Public Notice

U.S. Army Corps of Engineers Baltimore District

In Reply to Application Number NAB-2019-60851 (MD State Highway Administration/Woodfield Mitigation Bank)

PN-19-45 **Comment Period: July 18, 2019 to August 18, 2019**

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC CONCERNING THE PROPOSED PROSPECTUS FOR DEVELOPMENT OF A PRIVATE COMMERCIAL MITIGATION BANK AND THE POTENTIAL OF THE PROPOSED MITIGATION BANK TO PROVIDE APPROPRIATE COMPENSATORY MITIGATION FOR ACTIVITIES AUTHORIZED BY DEPARTMENT OF THE ARMY AND STATE OF MARYLAND PERMITS.

We are requesting comments to determine if approval should be granted for the proposed Woodfield Mitigation Bank for the purpose of providing compensatory mitigation for unavoidable aquatic resource impacts, including wetlands, authorized by Department of the Army and Maryland Department of the Environment permits. At this time, no decision has been made as to whether or not a permit will be issued, or whether the proposed Woodfield Mitigation Bank site will be approved under Maryland Department of Transportation State Highway Administration's (MDOT SHA) Umbrella Mitigation Banking Instrument (UMBI).

A complete application for work in waters of the United States or Waters of the State to construct the Woodfield Mitigation Bank site was received on May 9, 2019. The application indicates that there are waters of the United States or Waters of the State, including wetlands within the project area. These areas may be regulated pursuant to Section 404 of the Clean Water Act, the Maryland Nontidal Wetlands Protection Act, and the Maryland Waterway Construction Act, and the work described below may require Department of the Army and Maryland Department of the Environment authorization. A preliminary review indicates that the proposed work may qualify for U.S. Army Corps of Engineers authorization under Nationwide Permit (NWP) #27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities). NWP #27 has undergone a full public interest review as required by Corps regulations (33 CFR 320.4(a)), and NEPA documentation has been prepared that addresses environmental considerations.

A copy of the UMBI Woodfield Mitigation Bank– Mitigation Site Plan is available at: http://www.nab.usace.army.mil/Missions/Regulatory/PublicNotices.aspx, https://mde.maryland.gov/programs/Water/WetlandsandWaterways/Pages/Woodfield-Mitigation-Bank, and as an attachment to the electronic copy of this public notice. Those receiving a hard copy of this public notice who desire a copy of the proposed Mitigation Site Plan may either access the above website link or, may request a hard copy of the document by contacting Mr. Jack Dinne, Baltimore District, U.S. Army Corps of Engineers at 410.962.6005 (john.j.dinne@usace.army.mil) or Ms. Kelly Neff, Maryland Department of the Environment, Wetlands and Waterways Program at 410.537.4018 (kelly.neff@maryland.gov). The Mitigation Site Plan provides a summary of the information regarding the proposed mitigation banking instrument and the Woodfield Mitigation Bank site in accordance with the Department of Defense/Environmental Protection Agency Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230). Oversight of this mitigation bank will be undertaken by the Maryland Interagency Review Team (IRT), which is comprised of Federal and State regulatory and resource agencies.

The Baltimore District, U.S. Army Corps of Engineers serves as chair of the IRT, and the Maryland Department of the Environmental (MDE) as co-chair the IRT.

APPLICANT: Mr. Kevin Wilsey
Maryland Department of Transportation
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

WATERWAY AND LOCATION OF THE PROPOSED WORK: The Woodfield Mitigation Bank is located in Great Seneca Creek west of MD 124 (Woodfield Road), approximately 0.21 mile south of the Watkins Rd/MD 124 intersection, in Montgomery County, Maryland (39.233816 N, -77.180934 W).

BANK DESCRIPTION: The proposed Woodfield Mitigation Bank would provide compensatory mitigation for unavoidable wetland impacts for Maryland Department of Transportation, State Highway Administration (MDOT SHA) projects authorized by a Section 404 Clean Water Act permit, a Maryland Nontidal Wetlands Protection Act permit and/or a Maryland Waterways Construction Act permit. The mitigation bank would be used to comply with required special conditions for compensatory mitigation of permitted projects by providing in-kind compensation for authorized aquatic resource impacts. The Woodfield Wetland Creation was initially constructed by MDOT SHA in 2013 to provide wetland and stream mitigation credits as part of the mitigation for the MD 200 toll road (Intercounty Connector-ICC). However, due to avoidance and minimization for the MD 200 project, only 1.5 acres at the Woodfield site are needed as mitigation. The site is now being further restored by proposing a stream restoration on Great Seneca Creek and its tributary. Great Seneca Creek, a perennial tributary, with oxbows, and adjacent wetlands would be impacted by the proposed work. The perennial streams are classified by the State of Maryland as Use IP: Water Contact Recreation, and Protection of Aquatic Life, and the project is occurring in the Seneca Creek watershed.
The 2013 Woodfield Wetland Creation project and the proposed stream restoration project are comprised of approximately 5,279 linear feet of stream restoration, 21.84 acres of wetland creation, 3.46 acres of wetland enhancement, and 10.04 acres of wetland preservation within a 48.27 acre site owned by MDOT SHA and would have restricted covenants placed upon it following permit approval. The mitigation bank may only be used for future MDOT SHA projects after all appropriate and practicable steps to avoid and minimize adverse impacts to aquatic resources, including wetlands and streams, have been demonstrated.

The proposed geographic primary service area for the bank is the Middle Potomac-Catoctin Watershed (Federal 8 digit Hydrologic Unit Code (HUC) 02070008) and the secondary service area is the Piedmont ecoregion of the Monocacy watershed (HUC 020070009) and the Piedmont ecoregion of the Middle Potomac-Anacostia-Occoquan (HUC 02070010).

WORK REQUIRING DEPARTMENT OF THE ARMY AND MARYLAND DEPARTMENT OF THE ENVIRONMENT AUTHORIZATION: A preliminary jurisdictional determination has been requested for the proposed mitigation bank site. The proposed work may temporarily or permanently impact jurisdictional waters of the United States and Waters of the State, including wetlands, and may qualify for Corps authorization under Nationwide permit (NWP) #27 and an MDE authorization. The stream restoration project would permanently impact approximately 0.0004 acres (19 square feet) of emergent nontidal wetlands, 0.04 acres (1,858 square feet) of nontidal open water, 0.56 acres (24,032 square feet) of forested nontidal wetlands, and 0.05 acres (2,749 square feet) of 25-foot nontidal wetland buffer. The project would also temporarily impact 0.45 acres (19,878 square feet) of emergent nontidal wetlands, 0.03 acres (1,666 square feet) nontidal open water, and 9.27 acres (404,174 square feet) of forested nontidal wetlands, 0.45 acres (19,429 square feet) of 25-foot nontidal wetland buffer, and 13.47 acres

(587,035 square feet) of disturbance in the 100-year floodplain. Impacts to 4,442 linear feet (81,933 square feet) of perennial streams will be classified as temporary impacts for MDE and permanent impacts for the U.S. Army Corps of Engineers. Any impact to jurisdictional streams and/or wetlands must be approved by the U.S. Army Corps of Engineers and MDE prior to commencing any regulated construction activities.

The final umbrella mitigation banking instrument does not provide ultimate Department of the Army or MDE authorization for specific future projects impacting waters of the United States or Waters of the State; exclude such future projects from any applicable statutory or regulatory requirements; or preauthorize the use of credits from the bank for any particular project. The Corps and MDE provide no guarantee that any particular individual or general permit will be granted authorization to use this Mitigation Bank to compensate for unavoidable aquatic resource impacts associated with a proposed permit, even though compensatory mitigation may be available within the defined service area.

The decision whether to approve this mitigation bank and issue a permit for the impacts to waters of the United States will be based on an evaluation of the probable impacts including cumulative impacts of the proposed bank on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects, thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, and, in general, the needs and welfare of the people.

The application screening form indicates that the proposed work would not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act, as amended. As the evaluation of this proposal continues, additional information may become available which could modify this preliminary determination.

The application screening form indicates that the proposed work would not affect any cultural resources. Currently unknown archeological, scientific, prehistoric, or historical data may be lost or destroyed by the work to be accomplished under the requested permit for the mitigation bank construction. As the evaluation of this proposal continues, additional information may become available which could modify this preliminary determination.

The applicant must obtain any State or local government permits which may be required.

