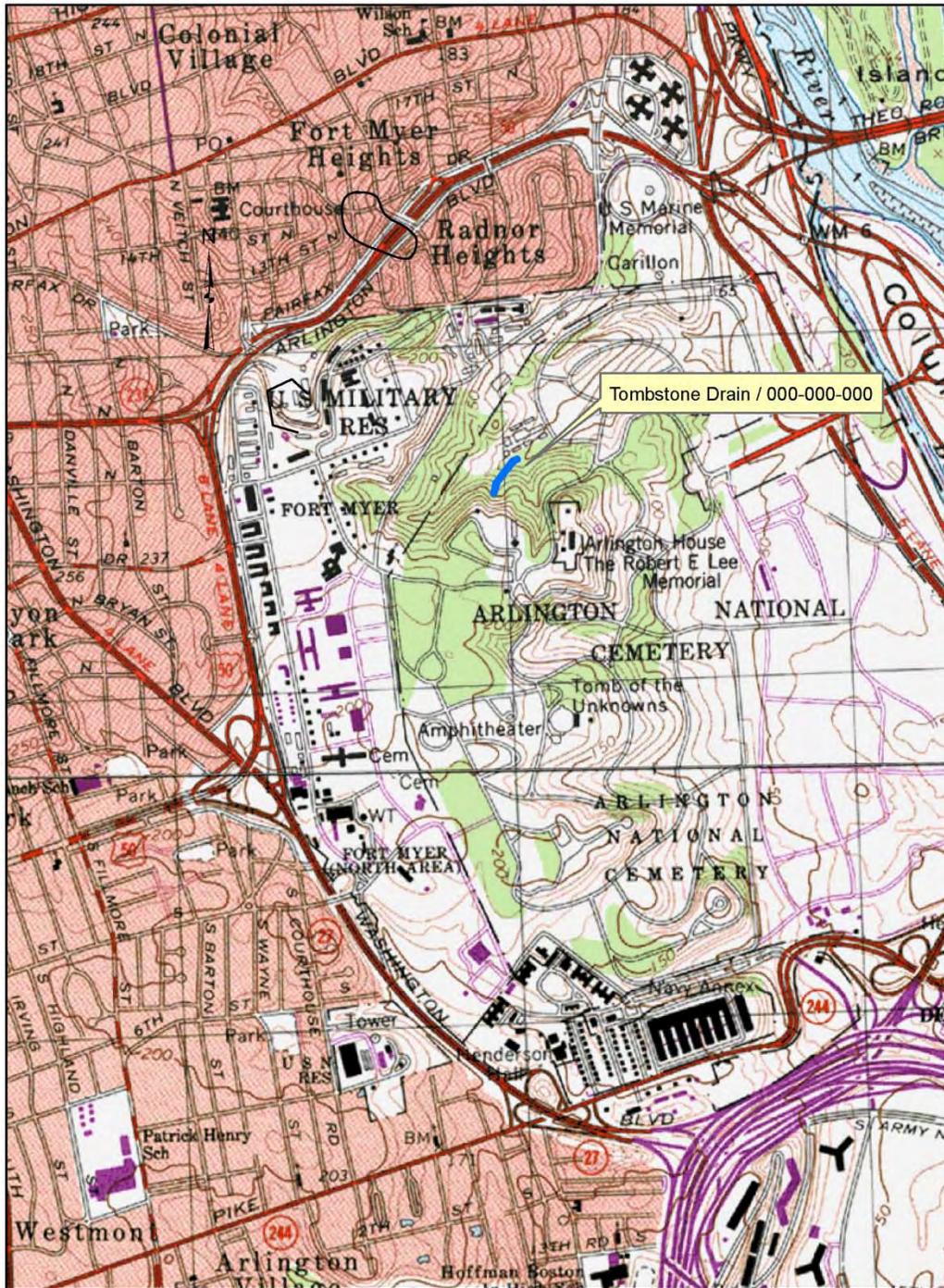


Figure 2 USGS Washington West Quadrangle Showing Location of the Headstone Drain

# ANC Stream Restoration: Position and Length of Tombstone Drain and Footbridges



Figure 3 Map of the Headstone Drain, Contour Interval 1 ft.



