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June 10, 2011

Carolyn Cannella
U.S. Army Corps of Engineers
Walker Mountain Regulatory Field Office
P.O. Box 694
Wytheville, VA 24382

Subject: **Joint Permit Application No. 10-1256**
Responses to the Corps Request for Additional Information (RAI)
Virginia Electric and Power Company (Dominion)
North Anna Power Station - Proposed Unit 3
Louisa County, Virginia

Dear Ms. Cannella:

The purpose of this letter is to provide responses to your Request for Additional Information (RAI), which Dominion received in an email dated May 11, 2011 and which pertain to Dominion's Joint Permit Application (JPA) No. 10-1256 submitted on July 16, 2010 for construction impacts to waters of the United States, including wetlands, associated with proposed Unit 3 at the North Anna Power Station. The following responses are provided for each of the Corps' comments.

USACE Comment 1 – Separate correspondence containing comments on the draft SAV and wetland restoration plans will be sent. Please incorporate the recommended changes.

Dominion Response – Dominion received the U.S. Army Corps of Engineers' (USACE) comments concerning the draft wetland and submerged aquatic vegetation (SAV) restoration plans in an email dated May 11, 2011. Dominion has incorporated the changes recommended by the USACE into both the SAV and wetland restoration plans. The revised SAV restoration plan is provided as Attachment A and the revised wetland restoration plan is included as Attachment B.

USACE Comment 2 – Regarding the list of undeliverable public notices provided earlier this year, please complete a final check for any updates that may be available and provide the results of this follow-up action.

Dominion Response - Dominion began contacting the counties during the week of May 23, 2011 to inquire about the status of property ownership updates to the counties' respective databases. Updated information has already been received from King William, King and Queen, and Orange Counties, and Dominion is in the process of incorporating that information into the public notice list of adjacent property owners. Dominion is still waiting

significant updates since previous data collection efforts. Updates will be supplied to the USACE once Dominion has received information from all the counties within the project limits where proposed permit activities would occur.

In addition, Dominion is maintaining a separate address database which is updated in response to each address correction brought to our attention.

USACE Comment 3 – Provide a conceptual plan for a constructed measure to reduce velocity and to prevent possible introduction of contaminants into preservation stream reach HA-7.

Dominion Response - A conceptual plan to intercept surface water generated from the parking lot at the North Anna Nuclear Information Center (NANIC) prior to its flow into preservation stream reach HA-7 has been developed (Attachment C). This design will be capable of treating the first 0.5 inches of runoff per Virginia Department of Conservation and Recreation (VDCR) standards. The first 0.5 inches represents the "first flash" of stormwater containing the highest concentrations of stormwater contaminants. The proposed design will be a shallow, constructed depression that will be planted with deep rooted native plant and grass species and an interceptor trench. The design will capture runoff from the NANIC parking lot and divert the water into a rain garden where the water can slow down and slowly infiltrate into the ground. After installation of the proposed rain garden and interceptor trench, the stormwater will be of higher quality than the stormwater currently making its way into the channel.

USACE Comment 4 – Please describe the current oversight and management that occurs within the exclusion area surrounding the North Anna Power Station (NAPS) within which the preservation streams are located.

Dominion Response -The exclusion area is an area in which, under NRC regulations, the operator of the nuclear plant has the authority to determine all activities including the removal of personnel or property. At NAPS, the exclusion area boundary is the same as the NAPS site boundary. Dominion monitors station operations and other associated activities on-site and off-site for compliance with safety and environmental protection requirements. Monitoring and reporting required by licenses, permits, and procedures, occurs on daily and other necessary periodic bases, through observation and sampling, as appropriate depending on the parameter. The streams and their associated buffers proposed for preservation credit will also be protected by a deed restriction to be recorded on the property, eliminating the potential of future development within these areas. Draft deed restriction language can be found as a response to Comment 7 in Addendum I of the Joint Permit Application.

USACE Comment 5 – For preservation streams HA-1 through HA-9, please clarify the distance between the most downstream point of the preservation reach and the confluence with receiving waters. What is the nature of the property that these reaches flow through prior to entering those receiving waters? What is the ownership of the property? What possible activities may occur within the property between the preservation reach and the receiving water? Will all this area be contained within the NAPS exclusion area? Please

provide a diagram or general map that depicts the extent of the exclusion area surrounding the NAPS.

Dominion Response - The distance between the most downstream point of each proposed stream preservation reach and the receiving waters is presented in the table below.

Preservation Reach Number	Distance – Downstream Point of Reach to Receiving Water (feet)	Preservation Reach Discharge Point
HA-1	372	Sedges Creek
HA-2	1,075	HA-1
HA-3	1,150	HA-2
HA-4	1,478	HA-3
HA-5	1,150	HA-2
HA-6	2,144	HA-5
HA-7	2,451	HA-4
HA-8	1,649	HA-5
HA-9	372	Sedges Creek

From the point of confluence between the HA system and Sedges Creek, Sedges Creek flows an additional 1,543 feet to the Waste Heat Treatment Facility. The entirety of Sedges Creek is outside of the Exclusion Area Boundary (Figure 1).

Generally, the proposed stream preservation reaches flow through deciduous woodland. Some portions of the reaches flow through evergreen stands of forest. Only streams with forested buffer have been proposed for stream mitigation credit.

Dominion owns the land through which the proposed preservation stream reaches flow.

Due to the location of the proposed stream preservation reaches, deed restrictions to be recorded on the property, and limitations enforced by the U.S. Nuclear Regulatory Commission (NRC) regulations, the proposed stream preservation reaches located within the Exclusion Area Boundary will not be impacted by future development activities at the Station. Dominion owns almost all of the land traversed by the HA system. A relatively short distance (approximately 150 feet) of stream channel runs outside of the Exclusion Area Boundary before entering Sedges Creek. The property on either side of Sedges Creek is owned by a local hunting organization. The terminus of each stream system proposed for stream preservation is presented in the table above. Figure 1 depicts the location of the proposed stream preservation reaches and their relationship to the Exclusion Area Boundary.

USACE Comment 6 – Other than the previously provided memorandum of agreement (MOA) between Dominion and the Virginia Department of Game and Inland Fisheries (VDGIF), are any further agreements or protocols in place to administer the expenditure of the funds? Or, will the funds be administered solely by VDGIF in accordance with the general habitat statement contained in the MOA?

Dominion Response – The MOA between Dominion and VDGIF was provided to the USACE on April 8, 2011. There are no additional agreements or protocols that will be used in administering the funds. These funds will be administered solely by VDGIF in accordance with the conditions in the MOA.

USACE Comment 7 – The Virginia Department of Transportation (VDOT) stated that a mitigation site may be present in the area of the roll-off facility at Walkerton Landing. During the evaluation of property that will be used for the roll-off facility in the Mattaponi River, was any deed restriction or other restrictive covenant related to mitigation found to be recorded for these properties?

Dominion Response – Based on review of available information and discussions with VDOT's Fredericksburg District Right of Way Section, Dominion is not aware of a deed restriction or other restrictive covenants related to mitigation recorded for the property where the temporary roll-off facility is proposed. As stated previously, wetland, stream, and SAV impacts at this location are temporary in nature and will be restored to pre-existing conditions following construction activities in accordance with the wetland and SAV restoration plans.

USACE Comment 8 – Please clarify the statement that Dominion has not yet made a decision to construct Unit 3. Specifically, it is necessary to clarify this in the context of project purpose and need. Also, please provide specific detail regarding the quantity of impact from site separation and early site preparation as it has been stated that these activities will proceed regardless of the decision on Unit 3 construction. Are these impacts a phase that can stand independent of the additional construction impacts?

Dominion Response – According to PJM, the Commonwealth of Virginia currently has a long-term energy gap that is projected to result in a deficit of 4,500 megawatts by 2020. One option to help meet this need is additional nuclear power generation at NAPS. Should Dominion decide not to construct a third unit, Virginia will still have a power need that must be addressed by some energy source. As part of its planning to meet future generation resource needs, Dominion continues to pursue the development of Unit 3 in a manner that is in its customers' and the public's interest. A final commitment, however, has not been made for several reasons. First of all, building a nuclear reactor is a complex project requiring long term planning and numerous federal and state authorizations for each development phase, much of which has to occur before other aspects of the project are fully formed. Further, actual construction requires significant financial commitments, which are also developed over time and not necessarily on the same schedule.

Dominion has already received an Early Site Permit from the NRC, along with several environmental permits necessary for conducting certain preliminary site separation activities. Dominion is continuing to pursue a Combined Operating License (COL) from the NRC, along with critical engineering and preliminary site work, and will reassess a construction schedule prior to issuance of the COL currently anticipated in 2013. In December 2010, Dominion reached an agreement securing pre-construction, engineering, design and planning services for Unit 3. If Dominion decides to move forward after receipt of the COL, it will

require approval from the State Corporation Commission and additional environmental permits and approvals.

Site separation activities will result in 0.43 acres of permanent wetland impacts. Further site preparation activities that would impact wetlands/streams will not occur until after a final decision is made to construct Unit 3. Site separation activities, however, are proposed regardless of whether or not Dominion decides to construct Unit 3. Compensation for the few unavoidable impacts associated with site separation activities will involve either the debiting of credits from an approved mitigation bank or a pre-determined contribution to the Virginia Aquatic Resources Trust Fund.

Wetland and stream impacts proposed as part of site separation activities are part of a vital phase of the overall project that must be completed in order to support future potential construction of Unit 3. Subsequent phases of the project will be dependent on the timely completion of these activities. As such, Dominion does not consider site separation and early site preparation as phases that are independent of the additional construction impacts.

We trust that these responses meet your needs at this time for purposes of finalizing the Individual Permit for this project. Please do not hesitate to contact Ms. Kimberly Lanterman of my staff at 804-273-3051 if you have any questions or require further clarification.

Sincerely,

Robert M. Bisha

Robert M. Bisha
Director, Environmental Business Support

Figure:

Figure 1 – Streams for Preservation South of Haley Drive

Attachments:

Attachment A – SAV Restoration Plan
Attachment B – Wetland Restoration Plan
Attachment C – Rain Garden and Infiltration Trench

cc: Mr. Randy Owen, VMRC
Ms. Sarah Marsala, DEQ
Mr. Ryan Fletcher, KWWB

ebc: Pam Faggert
Robert P. Hare
Tony Banks
John Waddill
Steve Pietryk
Pat Lee
Clay Burns
Mary Jo Sheeley
Ken Roller
Jason Ericson
James Beazley
Rick Zuercher
Dean Price
Page Kemp
Randy Markey

File Code: North Anna Power Station/Permit Application/Water-Wetlands & Waterways_JPA-Part I (Wetlands & Streams) 10-1256_Responses to 051111 Comments

Figure 1

Streams for Preservation South of Haley Drive

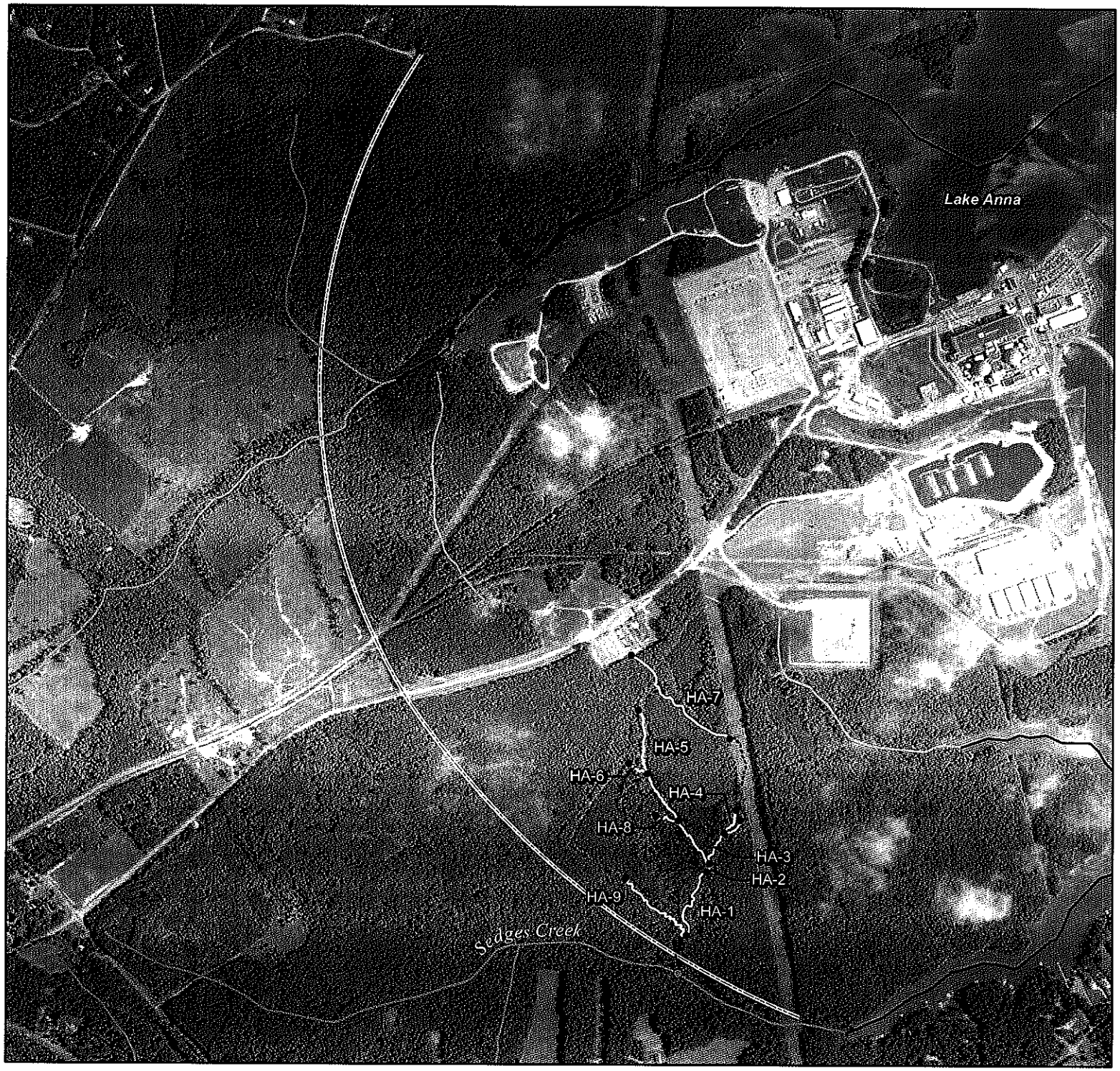


Figure 1

Streams for Preservation South of Haley Drive

Legend

- Confluence with Sedges Creek
- Stream Reach Endpoints
- Approximate Stream Channels (Not Surveyed)
- NAPS Exclusion Area (Boundary is Approximate)
- Streams for Preservation
- National Hydrography Data
- Submerged Channel
- Stream/River