If you have any questions concerning this matter, or require a hardcopy of the Mitigation Site Plan, please contact Mr. Jack Dinne, Baltimore District, U.S. Army Corps of Engineers at 410.962.6005 (john.j.dinne@usace.army.mil) or Ms. Kelly Neff, Maryland Department of the Environment, Wetlands and Waterways Program at 410.537.4018 (kelly.neff@maryland.gov).

Requests to be included on the interested persons list must be sent by August 15, 2019 to the Maryland Department of the Environment, 1800 Washington Boulevard, Suite 430, Baltimore, Maryland 21230 or to kelly.neff@maryland.gov or 410-537-4018. Any further notices concerning actions on the application will be provided only by mail to those persons on the interested persons list. Please refer to Subsection 5-907 of the Annotated Code of Maryland or the Code of Maryland Regulations 26.23.02 for information regarding the application process.

Please forward this information to any interested parties.

WRITTEN COMMENTS: Written comments concerning the activity described above must be submitted directly to the District Engineer, U.S. Army Corps of Engineers, Baltimore District, CENAB-OP-RMN Attn: Mr. Jack Dinne, 2 Hopkins Plaza, Baltimore, Maryland, 21201 and/or Attn: Ms. Kelly Neff, Maryland Department of the Environment, 1800 Washington Boulevard, Suite 430, Baltimore, Maryland 21230-1708, or by email to john.j.dinne@usace.army.mil and/or kelly.neff@maryland.gov, within the comment period as specified above to receive consideration. This public notice is issued by the Chief, Regulatory Branch.

Umbrella Mitigation Banking Instrument
Addendum 3: SC-19 Mitigation Bank Draft Prospectus

Montgomery County, Maryland

Sponsor:

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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U.S. Army Corps of Engineers Baltimore District-Chair

Maryland Dept. of the Environment, Wetlands and Waterways Program-Co-Chair

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

National Marine Fisheries Service

Maryland Department of Natural Resources

Chesapeake Bay Critical Areas Commission

Maryland Historic Trust

February 2019

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Table 1 – Summary of Proposed Stream/Wetland Mitigation Bank Site SC-19	
Bank Sponsor and Property Owner:	MDOT SHA
Property Information	
Location	39°14'01" N, 77°10'53" W
Basin	Potomac River (02-07)
Sub-basin/Primary HUC Service Area	Middle Potomac-Catoctin (02-07-00-08)
Secondary HUC Service Areas	Monocacy (02-07-00-09) Middle Potomac-Anacostia-Occoquan (02-07-00-10) (Piedmont physiographic region only)
Drainage Area	8.900 Sq. Mi. (5,695.700 AC)
Mitigation Site Plan	
PFO Created Wetlands	1,060,470 SF (24.35 AC)
PEM Created Wetlands	24,199 SF (0.56 AC)
POW Created Wetlands	6,890 SF (0.16 AC)
PFO Wetland Enhancement	147,776 SF (3.39 AC)
PFO Wetland Preservation	417,194 SF (9.58 AC)
PEM Wetland Preservation	61,619 SF (1.41 AC)
Stream Restoration	5,009 LF
Wetland Mitigation Credits	
PFO Creation (1:1)	1,060,470 SF (24.35 AC)
PEM Creation (1:1)	24,199 SF (0.56 AC)
POW Creation (1:1)	6,890 SF (0.16 AC)
PFO Enhancement (4:1)	36,944 SF (0.85 AC)
PFO Preservation (10:1)	41,719 SF (0.96 AC)
PEM Preservation (10:1)	6,162 SF (0.14 AC)
Existing Wetland in PFO Creation (-1:1)	28,812 SF (0.66 AC)
Credit from ICC (-1:1)	65,340 SF (1.50 AC)
Total Wetland Credits	1,082,232 SF (24.86 AC)
Stream Mitigation Credits	
Great Seneca Creek Stream Restoration (1:1) - *Proposed*	3,003 LF
Tributary 1 Stream Restoration (1:1) - *Proposed*	1,173 LF
Oxbow (1:1) - *Proposed*	833 LF
Total Stream Credits	5,009 LF

1. Introduction

Maryland Department of Transportation (MDOT) State Highway Administration (SHA), the Bank Sponsor, proposes to establish the SC-19 Mitigation Bank within the Maryland State Highway Administration Umbrella Mitigation Banking Instrument (SHA-UMBI). The SC-19 Wetland Creation was initially constructed in 2013 to provide wetland mitigation credits, and stream enhancement through establishment of riparian plantings and live stakes. The site is being further restored to provide stream restoration of the mainstem and tributary 1 as the banks of the stream are laterally unstable. The Site is located in Montgomery County, Maryland, on Woodfield Road between Watkins Road and Rocky Road approximately 6 miles north of Gaithersburg, MD (Figure 1). The purpose of the SHA-UMBI is to provide compensatory mitigation for unavoidable impacts to streams and wetlands and their functions as a result of activities authorized under Section 401 and 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, Maryland Nontidal Wetlands Protection Act, and the Maryland Tidal Wetlands Act, and Department of Army Permits provided such activities have met all applicable requirements and are authorized by the appropriate agencies. The SC-19 Mitigation Bank Site is the Third Bank Site to be added to the SHA-UMBI.

2. Phasing

The SHA-UMBI has been submitted and approved by the Interagency Review Team (IRT). The Mitigation Site Plan (MSP) for the SC-19 Mitigation Bank Site will be attached as an addendum to the existing SHA-UMBI and the Site will be deemed a component of the SHA UMBI. Credits will be released consistent with the schedule of credit availability in accordance with the final MSP and the SHA-UMBI. Credits released for this Bank Site will be accounted for in the overall Bank ledger for the SHA-UMBI.

3. Mitigation Bank

a. Project Goals and Objectives

The SC-19 Wetland Creation Site was initially constructed in 2013 as part of the mitigation for the MD 200 toll road or “Intercounty Connector” (ICC). The goals for the SC-19 Wetland Creation Site were wetland creation, wetland preservation, wetland enhancement, riparian buffer establishment and stream enhancement. The stream enhancement included bank stabilization at debris removal locations, live stake establishment, and the riparian buffer establishment. Due to avoidance and minimization only 1.5 acres of wetland credits from SC-19 Wetland Creation Site are needed for the ICC (See Figure 2). The goal of the SC-19 Mitigation Bank Site is to provide a self-sustaining, functional wetland and stream to replace the functions and values lost from adverse impacts to streams and wetlands due to various permitted SHA projects within its defined Service Areas. The SC-19 Mitigation Bank Site stream restoration goals are to provide functional uplift for hydraulics and geomorphology, and to improve in-stream habitat, while maintaining and further enhancing the restored wetlands. The SC-19 Mitigation Bank Site also serves to provide advanced functional replacement of future functional losses due to unavoidable impacts and thus serves to eliminate temporal loss that results from alternative mitigation approaches.

Wetland creation/restoration, groundwater recharge, sediment and nutrient reductions, flood flow storage and reduction, riparian buffer enhancement, and wildlife enhancement functions have fully or partially resulted from the SC-19 Wetland Creation project in 2013, and additional sediment and nutrient reductions are anticipated from the SC-19 Mitigation Bank Site, based on improving the lateral stability extent from nonfunctioning to functioning. Additionally, stabilization of banks will sedimentation, improving wildlife habitats in the stream and floodplain. The aesthetic value of the site will also be improved by stabilizing the banks and channel braid. The site currently provides fish passage; therefore, no change is anticipated.

b. Site Selection/Background

The SC-19 Site, shown in Figure 1, was originally selected as a compensatory mitigation site for impacts associated with the ICC construction project approximately 7 miles away. The Site is owned by MDOT SHA. The SC-19 Wetland Creation was designed to supplement water quality, hydrological, and biological functions in the watershed impacted by the ICC. These functions included filtering sediments, pollutants, and excess nutrients, reducing erosion, discharging and recharging groundwater, flood storage, providing wildlife habitat, and furnishing organic matter to the aquatic food web. The SC-19 Site is located on former pasture land that was mowed and baled for hay ~3 times per year, riparian coverage was extremely limited, and reed canary grass was prominent along the stream edges for an approximate 25' width along most of the channel. Large (~5'x5') concrete debris rubble with exposed 1-inch rebar was in the stream along the banks in several meander bends. The SC-19 Site lies within the floodplain of Great Seneca Creek and is contiguous with additional floodplains, wetlands, and protected riparian areas on Montgomery County and MNCPPC owned properties downstream from the site. The site protects, improves, and significantly increases the wetland footprint in the area and provides functions including a large amount of flood storage; sediment, pollutant and nutrient attenuation and transformation; groundwater recharge and discharge; and wildlife habitat. The wetlands and stream bank stabilization were constructed at the site in 2013 as part of the SC-19 Wetland Creation. The SC-19 Mitigation Bank Site, which includes the proposed stream restoration, is currently in the design phase.