Figure 4 Upper Headstone Drain, Facing South

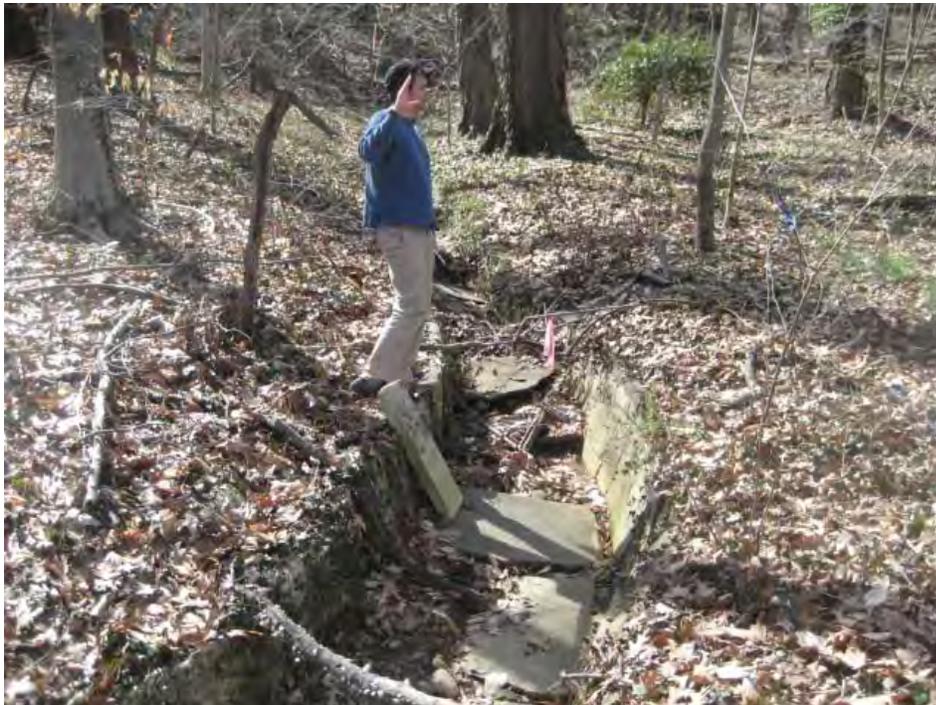


Figure 5 Upper Headstone Drain Facing South, Bend in Middle



Figure 6 Upper Headstone Drain, Detail



Figure 7 Upper Headstone Drain, Detail



Figure 8. Footbridge South and Lower Headstone Drain Facing North



Figure 9. Footbridge South and Lower Headstone Drain, Facing Southwest



Figure 10 Section 29 Footbridge North (Millis et al 1998: 119)

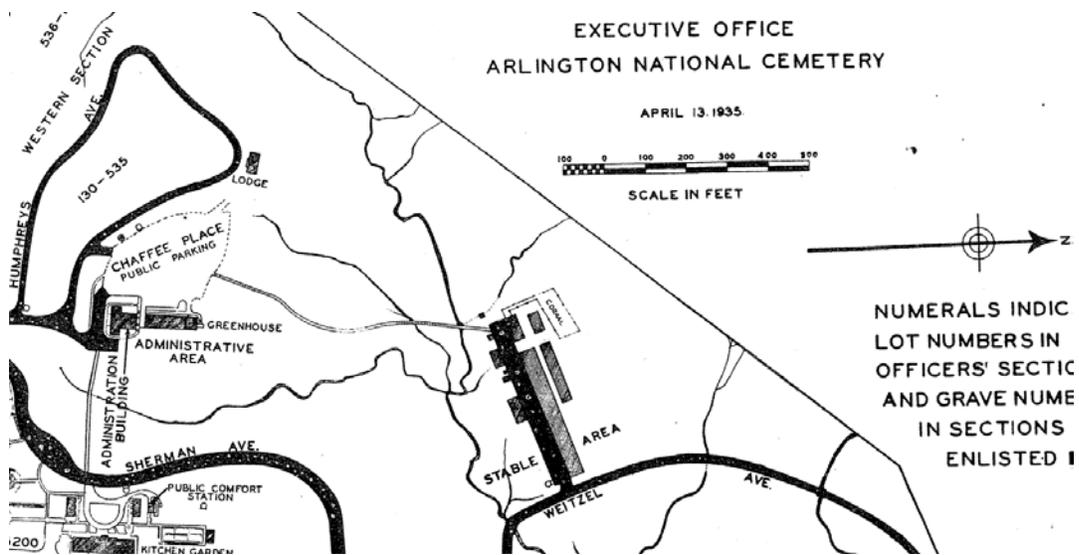


Figure 11 Detail from 1935 Map of Arlington Cemetery. The Section 29 Footbridges were associated with the path between Chaffee Place and the Stable Area.