N

0 250 500 1,000

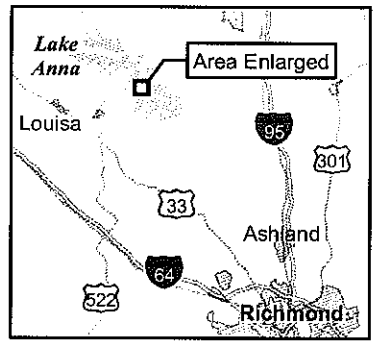
Feet

Sources

ESRI (basemap), 2006

USDA-FSA-APFO (aerial), 2009

USGS (hydrography), 2010



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Attachment A

SAV Restoration Plan

SUBMERGED AQUATIC VEGETATION RESTORATION PLAN FOR THE ROLL-OFF FACILITY ASSOCIATED WITH THE LARGE COMPONENT TRANSPORT ROUTE

PROPOSED UNIT 3
NORTH ANNA POWER STATION

Prepared By

EA Engineering, Science, and Technology
15 Loveton Circle
Sparks, MD 21152

Prepared For

Dominion Virginia Power
5000 Dominion Boulevard
Glen Allen, VA 23060

June 2011

Table of Contents

FIGURES

1.0 INTRODUCTION

The North Anna Power Station (NAPS) is located on a peninsula on the western shore of Lake Anna, approximately seven miles northeast of the town of Mineral, Virginia and approximately 30 miles north-northwest of Richmond, Virginia in Louisa County (Figure 1). Dominion proposes to expand the NAPS site by constructing a third unit to provide additional electric power service to meet increasing electrical demand. As part of the expansion of NAPS, oversized and overweight equipment and materials will be delivered to the NAPS property. There is no direct navigable water access to NAPS; therefore, it is necessary to construct a roll–off facility leading to an over-land transport route. The Large Component Transport Route (LCTR) is the road network proposed to transport the reactor pressure vessel and other oversized/overweight equipment required to construct Unit 3.

The Commonwealth of Virginia currently has a long-term energy gap that is projected to result in a deficit of 4,500 megawatts by 2020. A decision on whether Dominion will move forward with construction of Unit 3 will occur around the time NRC makes a decision on the Combined Operating License (COL) application. Should a third unit not be constructed at NAPS, Virginia will still have a power need that must be addressed by some other energy source. The proposed Unit 3 is currently the response to that need. In the meantime, Dominion intends to proceed with site separation work, environmental permitting, and engineering to support building the new unit.

Dominion submitted a Joint Permit Application (JPA) to the U.S. Army Corps of Engineers (USACE) Norfolk District (Application # 10-V1256) and Virginia Department of Environmental Quality (VDEQ) (Application # 10-1256) in July 2010. Three addenda to the JPA were submitted in September 2010, November 2010, and December 2010. The temporary impacts associated with the roll-off facility component of the LCTR are addressed as Impact # 14-16 in the JPA.

This document addresses temporary impacts to submerged aquatic vegetation (SAV) resources as a result of constructing the proposed roll-off facility and the restoration of the area after the roll-off facility is removed.

1.1 Location of Roll-Off Facility

The oversized/overweight equipment is proposed to be delivered to a Virginia port, placed on deck barges and transported from the Chesapeake Bay up the York and Mattaponi Rivers. Using water transport and then off-loading and re-loading of the heavy and oversized equipment and materials would require a staging and off-loading area on the Mattaponi River at Walkerton, Virginia.

The roll-off component of the LCTR is located along the Mattaponi River in King William County, Virginia. Construction of the roll-off facility is proposed along the south bank of the Mattaponi River (Mattaponi Watershed HUC 02080105) (Figure 2). The location of the roll-off

facility consists of a low lying bank adjacent to a roadbed that slopes gradually up to Virginia State Road 629. Waterward of the bank is a tidal flat that becomes partially submerged during high tides.

1.2 Objective

The objective of this restoration plan is to provide details on restoring SAV temporarily impacted by the construction of the roll-off facility to pre-existing conditions. The plan specifically addresses the grading and planting schemes within the restoration area and establishes success criteria for monitoring the area following construction.

2.0 BASELINE INFORMATION

The proposed project involves the construction of a workable roll-off and staging area for heavy equipment. A cofferdam will be constructed within the river at a depth necessary to accommodate the barges to create the roll-off facility. Additional construction activities will include disturbance/alterations to the existing SAV to grade and level the loading and staging area.

SAV refers to vascular plants that grow completely underwater or up to the water surface. SAV grows in areas of shallow water where light can penetrate at intensities sufficient to support photosynthesis, typically in water less than six feet (Hurley 1990). SAV establishment and growth depends mostly on light availability but also factors including availability of propagules; suitable water quality, salinity, temperature, water depth, and tidal range; suitable sediment quality, wave action and current velocity; and low enough levels of physical disturbance and toxic substances (Batiuk et al. 2000).

A SAV survey was conducted at the proposed roll-off facility in September 2010 (WSSI 2010). The study area included approximately 4.3 acres of submerged land and immediately adjacent shoreline along the Mattaponi River. The SAV methodology included a combination of visual observation of SAV from a jon boat and dragging a double-sided rake along the bottom to determine the boundaries of differing densities of SAV cover. The densities were categorized as Dense and Sparse beds. Dense beds had an average of 0-5 feet of space between SAV clumps and Sparse density had an average of 5 feet or greater between SAV clumps.

The results of the survey indicated that six different habitat types of SAV and other aquatic habitats were present within the project area. Descriptions of the habitats are presented below (WSSI 2010):

- Dense SAV Beds – This area was dominated by hydrilla (*Hydrilla verticillata*) and water celery (*Vallisneria americana*), with a relative cover of 90 percent and ten percent, respectively. Hydrilla and water celery are common and well documented in the Mattaponi River.
- Sparse SAV Beds – This area was dominated by hydrilla and water celery with a relative cover of 20 percent and 80 percent, respectively.
- Dense SAV/Mixed Flat Community – This area was dominated by hydrilla. The areas not dominated by hydrilla consisted of mixed sand and mud flats dominated by clams, snails, aquatic worms, and crustaceans.
- Sparse SAV/Yellow Pond-Lily Community – This area was dominated by hydrilla and yellow pond-lily (*Nuphar luteum*). Other species observed included pickerel weed (*Pontederia cordata*), sweet flag (*Acorus calamus*), wild rice (*Zizania aquatic*), American three-square (*Scirpus americanus*), rice cutgrass (*Leersia oryzoides*), swamp smartweed (*Polygonum hydropiperoides*), golden club (*Orontium aquaticum*), and sneezeweed (*Helenium autumnale*).
- Mixed Freshwater Community – This area was dominated by wild rice and swamp smartweed. Other species observed included arrow-leaf tearthumb (*Polygonum saggittatum*), pickerel weed, Walter's millet (*Echinochloa walteri*), swamp rosemallow (*Hibiscus moscheutos*), and marsh dayflower (*Murdannia keisak*).
- Intertidal Beach Community – This area consisted of wave-washed shoreline inhabited by crustaceans and aquatic worms.

Hydrilla, a highly invasive non-native species, is prevalent in the project area. Hydrilla was imported from Southeast Asia and forms dense mats of vegetation that impedes recreational and commercial use of waters. It is capable of tolerating very low light levels in comparison to other SAV species (Hurley 1990). As stated above, hydrilla was dominant in both the Dense and Sparse SAV beds with a relative cover of 90 percent and 20 percent, respectively.

The proposed project will temporarily impact approximately 14,194 square feet (0.32 acres) of SAV and approximately 6,045 square feet (0.14 acres) of non-SAV habitat, such as mudflat and intertidal beach community. Mudflat habitat was included as part of the mixed flat community. Impacts to the existing resources are depicted in Figure 2.

In addition to the SAV survey, a bathymetric survey was conducted by GeoMetrics-GPS in September 2010.

3.0 SITE RESTORATION DESIGN

3.1 Grading

Disturbed areas, including any adjacent areas affected by either sedimentation or scouring during the life of the roll-off facility, will be re-contoured to their original pre-construction grades. Figure 3 depicts the proposed grades for the restoration of SAV habitat. The cofferdam will remain in place until the end of the grading process. The selection of the disposal site for the material to be removed will be coordinated with the permitting agencies at least 90 days prior to initiation of restoration activities.

3.2 Planting

Prior to construction of the roll-off facility, a grain size analysis as well as a determination of the percent organic matter of the existing substrate will be performed. The goal is to determine the characteristics of the substrate that wild celery has colonized and possibly discourage or minimize the growth of hydrilla. Based on the substrate analysis, sediment with similar characteristics will be deposited within the originally delineated SAV beds, prior to the installation of plant material.

Wild celery will be re-established within the SAV beds at the project site. Wild celery is widely distributed in fresh water, tidal freshwater rivers, tidal tributaries and estuaries. This species has long, flattened, ribbon-like leaves that emerge from clusters at the base of the plant. The leaves have a bluntly rounded tip and a light green stripe that runs down the center. Wild celery can reproduce by seed, rhizomes, and tubers.

There are currently no known commercial suppliers to provide plants of native wild celery. Dominion will coordinate with Virginia Institute of Marine Science (VIMS) to harvest the wild celery species from the site during the growing season (May/June), prior to the start of construction activities. VIMS will create man-made SAV beds within their SAV Complex Area and grow the species during the estimated 4 to 5 year time period the Roll-Off Facility will be constructed and in use.

Wild celery will be transplanted from the SAV beds at VIMS to the restoration site. A portion of the wild celery grown by VIMS will be reserved to provide stock for possible replanting at the roll-off facility, in the event of success deficiencies. Should it be determined that growing vegetation at the VIMS SAV Complex Area is not feasible, Dominion will explore options for obtaining wild celery plants from a supplier.

Dominion proposes to plant wild celery at a spacing of 2 feet on-center. Figure 4 presents the extent of the planting of SAV. Monitoring of species prior to construction activities will be conducted to determine baseline conditions and restoration expectations.

3.3 Sequence of Construction

The structures associated with the roll-off component of the LCTR will be in place for approximately 4 to 5 years. Earthwork for the proposed SAV restoration is tentatively scheduled to begin following removal of the roll-off facilities. Soil erosion control measures will be installed prior to the initiation of the earthwork and will be maintained throughout the construction phase of the SAV restoration. Vegetation will then be planted in accordance with the planting plan. Figure 5 depicts the sequence of events proposed for the restoration of the SAV habitats.

An as-built survey will be developed following restoration activities. The survey will be submitted to VDEQ, VMRC, and USACE to demonstrate restoration to pre-construction contours and elevations and planting distributions.

4.0 PERFORMANCE STANDARDS

Plant density is a major component of success criteria. SAV densities will be monitored to evaluate the performance of the restoration project. By the end of the second monitoring year, the SAV areas are expected to have 50 to 80 percent vegetative cover.

5.0 MONITORING AND MAINTENANCE

Restoration of SAV will require annual monitoring for a minimum period of 2-years to ensure successful establishment and growth of the wild celery. The restoration site will be monitored using transect sampling. Pre-determined transects will be established perpendicular to the shoreline in equal increments. A Quadrant will be used along transects to determine individual species counts and percent coverage. Percent cover will be determined through visual estimation or a grid overlay.

Annual monitoring reports will be submitted to VDEQ, VMRC, and USACE for the first two years following the end of the first growing season after planting the SAV beds. A final monitoring report will be submitted upon completion of the fifth year following restoration. An official release of monitoring requirements will be requested from the permitting agencies at the end of the fifth year of monitoring. Monitoring reports will be submitted by December 31st of each monitoring year. Vegetation data will be collected during the growing season. Each SAV report will include SAV boundaries plotted on the site plan, photographs from fixed-point

stations, an aerial photograph depicting the entire site, and the quantitative quadrat data. Dominion will identify the invasive species and quantify the extent of invasion by stem counts or percent cover.

6.0 REFERENCES

Batiuk, R., P. Bergstrom, M. Kemp, E. Koch, L. Murray, J.C. Stevenson, R. Bartleson, V. Carter, N.B. Rybicki, J.M. Landwehr, C. Gallegos, L. Karrh, M. Naylor, D. Wilcox, K.A. Moore, S. Ailstock, and M. Teichberg. 2000. *Chesapeake Bay Submerged Aquatic Vegetation Water Quality and Habitat-Based Requirements and Restoration Targets: A Second Technical Synthesis*. USEPA CBP/TRS 245/00.