Currently, the ICC project requires, from SC-19 Wetland Creation Site, 1.5 acres of wetland credits for compensatory mitigation (See Figure 2). SHA intends to construct the stream restoration (SC-19 Mitigation Bank Site) with the intent to make the site a mitigation bank for both stream mitigation and remaining wetland credits (See Table 2). The Site was selected as a Bank due to its large size, location adjacent to Great Seneca Creek within a large floodplain, and for the high quality of the created wetland areas. The functions provided by the wetland system will help to offset losses from the future development in the region and provide water quality benefits for the current agricultural and low-density development within the large drainage area of Great Seneca Creek to the Site. The site also extends the protected riparian zone to the southern properties owned by Montgomery County and MNCPPC. The riparian zone then extends approximately 24 miles to the Potomac River. The extension of protected areas and expansion of floodplain connectivity will allow increased protection from erosion downstream and will provide additional wildlife corridor connectivity. The Long-Term Management of this site includes provisions for assessing stream physical health and stability, so actions can be taken to protect the Site's wetlands and improve stream quality.

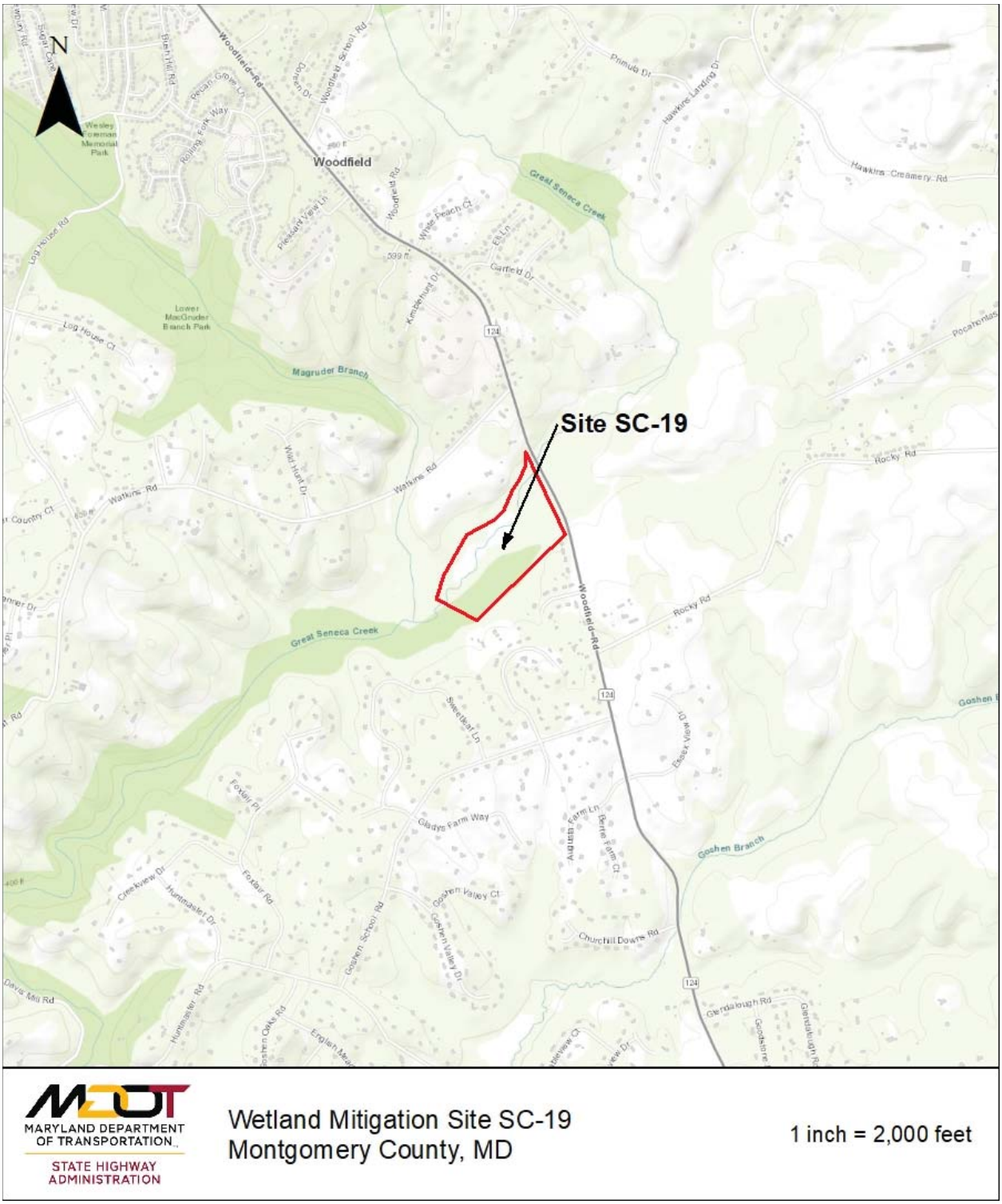
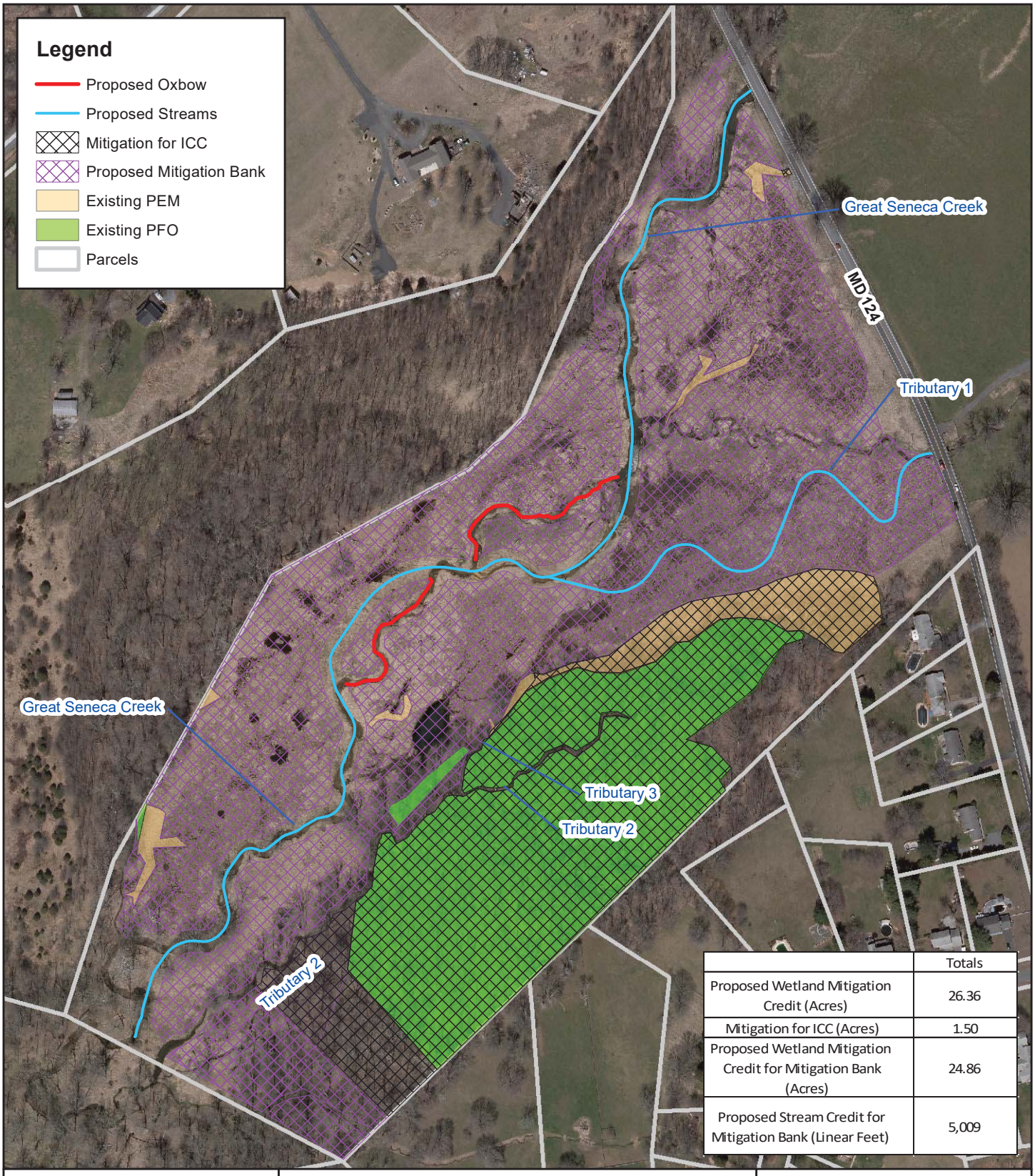