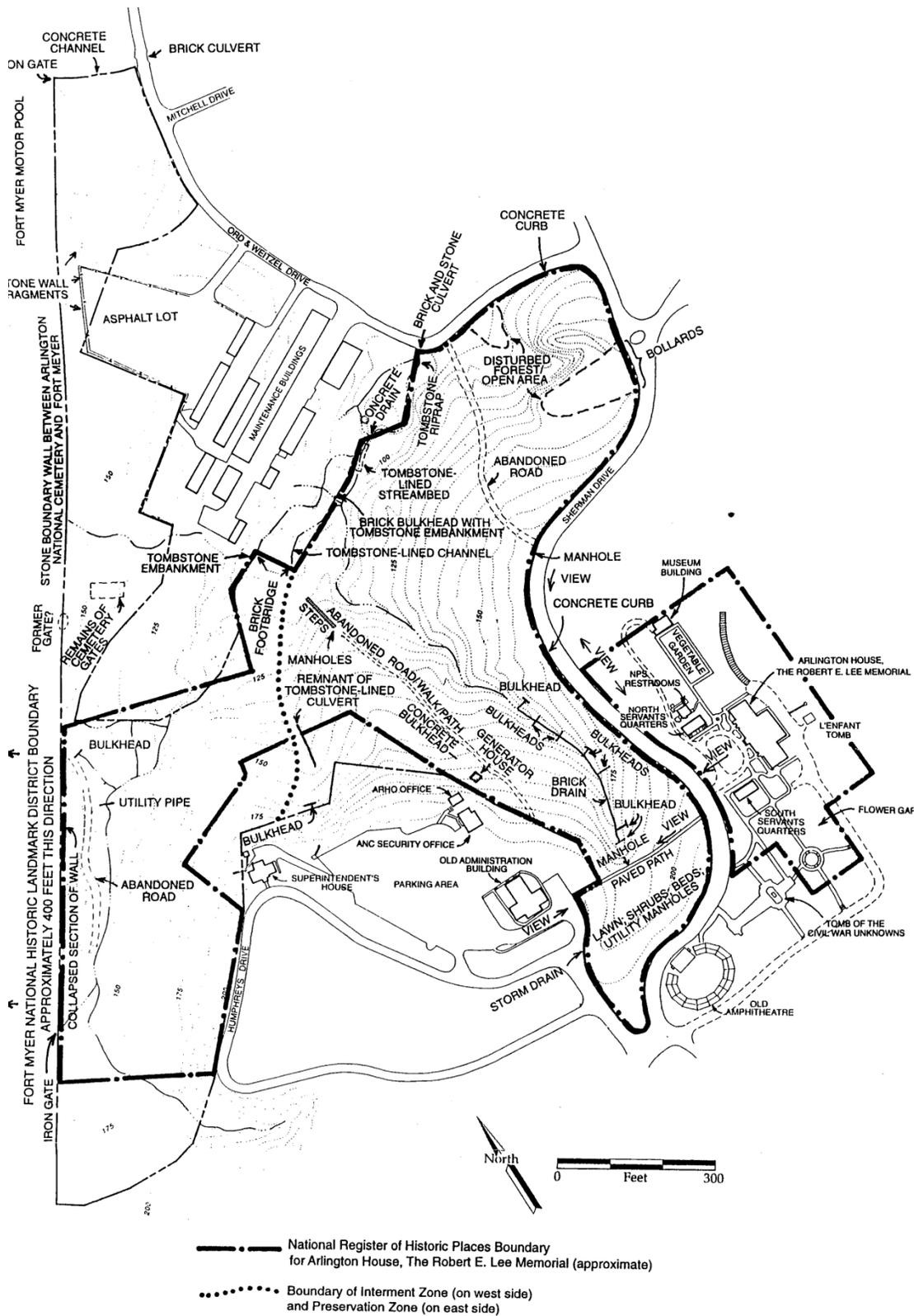


Figure 12 Section 29 Landscape Map (Cleveland 1997: 31)



**Figure 13 Brick Bulkhead with Headstone Embankment (Millis et al. 1998: 121)**