Hurley, L.M. 1990. *Field Guide to the Submerged Aquatic Vegetation of Chesapeake Bay*. U.S. Fish and Wildlife Service, Chesapeake Bay Estuary Program. Annapolis, Maryland. 51pp.

Wetlands Studies and Solutions, Inc. (WSSI). 2010. *Survey for Submerged Aquatic Vegetation (SAV) and Other Aquatic Habitats: Mattaponi River*. Prepared for EA Engineering, Science, and Technology. September.

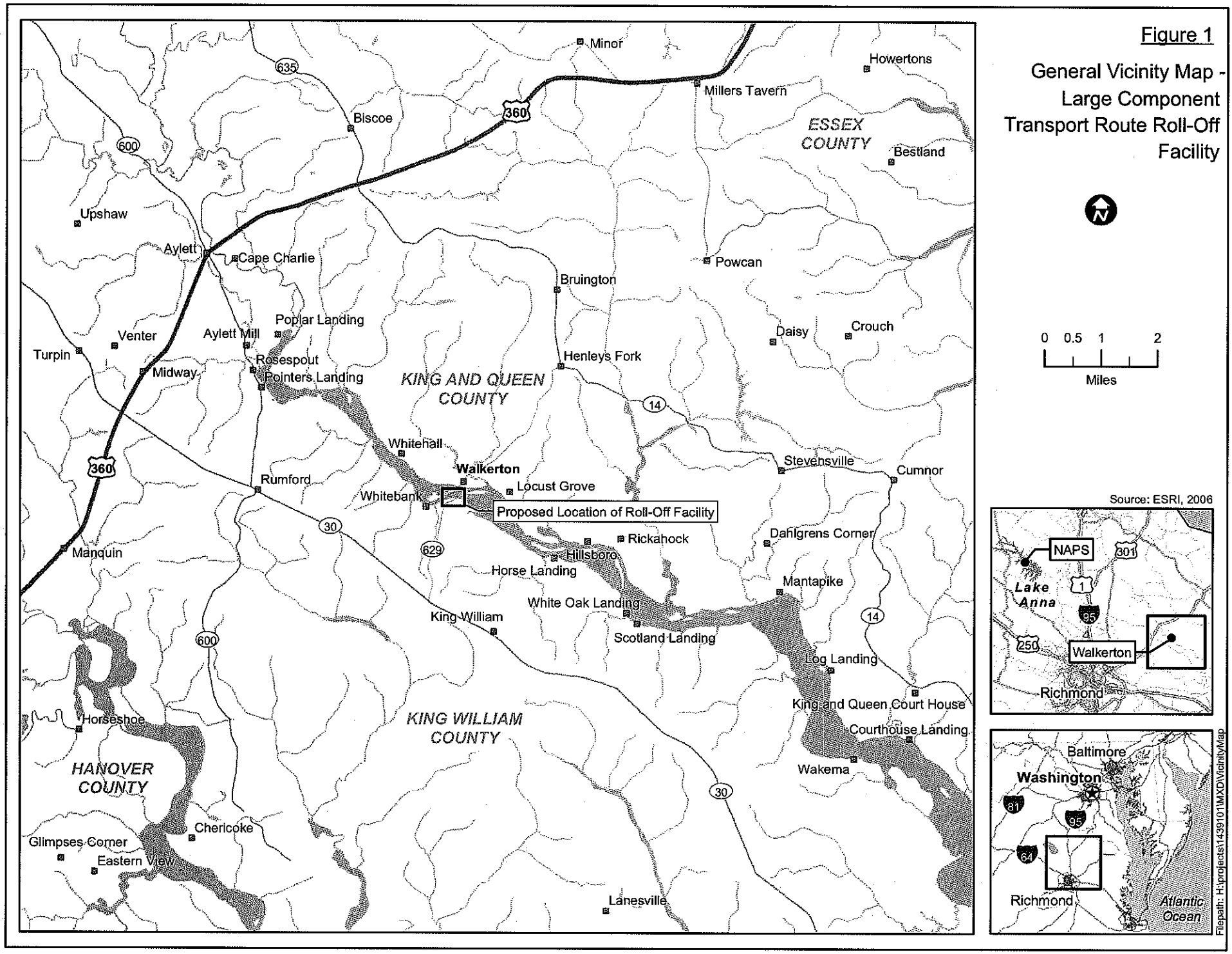
Figure 1
General Vicinity Map - Large Component Transport Route Roll-Off Facility
Minor
Howertons
Millers Tavern
635
360
Biscoe
ESSEX COUNTY
Bestland
600
Upshaw
Aylett
Cape Charlie
Powcan
Bruington
Poplar Landing
Venter
Aylett Mill
Daisy
Crouch
Turpin
Rosespout
Henleys Fork
Midway
Pointers Landing
KING AND QUEEN COUNTY
14
Whitehall
Stevensville
Cumnor
360
Walkerton
Rumford
Locust Grove
Whitebank
Proposed Location of Roll-Off Facility
30
Dahlgrens Corner
Rickahock
629
Manquin
Hillsboro
Horse Landing
Mantapike
White Oak Landing
King William
14
600
Scotland Landing
Log Landing
King and Queen Court House
Horseshoe
KING WILLIAM COUNTY
Courthouse Landing
HANOVER COUNTY
Wakema
30
Chericoke
Glimpses Corner
Eastern View
Lanesville
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Miles
Source: ESRI, 2006
NAPS
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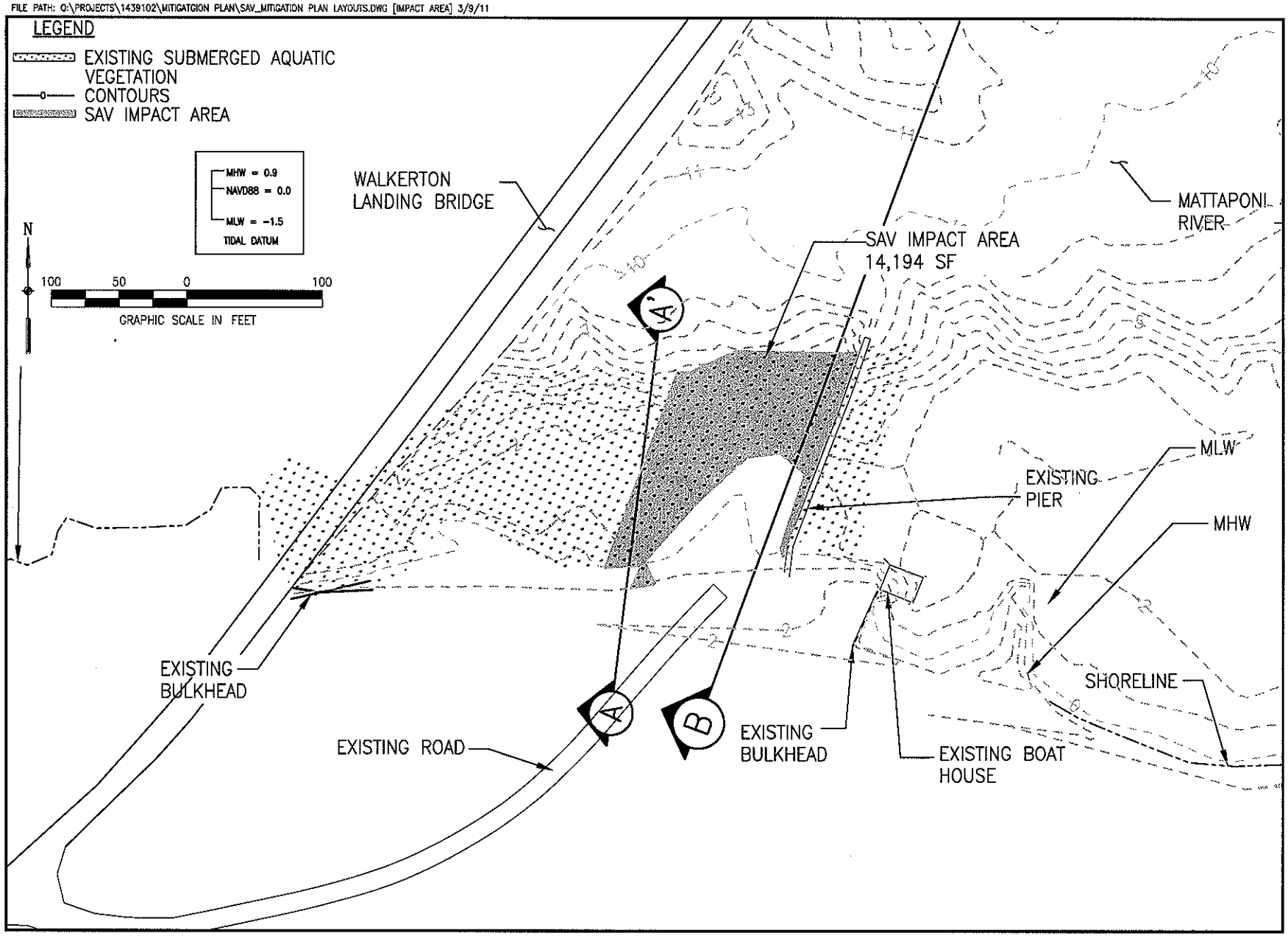

FIGURE 2: EXISTING CONDITIONS AND SUBMERGED AQUATIC VEGETATION (SAV) IMPACT AREA, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

FILE PATH: Q:\PROJECTS\1439102\MITIGATGION PLAN\SAV_MITIGATION PLAN LAYOUTS.DWG [PROPOSED GRADING PLAN] 3/11/11

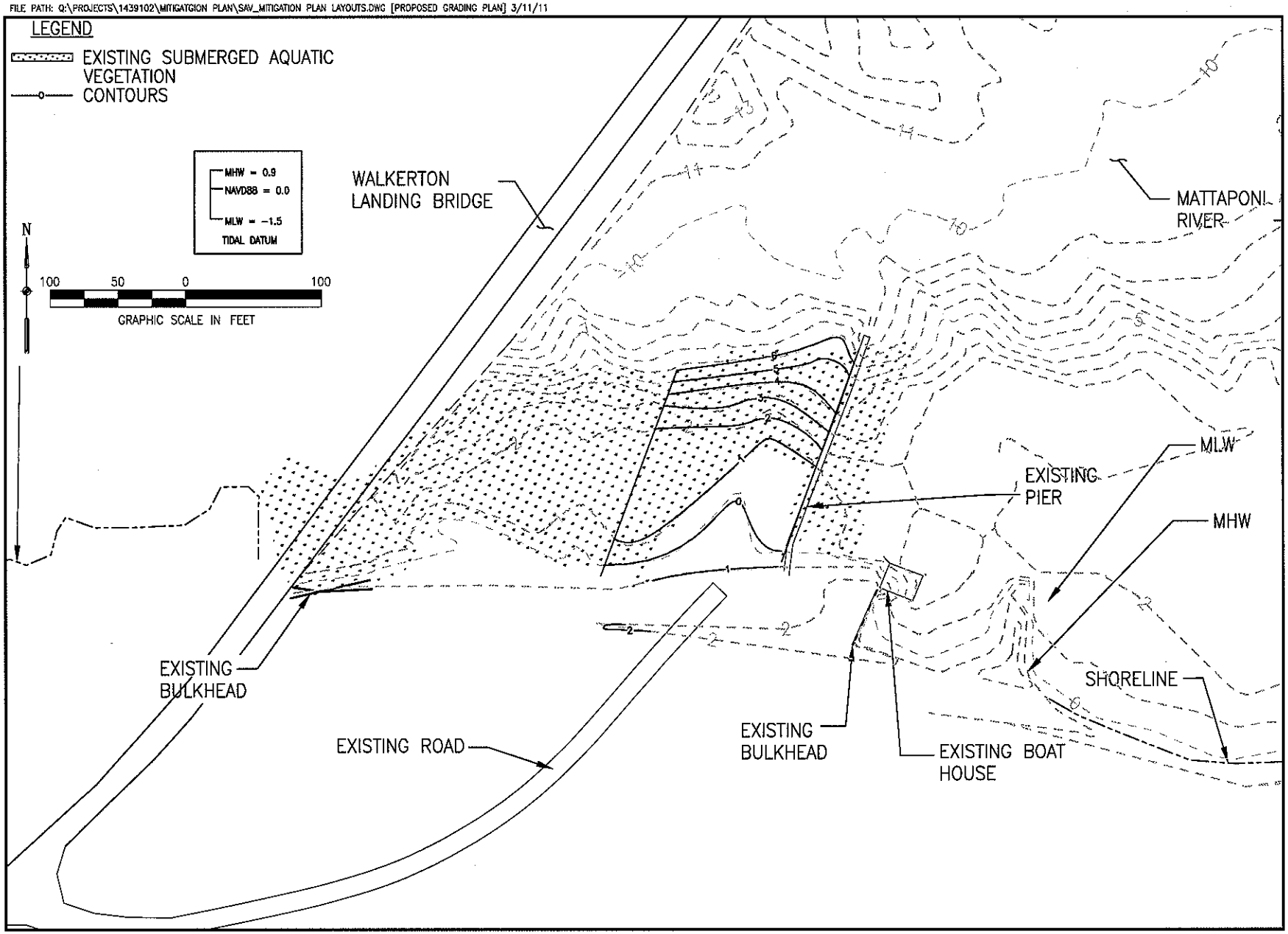

FIGURE 3: PROPOSED GRADING PLAN FOR SUBMERGED AQUATIC VEGETATION (SAV) RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