Figure 1 - SC-19 Site Location Map

Table 2 - Summary of SC-19 mitigation site proposed credits

Primary Service Area (HUC)	Middle Potomac-Catoctin (02-07-00-08)
Secondary Service Area (HUC)	Monocacy (02-07-00-08) Middle Potomac-Anacostia-Occoquan (02-07-00-10) (Piedmont physiographic region only)

SC-19 Wetlands	Habitat Type			Total
	PFO	PEM	POW	
Wetland Creation (AC)	24.35	0.56	0.16	25.07
Wetland Enhancement (AC)	3.39	0.00	0.00	3.39
Wetland Preservation (AC)	9.58	1.41	0.00	10.99
Total Wetlands (AC)	**37.32**	**1.97**	**0.16**	**39.45**
SC-19 Stream Restoration				
Great Seneca Creek (LF) - *Proposed*	3,003			
Tributary 1 (LF) - *Proposed*	1,173			
Oxbow (LF)	833			
Total Stream (LF)	**5,009**			
SC-19 Wetland Mitigation Credit	Habitat Type			Total
	PFO	PEM	POW	
Wetland Creation @ 1:1 (AC)	24.35	0.56	0.16	25.07
Wetland Enhancement @ 4:1 (AC)	0.85	0.00	0.00	0.85
Wetland Preservation @ 10:1 (AC)	0.96	0.14	0.00	1.10
Existing Wetland in Creation Areas (AC)	-0.18	-0.48	0.00	-0.66
Total Credit	**25.98**	**0.22**	**0.16**	**26.36**
SC-19 Stream Mitigation Credit				
Great Seneca Creek @ 1:1 (LF) - *Proposed*	3,003			
Tributary 1 @ 1:1 (LF) - *Proposed*	1,173			
Oxbow (LF) @ 1:1	833			
Total Credit	**5,009**			



	Totals
Proposed Wetland Mitigation Credit (Acres)	26.36
Mitigation for ICC (Acres)	1.50
Proposed Wetland Mitigation Credit for Mitigation Bank (Acres)	24.86
Proposed Stream Credit for Mitigation Bank (Linear Feet)	5,009

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Figure 2
SC-19 Mitigation Credit Location Map

N

1 inch = 300 feet

The SC-19 Site consists of approximately 48.27 acres gently sloping northeast to southwest from an elevation of 426 feet above mean sea level to 416 feet above mean sea level, respectively, over about 4,077 linear feet of great Seneca Creek with sinuous flow through a floodplain valley running along the 2,200 linear feet of property. The existing level floodplain topography was ideal for creating the hydrology necessary for wetland creation. The 2011 wetland delineation is provided in Appendix A: SC-19 Wetland Delineation Report.

Ground work in 2013 consisted of grading to increase flood frequency from Great Seneca Creek and Tributary 1 on the Site and to create microtopography. Other work included removal of invasive species, riparian reforestation, woody plantings and seeding of native wetland species to create forested wetland, lowering the stream banks of Great Seneca Creek to improve floodplain connectivity, installing stone toe boulder protection and encapsulated soil lifts, and addition of woody floodplain roughness features.

To enhance the riparian buffer and maintain stream bank stability concrete with exposed rebar and other debris was removed from the stream channel, and stone toe boulders were placed at the concrete removal locations. The banks were planted with live stakes. Following a severe storm event in 2015 there was an almost complete loss of live stakes in the stream bank. Live stake replanting occurred in late 2017.

The fifth year of post-construction wetland monitoring at the site was completed in 2018. The monitoring data collected indicates that the SC-19 wetland construction has achieved its project goals (See Appendix J) for wetland creation. During the wetland monitoring, the stream instability and its impact on the restored wetlands were discussed as a potential source for degrading wetland hydrology through lateral or vertical instabilities in the existing stream. As a result of the wetland monitoring and an IRT field meeting in 2017, MDOT SHA added stream restoration of Great Seneca Creek and Tributary 1 to the project.

In 2017, MDOT SHA met with agency representatives to discuss the monitoring and crediting for the SC-19 Wetland Creation Site. At this meeting the agencies expressed concern about the stream instability and the potential future impacts of these instabilities on the created wetlands. Based on these concerns, MDOT SHA is further enhancing the Site through proposed stream restoration. A pre-application meeting for the SC-19 Mitigation Bank Site was held at the SC-19 site on December 11, 2018 with the Maryland Department of the Environment, Maryland Department of Natural Resources, MDOT SHA, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Services, Coastal Resources Inc., and WBCM, to discuss the design approach and selected alternative. For specific concerns and discussions refer to the meeting minutes from those two meetings, which were provided to attendees.

Currently the design phase of the stream restoration at the site is underway. The SC-19 Stream Restoration and Wetland Mitigation Design Site plans are found in Appendix I, while the original 2013 Wetland Creation site construction plans are found in Appendix B: SC-19 2013 Wetland Creation Site plans, as a reference to show present day conditions. Site baseline information and an aerial view of the SC-19 Site can be found in Section III D. The Geographic Service Area, both Primary and Secondary, are in accordance with the SHA-UMBI. A Service Area Map illustrating the Primary Service Area for the SC-19 Mitigation Bank Site is included in Section III M.

c. Site Protection Instrument

MDOT SHA purchased the SC-19 Site property on July 5th, 2012 from Betty Brown Casey, Trustee of the Eugene B. Casey Foundation through settlement following initiation of eminent domain proceedings (Appendix C: SC-19 Agreed Inquisition). The property consists of 48.27 acres of land in the Seneca Creek drainage area within the Middle Potomac-Catoctin sub-basin. No restrictive covenants have been documented for this site. Upon approval as a banking site, SHA will establish covenants in consultation with the IRT and append them to this document (Appendix D: SC-19 Covenants and Restrictions).

d. Baseline Information

The SC-19 site restores wetland presence within a pastured floodplain likely to have hosted wetlands in the past due to the proximity to Great Seneca Creek, the flat grade, and existing wetlands near and within the site. Prior to colonial settlement, the SC-19 Site likely consisted of wet deciduous forest. The Soil Survey of Montgomery County, published in 2016, shows the SC-19 site as primarily in the Codorus soil series of hydric class C in the upstream portion near Woodfield road and the Hatboro soil series of hydric class B/D at the downstream western portion (See Figure 3). The Site is surrounded by narrow upland forests to the north and south and Woodfield Road to the east with low density residential and agricultural land use beyond. The creation of forested wetlands at SC-19 extends the existing riparian forest corridor that continues almost uninterrupted to the Potomac River approximately 24 miles downstream of SC-19 Site. The Sc-19 Wetland Creation site was previously designed to intercept groundwater and precipitation and to provide floodplain storage/interaction.

Following acquisition, in 2013 the Site was graded to improve connectivity with the stream and to create conditions for wetland hydrology and hydric soil development. The overall elevation was lowered with microtopography added. Remaining existing channels and tributaries were augmented with log outlet structures to reduce future headcutting and to improve water retention. Concrete, trash, and debris was removed throughout the site including within the stream. Stone toe boulders and soil-lifts were installed to provide bank stability in the concrete removal areas. Approximately 2,700 wetland tree saplings were planted in 2017 throughout the forested wetland creation area with additional wetland species seeding applied to include the wetland enhancement areas. Additionally, approximately 8,000 live stake planting occurred in the riparian zone to ensure additional stability to the stream.

An assessment of the stream functions post-wetland construction and pre-restoration for Great Seneca Creek and Tributary 1 was conducted in 2018 for the hydrology, hydraulics, geomorphology, physicochemical, and biology functions. These are summarized below and included in Appendix E: SC-19 Monitoring Performance Standards as the pre-restoration condition.

The hydrology of the mainstem of Great Seneca Creek is functioning-at-risk both before and after the wetland restoration project was completed. This is based on the percentage of impervious surface within the drainage area as well as several locations of concentrated flow.

Hydraulics of the mainstem at SC-19 were functioning-at-risk trending towards not functioning prior to the wetland restoration construction. This is based on the entrenchment ratio and bank height ratio as documented during the wetland monitoring. Geomorphic cross section data from

2018 indicate that post-wetland construction hydraulics are functioning based on the entrenchment and bank height ratios being improved by the Sc-19 Wetland Creation project. Tributary 1's hydraulics were virtually unchanged when compared to pre and post-wetland restoration, as the banks were only lowered in a few locations. Cross sections from 2012 and 2018 indicate the hydraulics of Tributary 1 are functioning-at-risk trending towards not functioning based on the bank height ratio and entrenchment ratio.

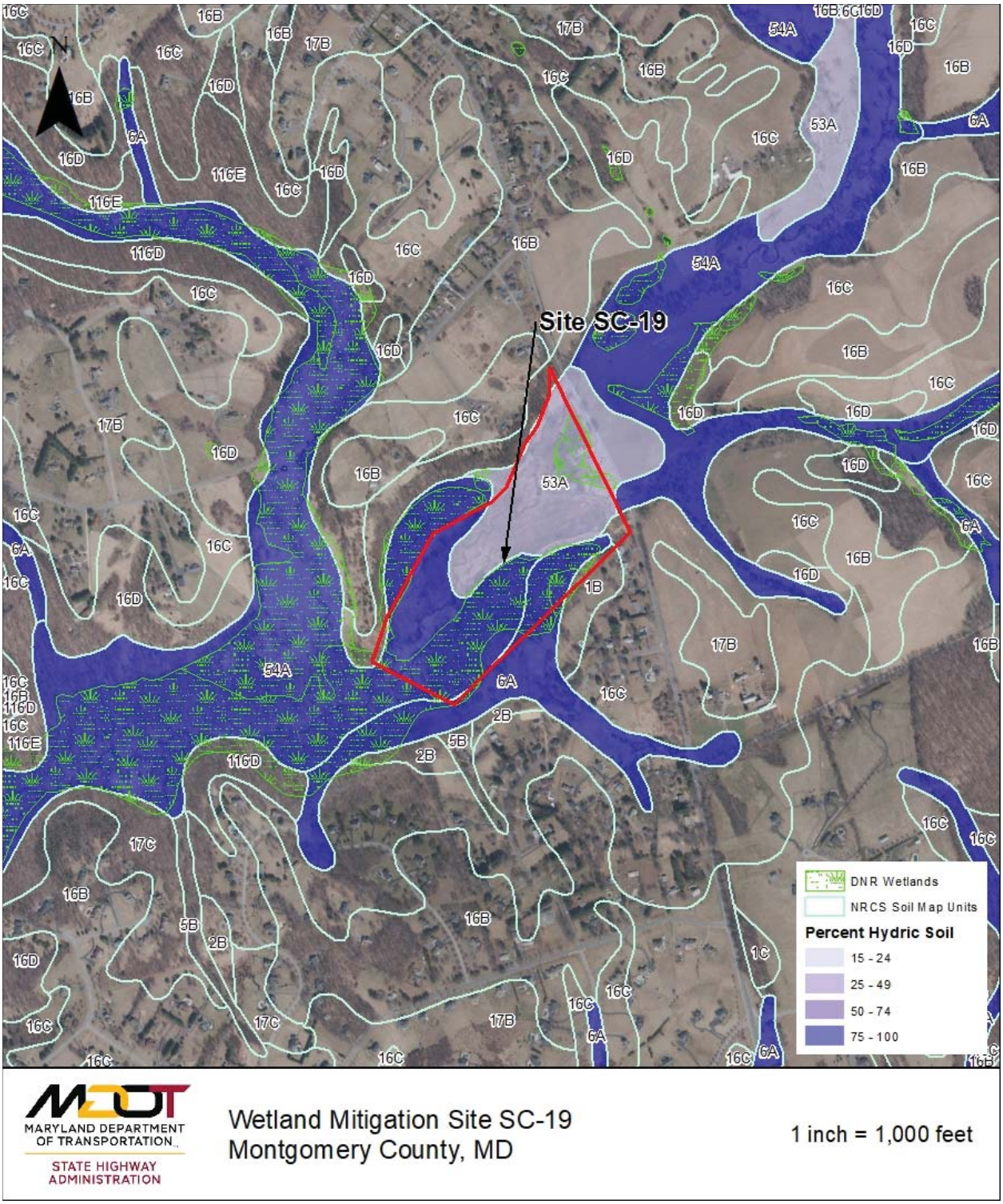


Figure 3 - SC-19 with DNR wetlands and NRCS soils

Geomorphology of the mainstem at SC-19 scored as not functioning both before and after the 2013 wetland creation construction based on a lateral stability score of not functioning. Geomorphology of Tributary 1 scored as not functioning both before and after the 2013 wetland creation based on not functioning pool to pool spacing as well as a not functioning dominant BEHI. The post-construction BEHI data was taken in 2018 and pre-construction BEHI data used survey contours and a modified method to conservatively summarize historic conditions. Geomorphology function was slightly improved in both Great Seneca Creek and Tributary 1 when comparing before and after wetland restoration conditions, due to an improved riparian buffer width; however, the overall geomorphology scores as not functioning for Great Seneca Creek and Tributary 1.

Physiochemical processes appear to be not functioning or functioning-at-risk in the mainstem, braid and Tributary 1 to Great Seneca Creek before and after the wetland restoration was completed. This is based on observed high turbidities at baseflow resulting in poor water clarity, cloudiness, and color. Upstream cattle grazing within the buffers of Great Seneca Creek and its Tributaries may have an impact on water clarity at the site. Performance standards for physiochemical uplift are not proposed; however, as an additional consideration the design increases biogeochemical process and interaction between the stream, floodplain and groundwater, and create diverse and diffusive flow paths with microtopography.

In-stream habitat creation is a project goal with no guarantee of functional uplift based on the watershed context. However, habitat features including enhanced riffles, highly oxygenated glides, wood components in riffles, toe wood/root wad features in pools are prominent in the stream design for the SC-19 Mitigation Bank Site, and benthic monitoring will be completed in Year-10 post-construction to provide additional data to develop a well-rounded evaluation of the functional uplift of the geomorph/habitat. The post-construction benthic macro sample results are not part of or held to any performance standards for this project. Pre-construction benthic sampling will be completed for the SC-19 Bank Site in Spring of 2019. This data will provide a baseline for comparing the post 2013 SC-19 Wetland Creation with the post SC-19 Mitigation Bank Site stream habitat conditions. No benthic was completed on-site by MDOT SHA prior to the 2013 SC-19 Wetland Creation construction.

Wildlife enhancements have been created because of the SC-19 Wetland Creation Site construction and they will be preserved in the stream restoration design and restored if impacted. These wildlife enhancements include pit and mound microtopography completed at multiple scales to provide diverse depths and sizes of habitat/water features on the floodplain. No specific species surveys were completed as part of the monitoring, but large and diverse numbers of amphibians and birds have been observed as well as river otter on the Site following the 2013 wetland construction. In addition to wildlife enhancement, the following wetland functions that did not exist or were very limited prior to 2013 have been created at the SC-19 site: groundwater recharge, sediment and nutrient reductions, flood flow storage and reduction, riparian buffer enhancement, and aesthetics. All of these functions will be preserved or further enhanced by the proposed SC-19 Mitigation Bank Site. Some functions may shift spatially due to the stream relocation and are anticipated to be replaced in-kind at the Site.

e. Determination of Credits

As per provisions proposed within the SHA-UMBI, credits for the SC-19 Mitigation Banks Site will be determined by area (acres) and wetland habitat type (PFO, PSS, PEM, etc.). Credits are proposed at a 1:1 ratio (1 ac. of required mitigation: 1 ac. of credit) for wetland creation, a 4:1

ratio for wetland enhancement, and a 10:1 ratio for wetland preservation. SC-19 proposes the following potential Bank credits: 25.98 ac. PFO, 0.22 ac. PEM, and 0.16 ac. POW. Wetland enhancement at the site resulted from the removal of invasive species and the planting of native woody wetland species. The cumulative total area of permitted wetland impacts allowed to use credits from the mitigation bank shall not exceed the total area of wetlands created and enhanced at this site. As noted previously, there are a total of 24.86 acres of potentially available mitigation credits at the SC-19 site after accounting for 1.50 acres of mitigation from the ICC (Figure 4 and Table 1). Wetland impacts during construction will be temporary impacts and will not affect the proposed credits. Wetlands will be improved by the stream restoration despite some temporary disturbance.