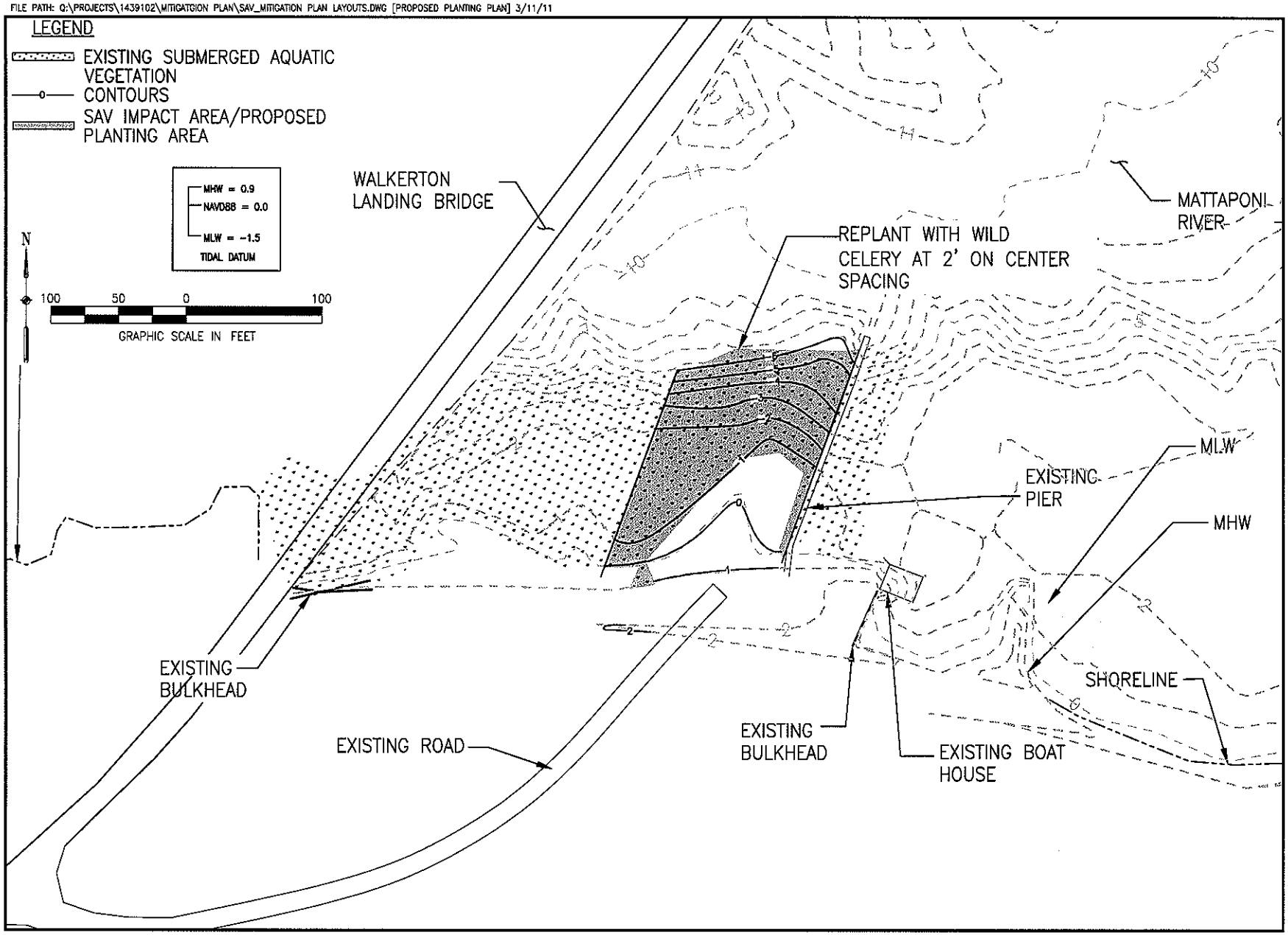

FIGURE 4: PROPOSED PLANTING PLAN FOR SUBMERGED AQUATIC VEGETATION (SAV) RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR, PRIOR TO REMOVAL OF ANY OF THE ROLL-OFF FACILITIES, SHALL COORDINATE WITH THE SEDIMENT CONTROL INSPECTOR AND NOTIFY THE REGULATING AGENCIES PRIOR TO RE-DISTURBANCE OF THE SITE.
2. INSTALL ALL PERIMETER CONTROLS (SILT FENCE, TURBIDITY CURTAIN, STABILIZED CONSTRUCTION ENTRANCES) AS REQUIRED PRIOR TO SITE DISTURBANCE.
3. WORKING ON THE LANDWARD SIDE, THE CONTRACTOR SHALL REMOVE ALL SITE IMPROVEMENTS. STONE, AND OTHER NON-SOIL MATERIALS SHALL BE REMOVED AND DIRECTLY TRANSPORTED TO AN APPROVED DISPOSAL SITE. MATERIALS SHALL NOT BE STOCKPILED ONSITE, NOR SHALL THE CONTRACTOR INTRUDE UPON AREAS OUTSIDE THE ORIGINAL LIMIT OF DISTURBANCE FOR THE SITE.
4. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR APPROXIMATE EXISTING GRADE FOLLOWING THE REMOVAL OF FACILITIES.
5. THE CONTRACTOR SHALL INSTALL WILD CELERY PLUGS AT 2' ON CENTER SPACING.
6. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE PERIMETER CONTROLS.

FIGURE 5: PROPOSED SUBMERGED AQUATIC VEGETATION (SAV) RESTORATION SEQUENCE OF CONSTRUCTION, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

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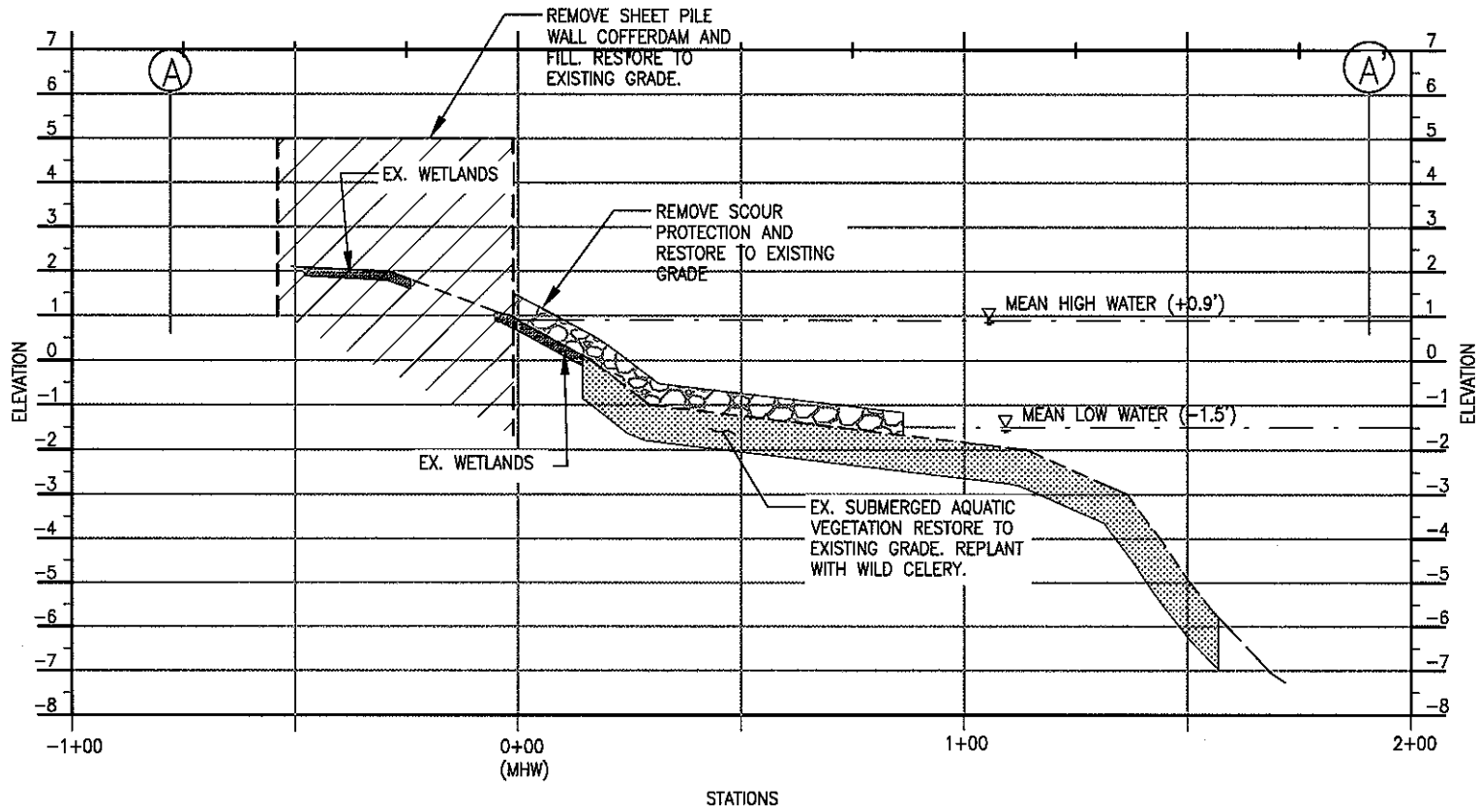

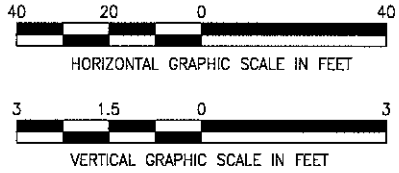

FIGURE 6: SUBMERGED AQUATIC VEGETATION (SAV) RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY
CROSS SECTION A – A'

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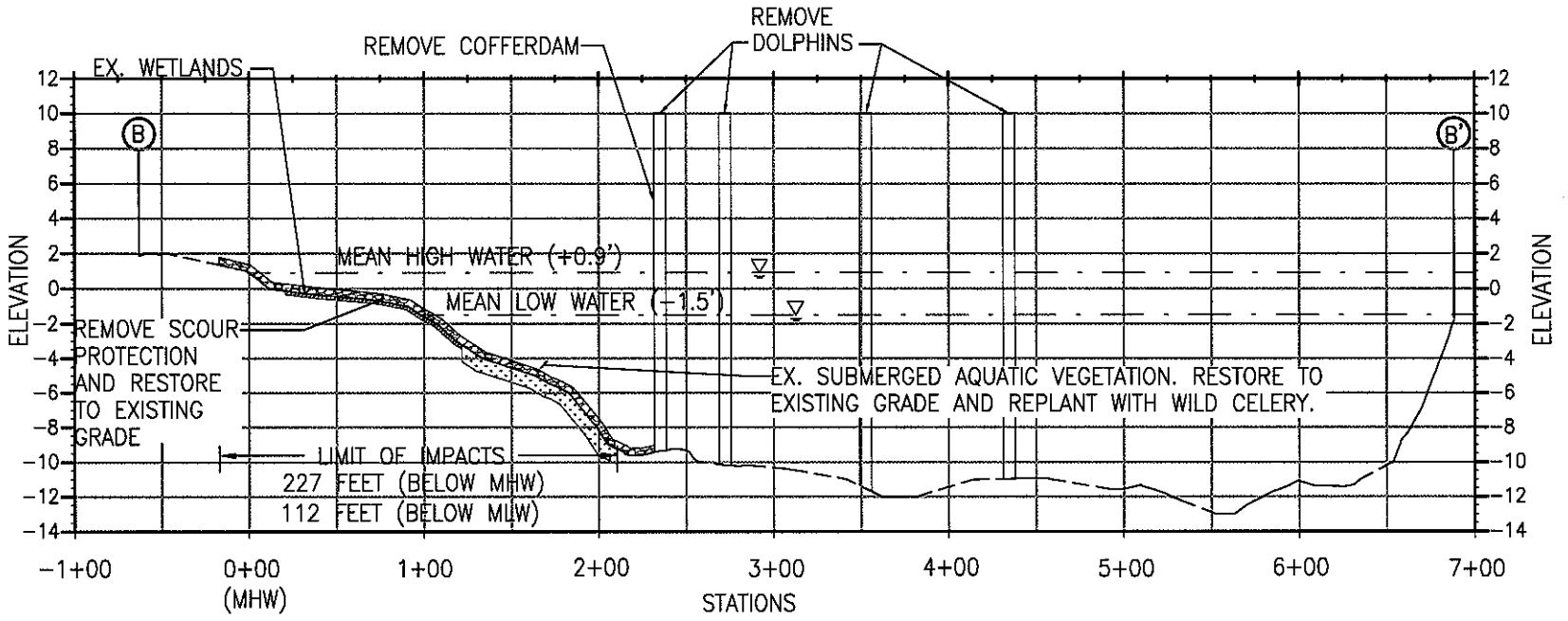

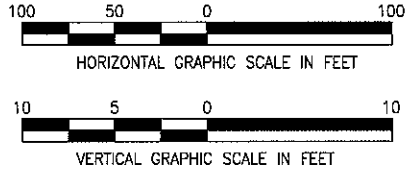

FIGURE 7: SUBMERGED AQUATIC VEGETATION (SAV) RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY
CROSS SECTION B – B'

Attachment B

Wetland Restoration Plan

WETLAND RESTORATION PLAN
FOR THE ROLL-OFF FACILITY ASSOCIATED WITH
THE LARGE COMPONENT TRANSPORT ROUTE

PROPOSED UNIT 3
NORTH ANNA POWER STATION

Prepared By

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Prepared For

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June 2011

TABLE OF CONTENTS

TABLES

FIGURES

1.0 INTRODUCTION

The North Anna Power Station (NAPS) is located on a peninsula on the western shore of Lake Anna, approximately seven miles northeast of the town of Mineral, Virginia and approximately 30 miles north-northwest of Richmond, Virginia in Louisa County (Figure 1). Dominion proposes to expand the NAPS site by constructing a third unit to provide additional electric power service to meet increasing electrical demand. As part of the expansion of NAPS, oversized and overweight equipment and materials will be delivered to the NAPS property. There is no direct navigable water access to NAPS; therefore, it is necessary to construct a roll–off facility leading to an over-land transport route. The Large Component Transport Route (LCTR) is the road network proposed to transport the reactor pressure vessel and other oversized/overweight equipment required to construct Unit 3.