Additionally, 4,176 linear feet of stream restoration is proposed on Great Seneca Creek and Tributary 1. An oxbow will be created along 833 linear feet of stream on Great Seneca Creek. Stream restoration credits are proposed at 1:1 for a total of 5,009 linear feet.

SHA proposes that available credits can be withdrawn for future transportation projects requiring compensatory mitigation within the defined service areas and with approval of the IRT on a case-by-case basis.

f. Mitigation Work Plan

Since the SC-19 Wetland Creation is a Legacy site the 2013 wetland creation design is provided for reference in Appendix B: SC-19 2013 Wetland Creation Site Plans.

The concept design for the stream restoration for project is included in Appendix I: SC-19 Stream Restoration and Wetland Mitigation Design Site Plans. A pre-application meeting was held in December of 2018 to discuss three proposed design alternatives for the proposed stream restoration. The selected design alternative following the pre-application meeting includes restoration of Tributary 1 and the mainstem of Great Seneca Creek.

The mainstem restoration will include minor realignments, a proposed channel dimension of 12 to 20 square feet creating a sub-bankfull dimension to promote floodplain interaction, wetland hydrology, and wildlife enhancement. Regional curves predict a bankfull channel dimension of approximately 80 square feet. The proposed restoration will include installation of furnished channel material mixed with salvaged natural channel material for construction of riffle, glide and run features to provide functional vertical stability, bedform diversity, and enhance in-stream riffle habitats. Pools and eroding banks will be stabilized for lateral stability function by shifting or realigning the channel to improve radius of curvature, and by adding toe wood/root wad features. These woody features are anticipated to provide bank/toe protection and habitat as in-stream cover. The stream edge will be planted with live transplants, and soil lifts with woody planting are included to promote root mats in the stream, root penetration into the hyporheic zone, and shading over pools. Vanes will be utilized to reduce bank stress and maintain pool scour. Woody debris will be prominent in the stream channel for cover and carbon. Floodprone benches will be utilized where necessary to maintain the proposed range of channel dimensions, where the proposed channel dimension if too deep in relation to proposed channel invert and bank heights. Ox-bows are proposed in channel re-alignment locations to provide sediment storage, diffusive flow paths, and habitat.

The restoration of Tributary 1 will include re-aligning the stream to a lower valley position while maintaining or raising the channel invert to increase the groundwater elevation. This combination of realigning the stream to a lower part of the valley while maintaining or increasing the invert

elevation will be achieved by creating very low bank heights in the proposed channel that will closely match the existing floodplain elevation. In locations where the channel is more than 0.5' below the riffle invert, a floodprone bench is proposed. Riffle dimension range from 0.8 to 1.5 square feet to promote frequent interaction between the tributary and floodplain. Sediment transport through this baseflow channel is anticipated to be improved by increasing the channel slope despite the smaller cross sectional area. Furthermore, erosion from banks at the Site will be eliminated as a sediment source.

Riparian buffer plantings are proposed for any disturbed areas to meet or exceed current performance standards. Supplemental plantings needed to meet performance standards for areas outside the LOD will also be evaluated and included in the proposed planting plan for the SC-19 Mitigation Bank Site. Invasive Species will continue to be monitored and the contract may include specification for needed treatments if a maintenance contract is not in place at the time of construction.

g. Maintenance Work Plan

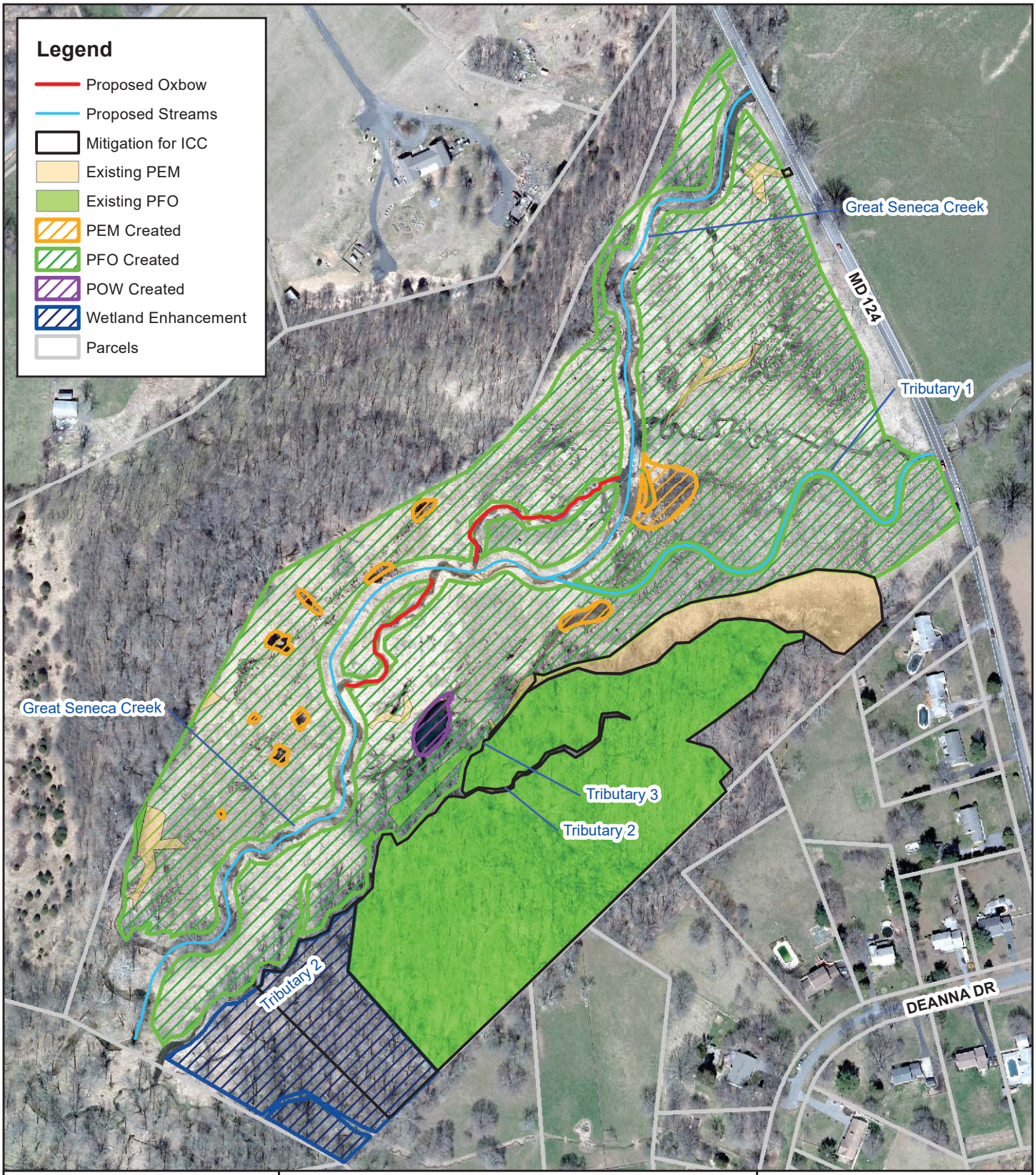
The Maintenance Work Plan will require Site visits for 10 years to observe conditions and ensure the continued viability of the resource once initial construction is complete. See Appendix H for the maintenance and monitoring cost estimate. Observations and maintenance will include but are not limited to:

- Condition of Site boundary and maintenance of boundary demarcation and signage.
- Condition of Site vegetation, survival rates, and management of invasive species.
- Woody vegetation survival and tree density.
- Condition of stream banks and stability assessment.

h. Performance Standards

The Mitigation Bank Site requires no special deviation from the April 20, 2018 revision to the performance standards as set forth within the SHA UMBI. In accordance with those Standards, sites shall conform to those performance standards by the end of the monitoring period.