The Commonwealth of Virginia currently has a long-term energy gap that is projected to result in a deficit of 4,500 megawatts by 2020. A decision on whether Dominion will move forward with construction of Unit 3 will occur around the time NRC makes a decision on the Combined Operating License (COL) application. Should a third unit not be constructed at NAPS, Virginia will still have a power need that must be addressed by some other energy source. The proposed Unit 3 is currently the response to that need. In the meantime, Dominion intends to proceed with site separation work, environmental permitting, and engineering to support building the new unit.

Dominion submitted a Joint Permit Application (JPA) to the U.S. Army Corps of Engineers (USACE) Norfolk District (Application # 10-V1256) and Virginia Department of Environmental Quality (VDEQ) (Application # 10-1256) in July 2010. Three addenda to the JPA were submitted in September 2010, November 2010, and December 2010. The temporary impacts associated with the roll-off facility component of the LCTR are addressed as Impact # 14-16 in the JPA.

This document addresses temporary impacts to wetland resources as a result of constructing the proposed roll-off facility and the restoration of the area after the roll-off facility is removed.

1.1 Location of Roll-Off Facility

The oversized/overweight equipment is proposed to be delivered to a Virginia port, placed on deck barges and transported from the Chesapeake Bay up the York and Mattaponi Rivers. Using water transport and then off-loading and re-loading of the heavy and oversized equipment and materials requires a staging and off-loading area on the Mattaponi River at Walkerton, Virginia.

The roll-off component of the LCTR is located along the Mattaponi River in King William County, Virginia. Construction of the roll-off facility is proposed along the south bank of the Mattaponi River (Mattaponi Watershed HUC 02080105) (Figure 1). The location of the roll-off facility consists of a low lying bank adjacent to an abandoned roadbed that slopes gradually up to Virginia State Road 629. Waterward of the bank is a tidal flat that becomes partially submerged during high tides.

1.2 Objective

The objective of this restoration plan is to provide details on restoring wetlands temporarily impacted by the roll-off facility to pre-existing conditions. The plan specifically addresses the grading and planting schemes within the wetland restoration area and establishes success criteria for monitoring the area following restoration.

2.0 BASELINE INFORMATION

The proposed project involves the construction of a workable roll-off and staging area for heavy equipment. A cofferdam will be constructed within the river at a depth necessary to accommodate the barges to create the roll-off facility. Additional construction activities will include wetland disturbance/alterations to the existing tidal marsh and emergent wetland as well as upland vegetation removal and disturbance to grade and level the loading and staging area.

Wetland delineations were conducted at the proposed roll-off facility in 2008 and 2009 (EA 2008; EA 2009). A wetland system containing three wetlands was identified in the immediate vicinity of the proposed roll-off facility. The wetland system contained two emergent wetlands (Wetlands 1B and 1C - Impacts # 15 and 16) and one estuarine intertidal emergent wetland (Wetland 1 - Impact # 14). Descriptions of the wetland areas are provided below.

The proposed project will temporarily impact approximately 10,577 square feet (0.24 acres) of wetland areas, including approximately 8,020 square feet (0.18 acres) of Wetland 1, approximately 2,234 square feet (0.05 acres) of Wetland 1B, and approximately 323 square feet (0.01 acres) of Wetland 1C. Additionally, approximately 20,239 square feet (0.47 acres) of submerged bottom within the Mattaponi River will be temporarily impacted due to the proposed cofferdam, scour protection, and dolphins. The restoration of submerged aquatic vegetation impacted by the proposed roll-off facility will be discussed in a dedicated restoration plan under separate cover. Impacts to the existing wetland resources are depicted in Figure 2. Cross-sections of the impacted areas are depicted on Figures 6 through 8.

In addition to the wetland surveys, bathymetric surveys were conducted by GeoMetrics-GPS in September 2010.

2.1 Wetland 1 – Impact #14

Wetland 1 is located on the east side of the Walkerton Road Bridge, adjacent to the Mattaponi River. This wetland system is characterized as an estuarine intertidal emergent wetland. The dominant vegetation included woolgrass (*Scirpus cyperinus*), soft rush (*Juncus effusus*), nut sedge (*Cyperus esculentus*), and wild rice (*Zizana aquatica*). The soil matrix within Wetland System 1 had a Munsell color of 10YR 5/2 within the A horizon (0-3 inches) and 10YR 5/1 within the B horizon (3-14 inches). No mottles were observed within the A or B horizons. The A horizon was classified as a coarse sand and the B horizon was classified as a coarse sandy clay. Hydric indicators included inundation, saturation in the upper 12 inches and patterns of drainage (EA 2009).

2.2 Wetland 1B – Impact #15

Wetland 1B was located immediately west of Wetland 1 and included the area beneath the Walkerton Road Bridge. This wetland was characterized as a palustrine emergent wetland and contained vegetation dominated by wild rice, three-square bulrush (*Scirpus pungens*), and pond lily (*Nuphar luteum*). Soils were characterized as hydric and medium sandy clay (0-2 inches below the surface) and clayey sand (2-14 inches below the surface). The soil matrix within Wetland System 1B had a chroma of 10YR 4/1 within the A horizon (0-2 inches) with many large, dark mottles (10YR 4/6). The soil chroma within the B horizon (2-14 inches) was 10YR 4/1 with no mottles observed. Saturation of the soil within in the upper 12 inches was evident during the field investigation (EA 2009).

2.3 Wetland 1C – Impact #16

The third wetland was located just south of Wetland 1 and Wetland 1B, beneath a power line. This wetland was classified as a non-tidal, palustrine emergent wetland and was dominated by sweetflag (*Acorus americanus*), deertongue grass (*Dichanthelium clandestinum*), black willow (*Salix nigra*), and sweet gum (*Liquidambar styraciflua*). The soil matrix within Wetland System 1C had a chroma value of 7.5YR 5/1 within the A horizon (0-5 inches). The chroma value within the B horizon (5-9 inches) was 7.5YR 4/1. The B horizon had a chroma value of 7.5YR 3/1 at 9-12 inches. The A and B horizons were classified as coarse sand. A silty sand was present at 11-12 inches. Wetland hydrology indicators included saturation in the upper 12 inches (EA 2009).

3.0 SITE RESTORATION DESIGN

Wetland impacts associated with construction and use of the roll-off facility will be temporary. The structures will be in place for approximately four to five years. Materials imported to the site will be removed and the original surface grade will be restored. Native wetland plants observed within the site and region will be re-introduced.

3.1 Grading

While the cofferdam is still in-place, disturbed areas, including any adjacent areas affected by either sedimentation or scouring during the life of the roll-off facility, will be re-contoured to match the grades that existed prior to development of the roll-off facility. To restore the appropriate wetland hydrology, the wetland areas will be graded down to a range of elevations matching the elevations of the wetlands prior to construction. The proposed grading plan is depicted in Figure 3. The selection of the disposal site for the material to be removed will be coordinated with the permitting agencies at least 90 days prior to initiation of restoration activities.

3.2 Planting

Prior to planting, soils will be deposited within the originally delineated wetland areas. Soil analyses of the site will be conducted at the completion of the earthwork phase to determine

percent organic matter, pH, and nutrient levels. Based on soil testing results, soil amendments will be incorporated, if necessary, prior to the installation of the plant material. The appropriate soil amendment types and quantities will be incorporated to a depth of 12 inches to provide an adequate level of nutrients, a neutral pH level, and a minimal 15 percent organic level. Fertilizer recommendations will be developed based on the soil test results; however, the incorporation of fertilizer will be avoided, if possible.

Planting will occur immediately following the incorporation of the appropriate soil amendments, if necessary. Areas of disturbance will be re-planted with native plant species appropriate to the hydrologic conditions and tidal regime. Viable plantings of native, dominant vegetation species that existed in the wetlands prior to disturbance will be used. The distribution of species to be planted will approximate the distribution of native species observed prior to the construction of the roll-off facility. Table 1 and Figure 5 provide information on the proposed plant species chosen to be installed as part of the restoration plan. Plant species to be installed are adapted to the proposed conditions and are native to the region.

Herbaceous plants will be well-rooted plug-sized individuals. Herbaceous species will be intermixed and planted in a random manner for spatial distribution and density throughout the area depicted on the design plans as Impact 14, Impact 15, and Impact 16. The proposed planting plan is shown in Figure 4. Erosion and sediment control measures will be followed in accordance with the Natural Resource Conservation Service guidelines.

Upland areas that formerly contained woodland species will also be re-contoured as necessary. Native tree and shrub species that previously occurred within the area will be planted as saplings. Upland un-vegetated areas impacted by the construction and de-construction process will be planted with native grasses or herbaceous species to minimize erosion.

3.3 Sequence of Construction

The structures associated with the roll-off component of the LCTR will be in place for an estimated 4 to 5 years. Upon completion of Unit 3 construction activities at NAPS, the location of the roll-off component will be restored to pre-construction contours. The general sequence of the wetland restoration activities is provided below and depicted on Figure 5:

1. Prior to removal of components of the roll-off facility, the Dominion Virginia Power will notify regulatory agencies. In addition, the contractor will coordinate with the sediment control inspector.
2. The contractor will install sediment and erosion control structures (i.e., silt fence, turbidity curtain, stabilized construction entrances) as required prior to disturbance of the site.
3. The contractor will remove all components of the roll-off facility, including stone and other non-soil materials and transport materials to an approved disposal site. Materials will not be stockpiled onsite, nor will the contractor intrude upon areas outside the original limit of disturbance.
4. Disturbed areas will be restored to their approximate existing grade.

5. Non-tidal wetland restoration areas will be chisel plowed to a minimum depth of 8-inches to remove soil compactions. The remaining rubble or construction debris will be recovered by hand or other approved means to limit site compaction.
6. The contractor will hand grade the wetland restoration areas and apply a temporary wetland seed stabilization mix.
7. The contractor will install plants depicted on the planting sheet at a density of 2-feet on center.
8. Following restoration efforts and with approval of the sediment control inspector, sediment and erosion control structures will be removed.

An as-built survey will be developed following restoration activities. The survey will be submitted to VDEQ, VMRC, and USACE to demonstrate restoration to pre-construction contours and elevations and planting distributions.

4.0 PERFORMANCE STANDARDS

4.1 Vegetation

Vegetation is monitored to evaluate the performance of a wetland restoration site. During the growing season, the wetlands are expected to have 50 percent vegetative cover by the end of the first monitoring year. In the two succeeding monitoring years there must be more than 80 percent cover of vegetation.

4.2 Invasive Species

Invasive species can threaten the diversity or abundance of native species and the ecological stability of the natural system. Invasive species will be managed to achieve a percent cover less than 20 percent of the total site vegetation.

5.0 MONITORING AND MAINTENANCE

Dominion will comply with permit conditions associated with the monitoring of the restored wetlands. Monitoring of the restored wetlands will ensure that the disturbed areas will be reestablished with native plants and will not become over colonized with non-native invasive plant species.

Restoration of non-tidal and tidal wetlands will require annual monitoring for a period of up to 5-years, per VDEQ guidelines. The hydrology, soils, and vegetation will be monitored annually to ensure that wetland species are established, the wetland has adequate hydrology, vegetation is naturally succeeding, soil is rich in organic material, and that the wetland is functioning effectively and efficiently. During the 5-year monitoring process, Dominion is also responsible for removal of non-native plant species to assure coverage is below 20 percent of the total site vegetation.

5.1 Vegetation

Based on the size of the wetland sites, Dominion proposes the assessment of vegetative cover by establishing three randomly selected sample plots. Plot size will have an 18-inch radius or be 40 inches by 40 inches square. Percent cover, by species, will be visually estimated for each sample plot.

5.2 Invasive Species

Undesirable plant species are those that impede or prevent development of target plant communities or functional classes and include species on the Virginia Department of Conservation and Recreation's Invasive Alien Plant List.

Dominion will monitor for undesirable species annually, during the 5-year monitoring period, using a three-step approach:

- Identification: Identification of undesirable species will be part of the monitoring program. Observed species will be quantified and approximate location(s) identified on the restoration site plan.
- Assessment of Threat: An analysis will be conducted of the threat for a particular species becoming a nuisance on the restoration site. The analysis will consider species abundance, potential adverse effects of no management methods, contributing factors (physical characteristics such as presence of too little or too much water on the site that may optimize site conditions favorable to the spread of identified nuisance species), and possible vectors for plant spread or introduction to the site.
- Management: Management options will be based upon the assessment of threat and currently accepted management methods. Specific methods to manage undesirable species will be dependent upon the relative abundance of the species identified. It is anticipated that proposed management methods may include manual, mechanical, and/or chemical management methods. Only herbicides that are specifically labeled for aquatic applications will be used.

5.3 Reporting

Annual monitoring reports will be submitted to VDEQ, VMRC, and USACE for the duration of the monitoring period following the end of the first growing season after planting the wetlands. Vegetation data will be collected between the spring and fall seasons and monitoring reports will be submitted by December 31st of each monitoring year. Each wetland report will include wetland boundaries plotted on the site plan, photographs depicting a view of the wetland area taken from fixed-point stations, an aerial photograph depicting the entire site, hydrologic information, and vegetation data.

An official release of monitoring requirements will be requested from the permitting agencies at the end of the fifth year of monitoring. In the event the wetland restoration does not satisfy the wetland restoration requirements, Dominion will consult with the permitting agencies to determine possible alternative mitigation options.

6.0 REFERENCES

EA Engineering, Science and Technology, Inc (EA). 2008. *Memorandum: Wetland Evaluation of the Proposed Heavy Haul Route*. November.

EA Engineering, Science and Technology, Inc (EA). 2009. *Wetland Delineation Report for the Proposed Unit 3 Heavy Haul Route*. June.

Table 1. Proposed Native Vegetation Species for the Roll-Off Facility Restoration Plan

Scientific Name	Common Name	Wetland Status	Tide Regime	Plant Material Size	Spacing (feet on center)
Wetland Impact Area 14 – Estuarine Intertidal Emergent (E2EM)					
Pontederia cordata	Pickerel weed	OBL	Intertidal	1 plug	2
Scirpus americanus	American three-square	OBL	Intertidal	1 plug	2
Scirpus cyperinus	Woolgrass	FACW	Intertidal	1 plug	2
Zizania aquatica	Wild rice	OBL	Intertidal	1 plug	2
Wetland Impact Area 15 – Palustrine Emergent (PEM)					
Juncus effusus	Soft rush	FACW	Non-Tidal	1 plug	2
Nuphar luteum	Pond lily	OBL	Non-Tidal	1 plug	2
Polygonum sagittatum	Arrow-leaf tearthumb	OBL	Non-Tidal	1 plug	2
Scirpus pungens	Three square bulrush	FACW	Non-Tidal	1 plug	2
Zizania aquatica	Wild rice	OBL	Non-Tidal	1 plug	2
Wetland Impact Area 16 – Palustrine Emergent (PEM)					
Acorus americanus	Sweetflag	OBL	Non-Tidal	1 plug	2
Asclepias incarnata	Swamp milkweed	OBL	Non-Tidal	1 plug	2
Carex lurida	Lurid sedge	OBL	Non-Tidal	1 plug	2
Dichanthelium clandestinum	Deertongue grass	FAC	Non-Tidal	1 plug	2
Hibiscus moscheutos	Swamp rosemallow	OBL	Non-Tidal	1 plug	2
Juncus effusus	Soft rush	FACW	Non-Tidal	1 plug	2

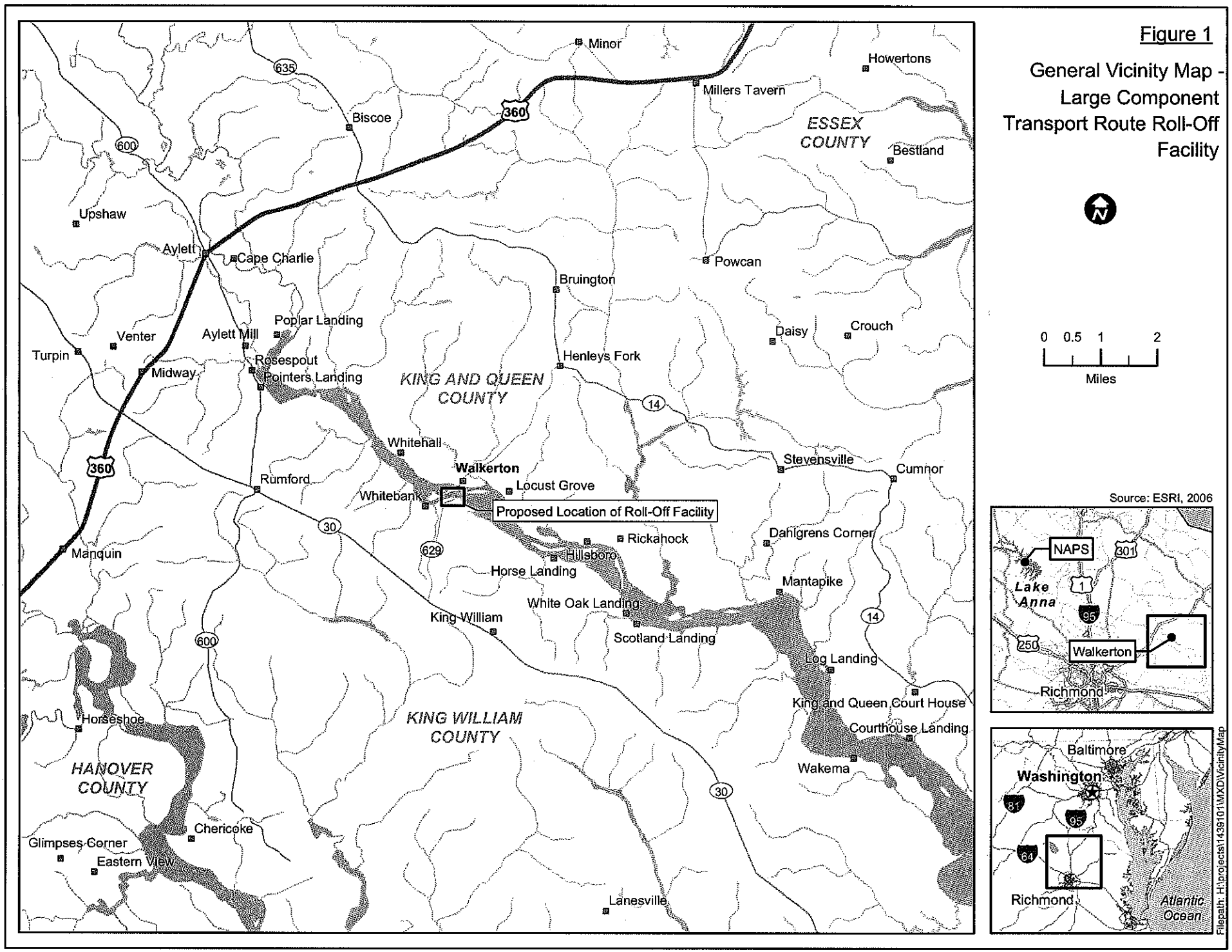
Figure 1
General Vicinity Map - Large Component Transport Route Roll-Off Facility
Minor
Howertons
Millers Tavern
Biscoe
ESSEX COUNTY
Bestland
Upshaw
Aylett
Cape Charlie
Powcan
Bruington
Poplar Landing
Venter
Aylett Mill
Daisy
Crouch
Turpin
Midway
Rosespout
Pointers Landing
KING AND QUEEN COUNTY
Henleys Fork
Whitehall
Walkerton
Stevensville
Cumnor
Rumford
Locust Grove
Whitebank
Proposed Location of Roll-Off Facility
Rickahock
Dahlgrens Corner
Manquin
Hillsboro
Horse Landing
Mantapike
White Oak Landing
King William
Scotland Landing
Log Landing
King and Queen Court House
Courthouse Landing
Horseshoe
KING WILLIAM COUNTY
HANOVER COUNTY
Wakema
Chericoke
Glimpses Corner
Eastern View
Lanesville
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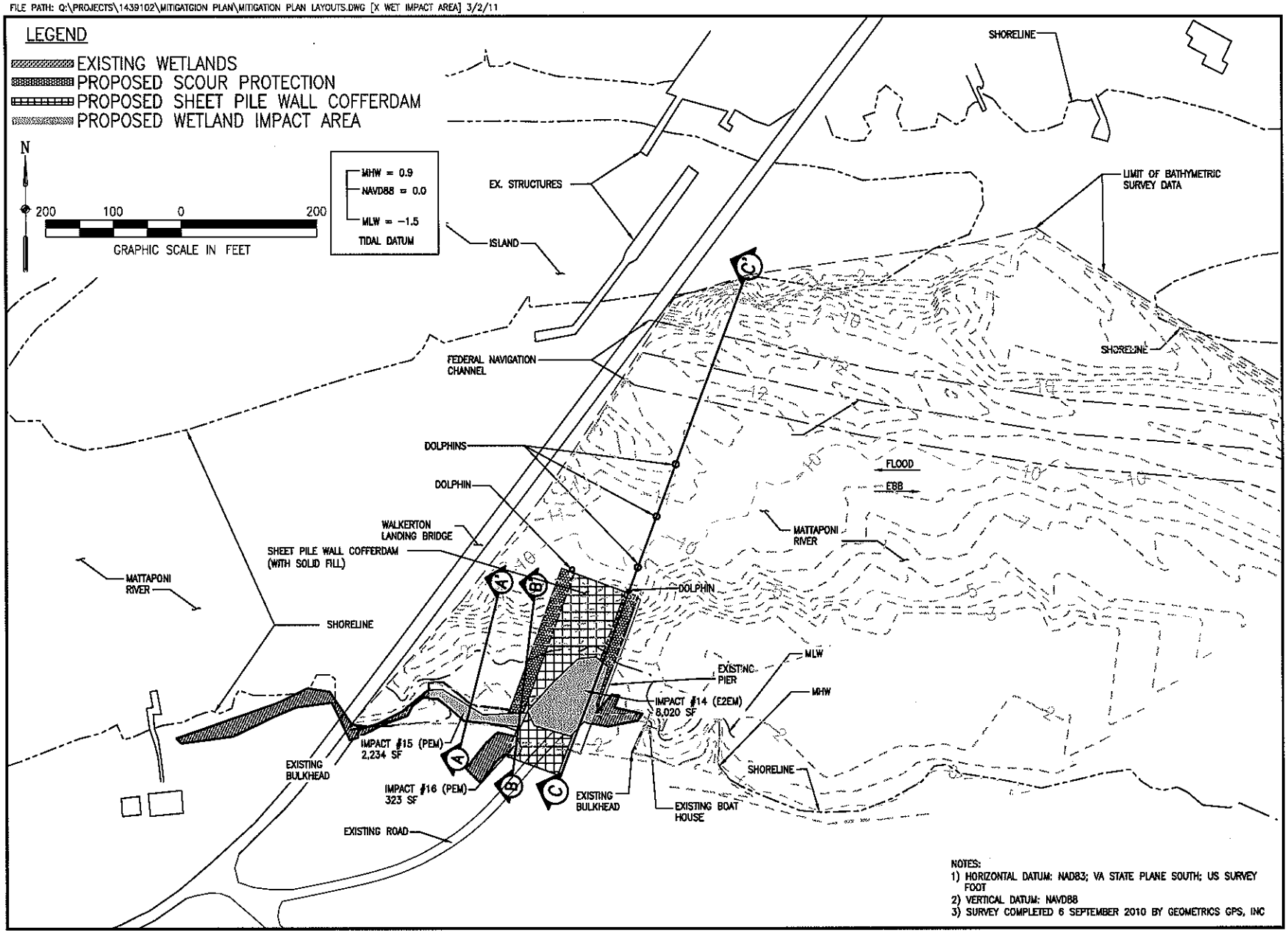