The fifth year of post-construction wetland monitoring for the Sc-19 Wetland Creation Site was completed in 2018. The monitoring indicates that the SC-19 Wetland Creation Site has achieved its goals for wetlands. The current SC-19 Mitigation Bank Site is being designed to minimize the impacts to the existing created wetlands. MDOT SHA anticipates areas where monitoring has determined wetland creation to be successful, and that are outside of the proposed LOD, will potentially meet the performance standards at the time of approval, and be subject to the appropriate level of credit release.



MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Figure 4
SC-19 Crediting Zones

N

1 inch = 300 feet

Performance Standards for the stream restoration are not addressed in the SHA-UMBI and are included in Appendix E: SC-19 Monitoring Performance Standards as the function-based assessment tables. The function-based assessment tables show the pre-restoration condition and proposed condition of Great Seneca Creek and Tributary 1 based on *A Function Based Framework for Stream Assessment and Restoration Projects* (Starr 2013). The proposed improvements include improvements to maintain or improve the functional uplift rating for the hydraulics and geomorphology parameters. In-stream habitat creation is a project goal with no guarantee of functional uplift based on the watershed context. However, habitat features including enhanced riffles and glides, wood features in riffles, toe wood/root wad features in pools are prominent in the stream design for the SC-19 Bank Site, and benthic monitoring will be completed in Year-10 post-construction to provide additional data to develop a well-rounded evaluation of the functional uplift of the geomorph/habitat. The post-construction benthic macro sample results are not part of or held to any performance standards for this project. Floodplain habitats have been created because of the 2013 SC-19 Wetland Creation Site construction and they will be preserved in the stream restoration design and restored if impacted. The specific uplift parameter and associated performance standard for the stream restoration are provided in tabular format in Appendix E.

i. Monitoring Requirements

The SC-19 site has been monitored for 5 years, from 2014-2018 (See Appendix I: Year 5 Monitoring Report). Wetlands at the site will be monitored under the revised 2018 monitoring protocols as set forth in the SHA-UMBI to assess the accepted non-tidal wetlands performance standards.

Monitoring will proceed for 5 or 10 years, depending on the design and the outcome of the project, as required by the SHA-UMBI. Monitoring for wetlands and streams is generally **10 years, with the potential to be released after 5 years, if final year performance standards are met for 2 consecutive monitoring reports.** The site will defer to the Maintenance Work Plan until all credits have been used and the Bank is closed. At such time of Bank closure, the site will be subject to the provisions of the Long Term Management and Maintenance Plan (Appendix G: SC-19 Long Term Management Plan).

Stream restoration performance standards and the monitoring plan are included Appendix E: SC-19 Monitoring Performance Standards. The stream restoration and monitoring will be performed on the same schedule as the wetland monitoring and results will be included in the monitoring reports.

The stream restoration monitoring of the project will include a comparison of the pre- and post-restoration conditions to assess the project's success. No performance standards are proposed for hydrology based on the project scale and watershed context; however, flood flow alteration is a wetland function that has been created at the Site from the SC-19 Wetland Creation construction and may provide a hydrologic benefit for downstream receiving waters. Physicochemical uplift is not proposed to be monitored; however, physicochemical enhancement at the site is implicit based on the more frequent out of bank flood events from the bank lowering in the SC-19 Wetland Creation construction that created interaction between the floodplain and stream. This interaction

between stream and floodplain will be further enhanced by the stream restoration. In addition, physicochemical uplift is presumed to be occurring because of the diverse and diffusive flow paths created by the pit and mound microtopography features on the floodplain and layers of intact organic material collecting in floodplain sediment deposits.

The hydraulics and geomorphology categories will be monitored based on the measurement methods displayed in the monitoring plan (See Appendix E: SC-19 Monitoring Performance Standards). Specific parameters, the associated performance standard, and the proposed measurement technique are indicated in the monitoring table. Bedform diversity features that mimic reference stream conditions and habitat features, such as pool to pool spacing, pool depth variability and percent riffle have been selected as measurable parameters to promote biological uplift for fish and macroinvertebrates.

In-stream biological enhancement is a project goal, but there is no guarantee of biological uplift. Specific stream design features to further promote biology include: highly oxygenated glides, enhanced riffles that include small and large wood pieces, toe wood/rootwad cover in pools, live tree transplants at the stream edge to provide live root mats, vanes to maintain pool scour, and overhanging vegetation for shading. Benthic macroinvertebrate sampling will be completed in Year-10 for informational purposes since there is no guarantee of biological uplift based on the watershed context.

j. Long Term Management and Maintenance Plan

The SC-19 Mitigation Bank Site requires no special deviation from the Long Term Management and Maintenance Plan set forth within the SHA-UMBI. (See Appendix G: SC-19 Long Term Management Plan).

k. Adaptive Management Plan

See SHA-UMBI for information related to the adaptive management plan. Any site issues beyond normal maintenance found through the implementation of the Maintenance Work Plan and subsequent Long-term Management Plan will be noted and brought to the attention of the IRT for consultation and determination of any remedial action, if deemed necessary.

l. Financial Assurances

As set forth in the SHA UMBI and the Financial Assurance letter provided therein, SHA is financially committed to its mitigation program and the management, monitoring, and maintenance required for maintaining viable, functioning wetlands. SHA will provide the necessary funds to carry out the SC-19 Stream Restoration and Wetland Mitigation Design Site Plans, Maintenance Work Plan and subsequent Long-Term Management and Maintenance Plan for the SC-19 Mitigation Bank Site. These funds include anticipated site management needs such as annual site visits, invasive species treatments, site boundary maintenance, and consulting and contractual services associated with the site assessments and site management. Should any substantial maintenance issue develop, or a catastrophic event occur, SHA will allocate funds from the Transportation Trust Fund to perform the maintenance/remediation activity. The cost/budget estimate is shown in Appendix H: SC-19 Cost/Budget Estimate.

m. Service Area

The SC-19 Mitigation Bank Site's primary service area is the Middle Potomac-Catoctin (8-digit HUC 02-07-00-08) in accordance with the SHA-UMBI. This HUC encompasses the southwestern

portion of Montgomery County and the Catoctin watershed in Frederick County. (See Figure 5). Major Maryland drainages within the Middle Potomac-Catoctin HUC include: Seneca Creek, Catoctin Creek, Cabin John Creek, Rock Run, Broad Run, Watts Branch, Sandy Branch, Muddy Branch, and Horsepen Branch. The SC-19 Site is located within Montgomery County in the Seneca Creek watershed.

The proposed secondary service areas for the SC-19 Mitigation Bank Site are those portions of the adjacent 8-digit HUC within the same river basin, Middle Potomac-Anacostia-Occoquan (02-07-00-10) and Monocacy (02-07-00-08), and within the same physiographic province as the Primary Service Area, i.e., the Piedmont Plateau. Utilization of the adjacent HUCs within the Potomac River Basin as secondary service areas is in accordance with the SHA-UMBI. The impacts within the secondary HUCs can be reasonably mitigated at the Bank to provide functional replacement and water quality benefits within the same river basin. No banks currently exist within the proposed secondary service areas of the SC-19 site.

n. Credit Release Schedule

The proposed credit release schedule combines the Nontidal Wetland Credit Release Schedule in the approved UMBI, with an accelerated schedule, as SC-19's 2013 Wetland Creation is a legacy site having been completed prior to the acceptance of this addendum. Comparing site conditions to the Performance Standards, MDOT SHA anticipates wetland areas that are outside of the proposed LOD of the proposed wetland and stream restoration, will be found acceptable for the habitat types supplied in this Addendum and as summarized in Table 1.

The schedule proposes an immediate release of the 2013 SC-19 Wetland Creation credits (those created at SC-19 Site but not impacted by the proposed stream restoration for the SC-19 Mitigation Bank Site) following the acceptance of this addendum with the final Mitigation Site Plan, implementation of Financial Assurances, recordation of the approved site protection mechanism, and the approval of the Long-Term Management Plan. The stream restoration and wetland creation/enhancement credits will be released over a ten-year schedule as outlined in Table 2, with the potential to be released after 5 years, if final year performance standards are met for 2 consecutive monitoring reports.