FIGURE 2: EXISTING CONDITIONS, AND WETLAND IMPACT AREA – LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

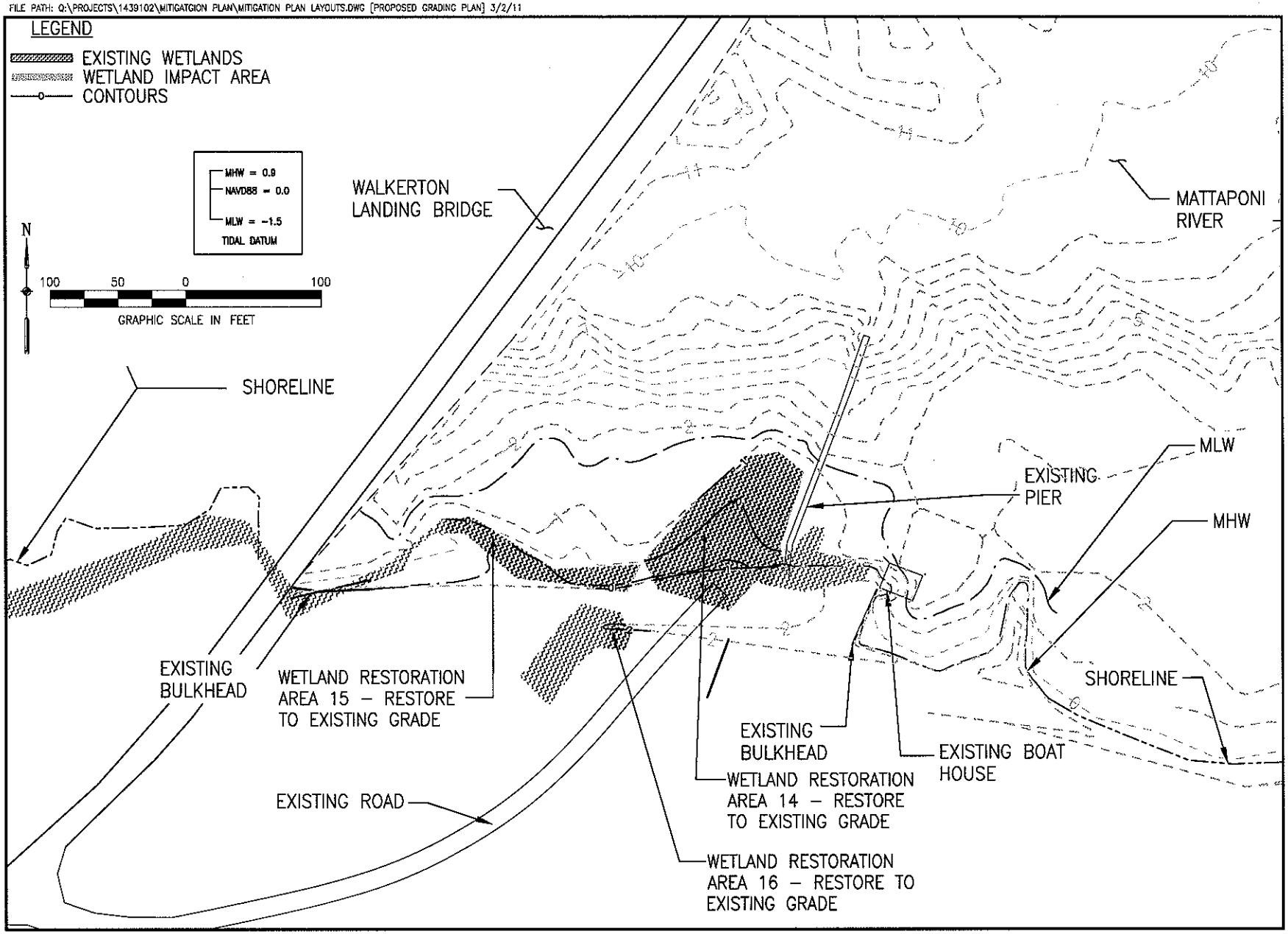

FIGURE 3: PROPOSED GRADING PLAN FOR WETLAND RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

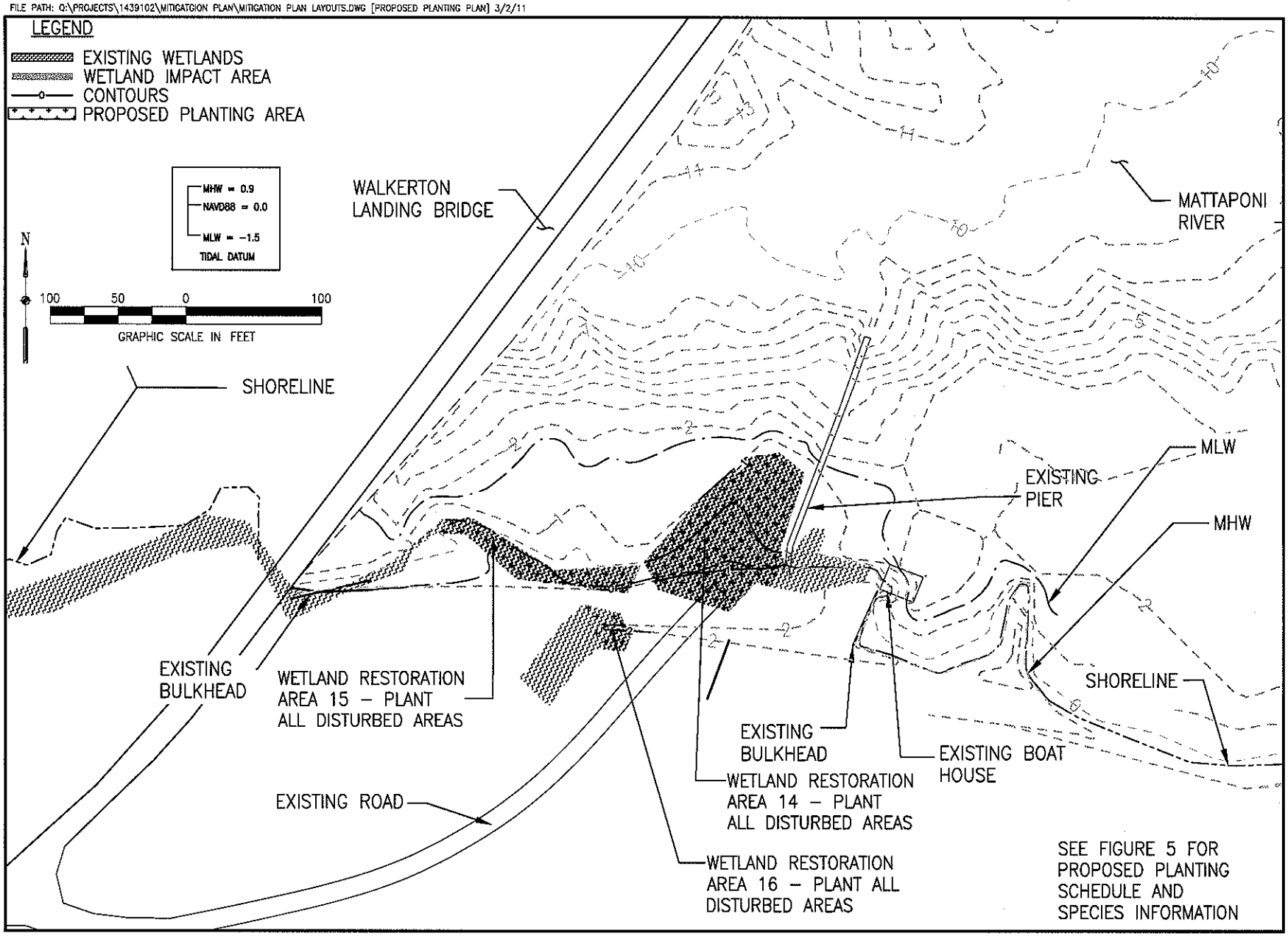

FIGURE 4: PROPOSED PLANTING PLAN FOR WETLAND RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY

Scientific Name	Common Name	Wetland Status	Tide Regime	Plant Material	Spacing (feet on center)
Wetland Impact Area 14 – Estuarine Intertidal Emergent (E2EM)					
Pontederia cordata	Pickerel weed	OBL	Intertidal	1 plug	2
Scirpus americanus	American three–square	OBL	Intertidal	1 plug	2
Scirpus cyperinus	Woolgrass	FACW	Intertidal	1 plug	2
Zizania aquatica	Wild rice	OBL	Intertidal	1 plug	2
Wetland Impact Area 15 – Palustrine Emergent (PEM)					
Juncus effusus	Soft rush	FACW	Non–Tidal	1 plug	2
Nuphar luteum	Pond lily	OBL	Non–Tidal	1 plug	2
Polygonum sagittatum	Arrow–leaf tearthumb	OBL	Non–Tidal	1 plug	2
Scirpus pungens	Three square bulrush	FACW	Non–Tidal	1 plug	2
Zizania aquatica	Wild rice	OBL	Non–Tidal	1 plug	2
Wetland Impact Area 16 – Palustrine Emergent (PEM)					
Acorus americanus	Sweetflag	OBL	Non–Tidal	1 plug	2
Asclepias incarnata	Swamp milkweed	OBL	Non–Tidal	1 plug	2
Carex lurida	Lurid sedge	OBL	Non–Tidal	1 plug	2
Dichanthelium clandestinum	Deertongue grass	FAC	Non–Tidal	1 plug	2
Hibiscus moscheutos	Swamp rosemallow	OBL	Non–Tidal	1 plug	2
Juncus effusus	Soft rush	FACW	Non–Tidal	1 plug	2

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR, PRIOR TO REMOVAL OF ANY OF THE ROLL–OFF FACILITIES, SHALL COORDINATE WITH THE SEDIMENT CONTROL INSPECTOR AND NOTIFY THE REGULATING AGENCIES PRIOR TO RE–DISTURBANCE OF THE SITE.
2. INSTALL ALL PERIMETER CONTROLS (SILT FENCE, TURBIDITY CURTAIN, STABILIZED CONSTRUCTION ENTRANCES) AS REQUIRED PRIOR TO SITE DISTURBANCE.
3. WORKING ON THE LANDWARD SIDE, THE CONTRACTOR SHALL REMOVE ALL SITE IMPROVEMENTS. STONE AND OTHER NON–SOIL MATERIALS SHALL BE REMOVED AND DIRECTLY TRANSPORTED TO AN APPROVED DISPOSAL SITE. MATERIALS SHALL NOT BE STOCKPILED ONSITE, NOR SHALL THE CONTRACTOR INTRUDE UPON AREAS OUTSIDE THE ORIGINAL LIMIT OF DISTURBANCE FOR THE SITE.
4. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR APPROXIMATE EXISTING GRADE FOLLOWING THE REMOVAL OF FACILITIES.
5. THE CONTRACTOR SHALL CHISEL PLOW ALL WETLAND RESTORATION AREAS TO A MINIMUM DEPTH OF 8" TO REMOVE SOIL COMPACTION. AT THIS TIME, AND REMAINING RUBBLE OR CONSTRUCTION DEBRIS SHALL BE RECOVERED BY HAND OR OTHER APPROVED MEANS TO LIMIT SITE COMPACTION.
6. THE CONTRACTOR SHALL HAND GRADE THE WETLAND RESTORATION AREAS AND APPLY A TEMPORARY SEED STABILIZATION MIX.
7. THE CONTRACTOR SHALL INSTALL PLANTINGS, THE TYPE AND SPACING AS IDENTIFIED ON THIS PLANTING SCHEDULE.
8. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE PERIMETER CONTROLS AND COFFERDAM.

FIGURE 5: PROPOSED WETLAND PLANTING SCHEDULE AND SEQUENCE OF CONSTRUCTION FOR WETLAND RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL–OFF FACILITY

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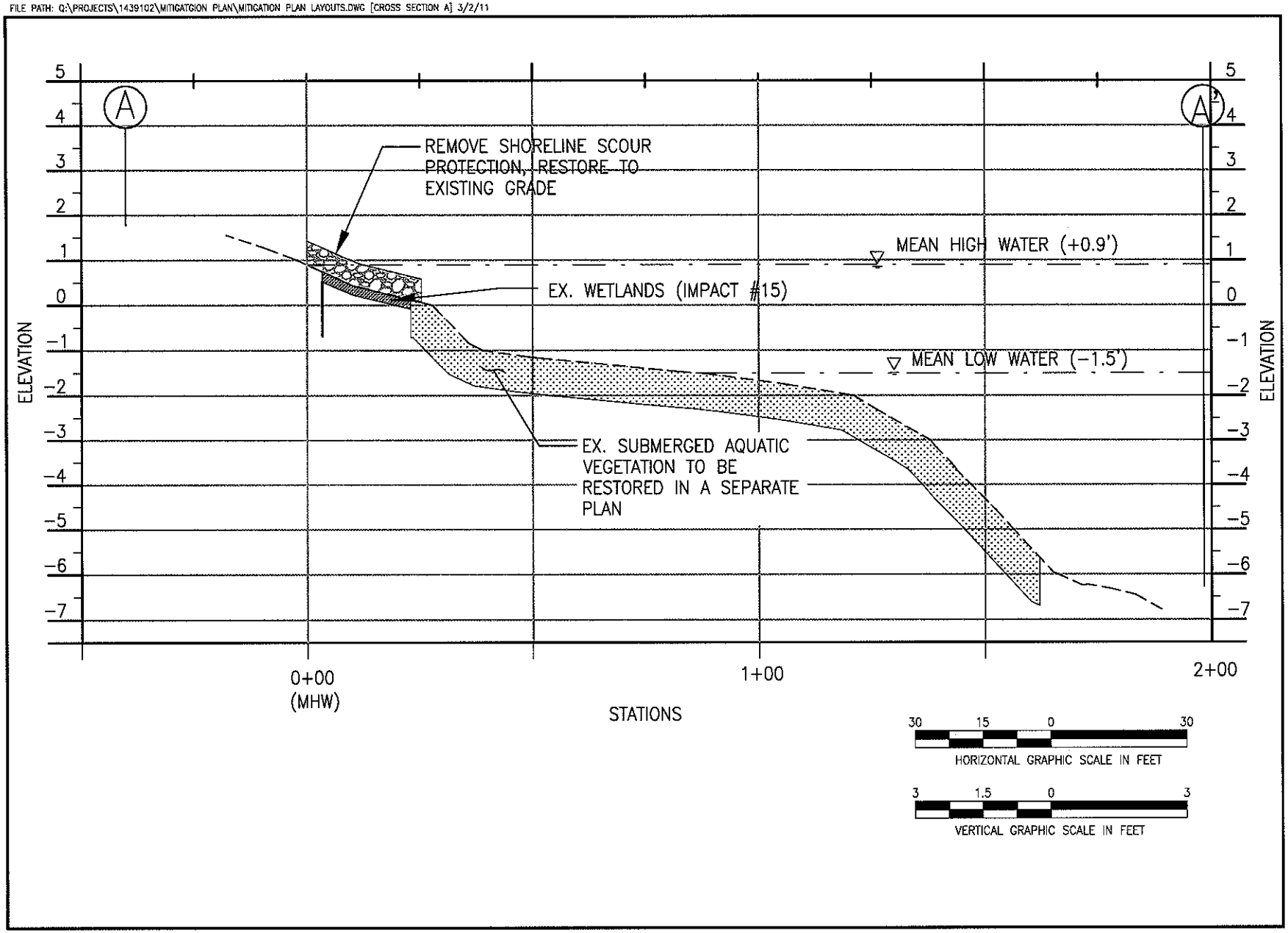

FIGURE 6: WETLAND RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY
CROSS SECTION A – A'

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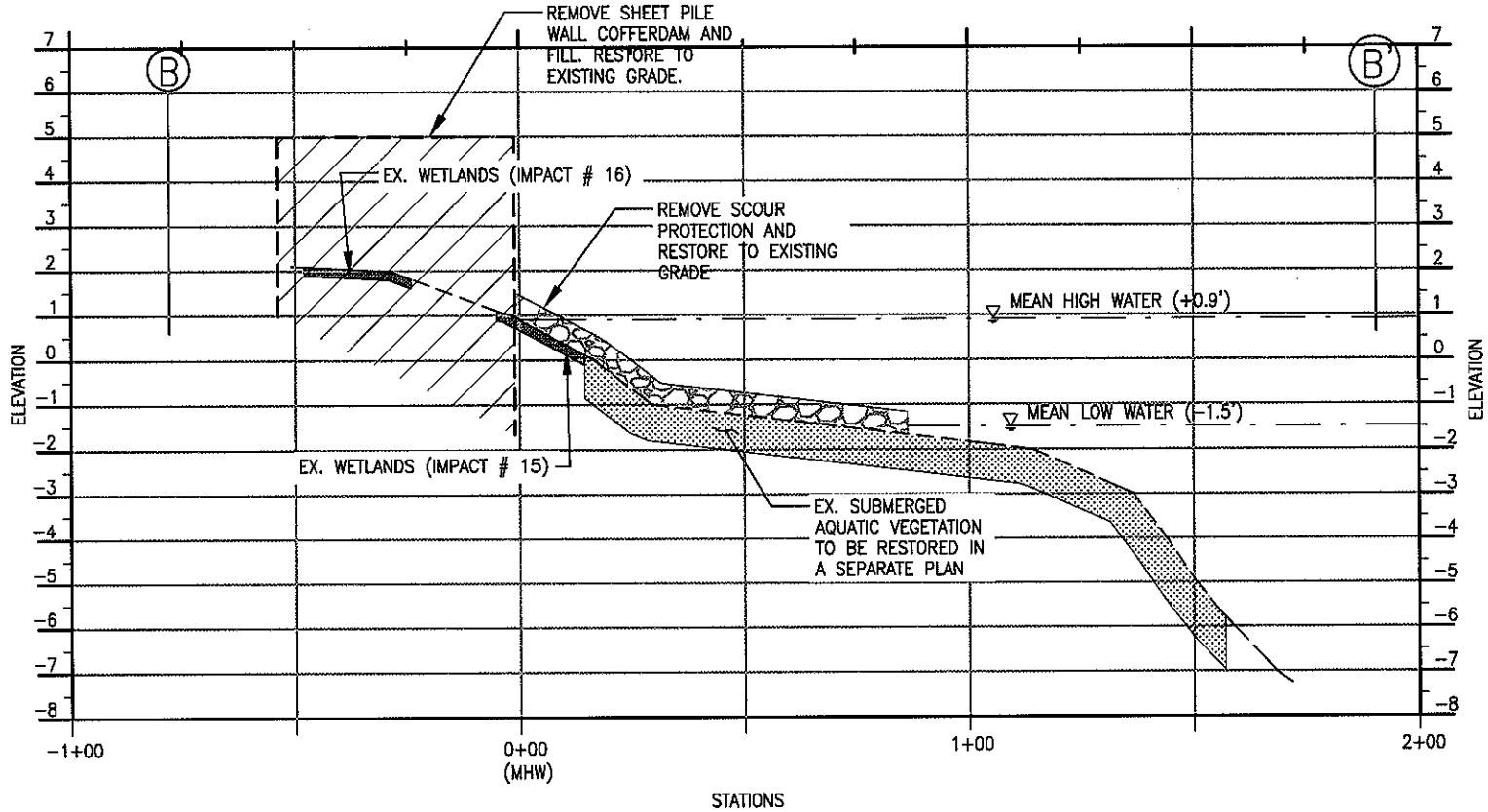

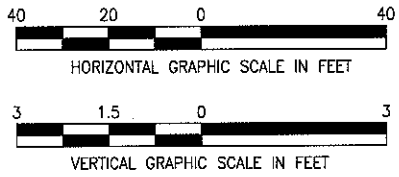

FIGURE 7: WETLAND RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY
CROSS SECTION B – B'

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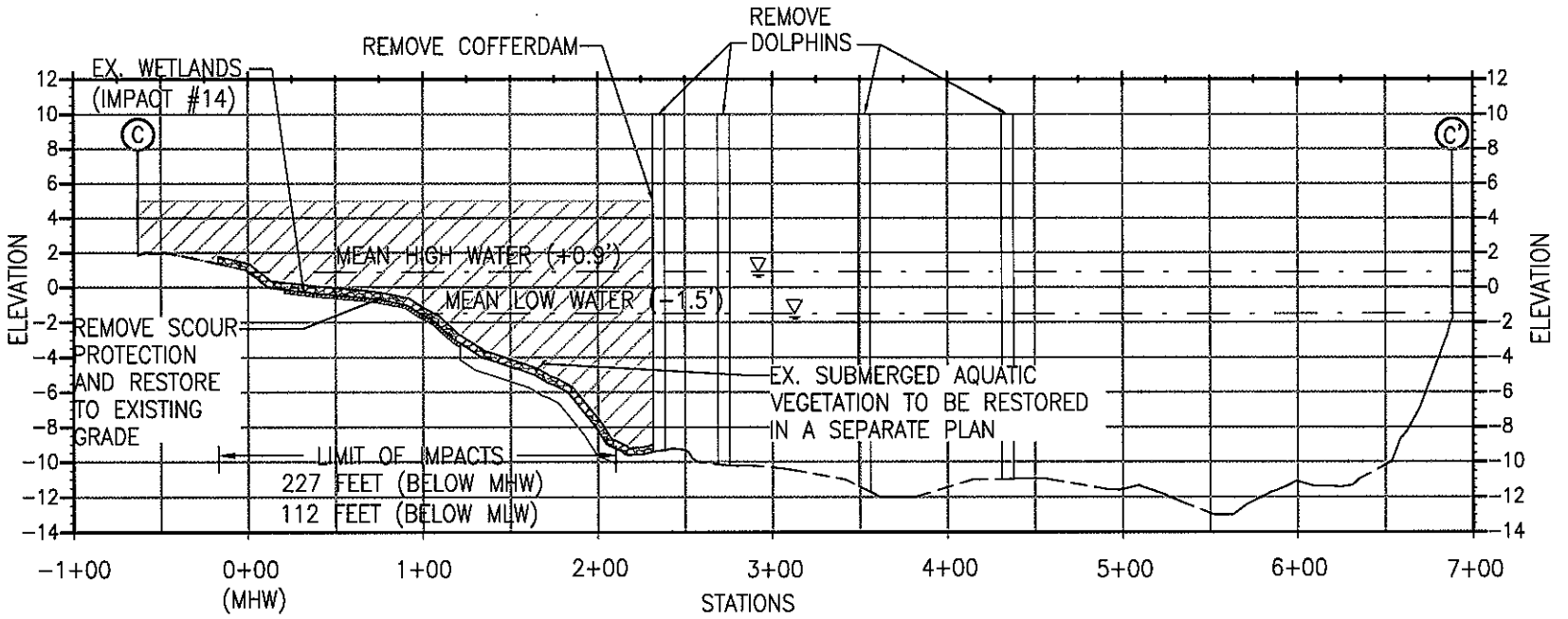


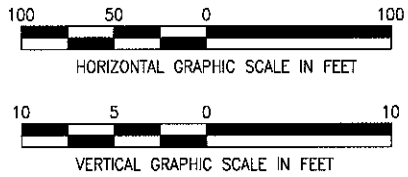
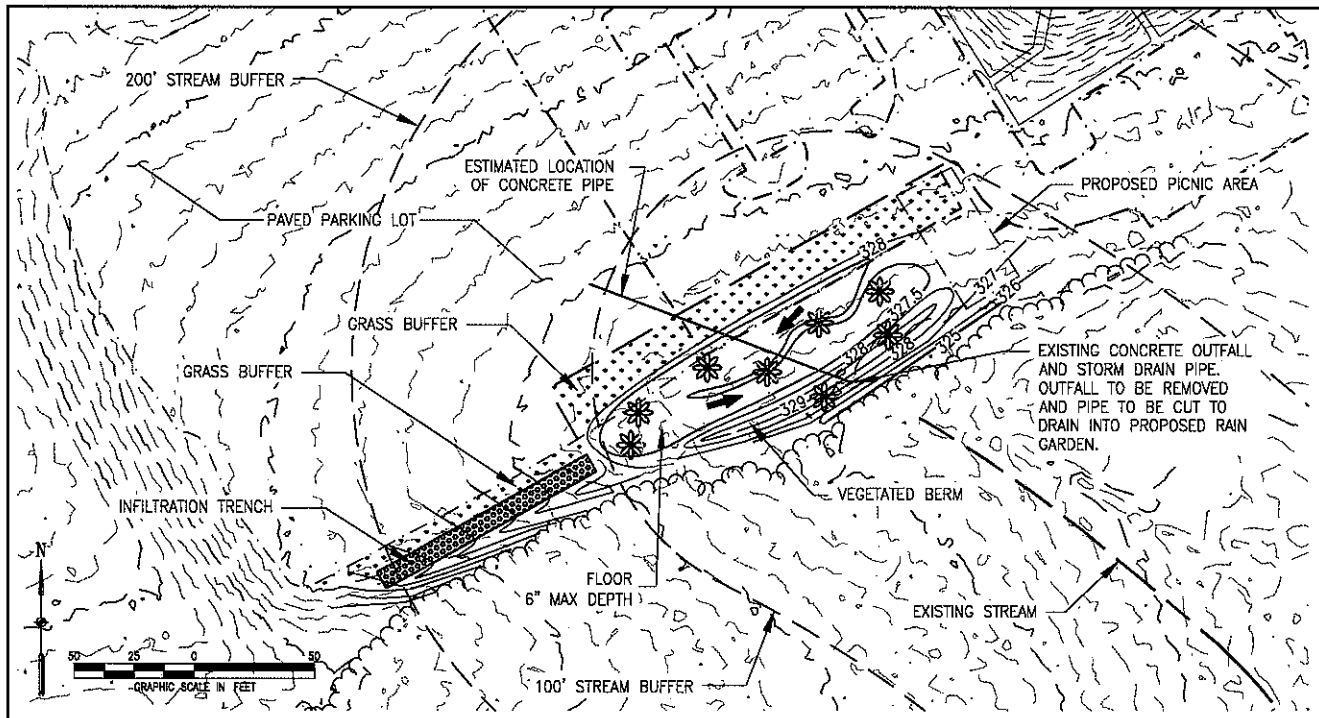


FIGURE 8: WETLAND RESTORATION PLAN, LARGE COMPONENT TRANSPORT ROUTE ROLL-OFF FACILITY
CROSS SECTION C – C'

Attachment C

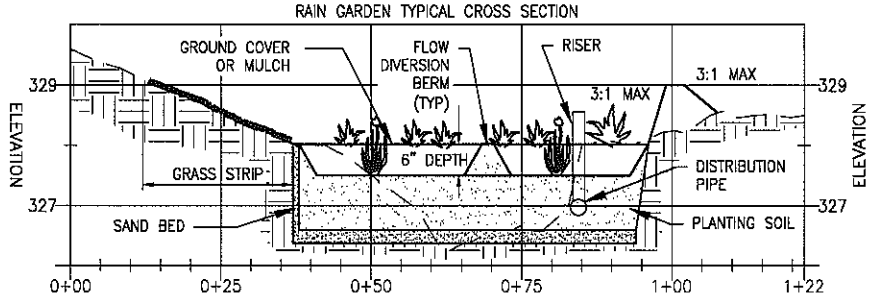
Rain Garden and Infiltration Trench

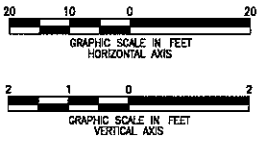


LEGEND

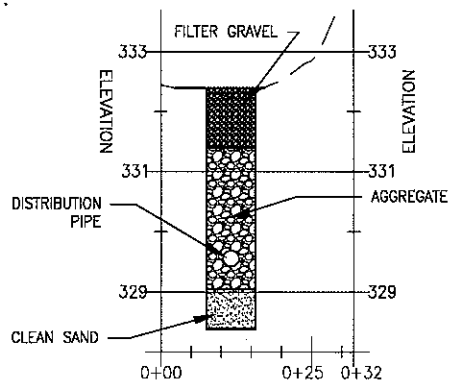
SYMBOL:	NAME:
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING BUILDING
	EXISTING TREELINE
	STREAM BUFFER
	EXISTING STREAM
	EDGE OF EXISTING PAVEMENT
325	PROPOSED MAJOR CONTOUR
329	PROPOSED MINOR CONTOUR
	PROPOSED BMP PRACTICE
	PROPOSED VEGETATION
	FLOW DIRECTION
	PROPOSED ASPHALT REMOVAL

RAIN GARDEN TYPICAL CROSS SECTION





INFILTRATION TRENCH TYPICAL CROSS SECTION



EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DESIGNED BY	DRAWN BY	DATE	PROJECT NO.
CJS/JJM	CJS/JJM	JUNE 2011	1439102
CHECKED BY	PROJECT MGR.	DRAWING NO.	FIGURE
JJM/CWL	BR	1	1

DOMINION NAPS
STREAM PRESERVATION
MINERAL, VIRGINIA

CONCEPTUAL RAIN GARDEN AND INFILTRATION TRENCH

FILE PATH: G:\PROJECTS\1439101\VALLEY DR_SWM\TOPO_JUNE.DWG [LAYOUT1] 6/6/11