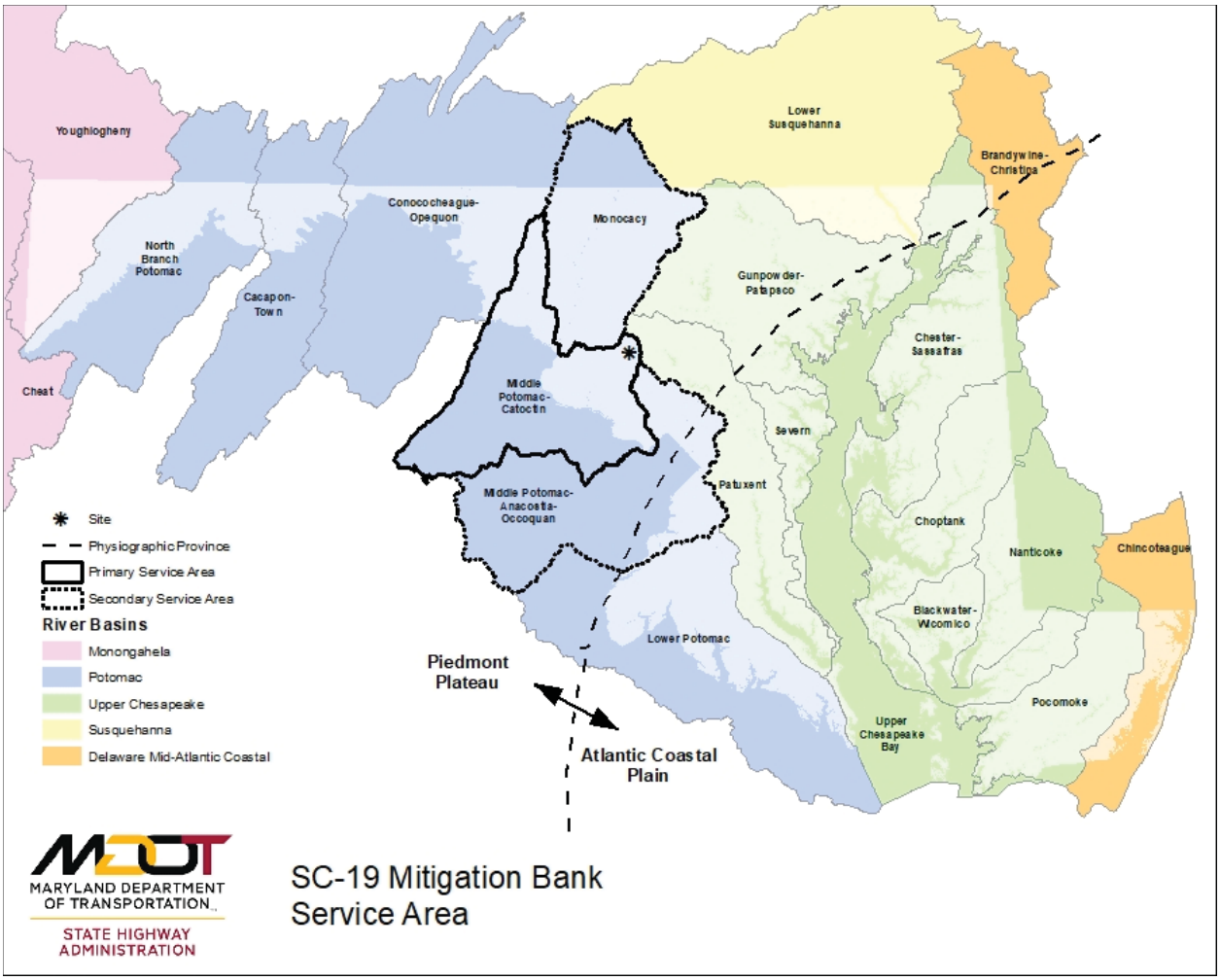


Figure 5 - SC-19 proposed geographic service area

Table 3 - SC-19 credit release schedule

Stage	2013 SC-19 Wetland Creation (Outside SC-19 Bank Site LOD)*	SC-19 Bank Site proposed wetlands and stream restoration
At MBI and LTM approval and recordation of C&R	15%	15%
Completed construction and As-Builts	15%	15%
Year 2 Performance Standards met	20%	20%
Year 3 Performance Standards met	10%	10%
Year 5 Performance Standards met	15%	15%
Year 7 Performance Standards met	10%	10%
Year 10 Performance Standards met	15%	15%
Total	100%	100%
* 2013 SC-19 Wetland Creation (Outside SC-19 Bank Site LOD) may meet and advanced performance standard and shall receive the appropriate credit release.		

APPENDIX A – SC-19 WETLAND DELINEATION REPORT

MARYLAND STATE HIGHWAY ADMINISTRATION &
MARYLAND TRANSPORTATION AUTHORITY
INTERCOUNTY CONNECTOR

COMPENSATORY MITIGATION PROJECT
SC-19

WETLAND DELINEATION REPORT

SHA Contract Number AX3785P60

November 2011

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Introduction

Intercounty Connector (ICC) Compensatory Mitigation Contract SC-B (Project Site SC-19) is a proposed wetland creation project designed to offset unavoidable impacts associated with construction of the ICC. The potential wetland creation area lies within a 50-acre parcel purchased by the Maryland State Highway Administration (SHA) within the floodplain of Great Seneca Creek. The site lies west of Woodfield Road and just south of Watkins Road on either side of Great Seneca Creek, in Montgomery County (**Attachment 1**). In addition to the nearly 21 acres of former hay fields that are proposed for wetland creation and riparian buffer enhancement, the site contains an approximately 12 acres of mostly forested wetlands along the southern boundary. This existing wetland system will be preserved as part of the mitigation provided by the site. This report details the wetland at the entire site area proposed for wetland creation as well as the large existing forested and emergent wetland system and the many functions and values provided by this system.

Site Description

Topography

The overall topography within the managed floodplain appears to be relatively flat, but with a general slope running with the slope of Great Seneca Creek, from east to west. The floodplain slope also tends to slightly dip away from the stream due to the presence of subtle berms located along the channel. Many shallow topographic depressions also exist within this portion of the floodplain.

Soils

The majority of the site contains hydric soils, according to Natural Resource Conservation Service (NRCS) Soil Data for Montgomery County. The soils series within the project area are listed in **Table 1** below and illustrated on **Attachment 2**).

Table 1: Mapped Soils within SC-19

Map Symbol	Map Unit Name	Hydric Soil (Y/N)
Montgomery County Soils		
	Codorus silt loam,	N
	Baile silt loam,	Y
	Hatboro silt loam,	Y

The site is largely Codorus and Hatboro silt loams, which form in alluvial materials on the floodplain. Codorus soils are deep, moderately well and somewhat poorly drained soils with a moderately high hydraulic conductivity. Hatboro soils are poorly drained with saturated hydraulic conductivity ranging from moderately low to moderately high. Both of these soils are included in the National Hydric Soils List.

Floodplain

As shown on FEMA Map Panel Numbers 24031C0180D and 24031C0185D, the majority of the project study area falls within the 100-year floodplain for Great Seneca Creek (**Attachment 3**).

Methodology

The site was field investigated in November of 2006 and again in October 2011 to identify and flag the boundaries wetlands within the project area. Wetland boundaries were flagged with pink wetland delineation survey ribbon labeled consecutively with an alphanumeric designation. Each wetland flag was then surveyed using a Trimble Global Position System (GPS). Watercourse were not delineated or surveyed using a GPS, as they are being traditionally surveyed and mapping will be updated accordingly. The locations of the identified wetlands and the approximate locations of the identified watercourses are shown on the detailed mapping provided in **Attachment 4**.

Prior to the field investigation, possible wetland areas were located using the United States Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps and the Maryland Department of Natural Resources (MDNR) wetland maps (**Attachment 5**) and the Soil Survey Report for Montgomery County, Maryland (Attachment 2). According to the NWI and MDNR mapping, the entire SC-19 project site consisted at one time of palustrine emergent (PEM), palustrine scrub/shrub (PSS), and palustrine forested (PFO) wetlands.

Wetlands were identified in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (United States Army Corps of Engineers July 2010). These approaches are based on three parameters including hydrology, hydric soils, and hydrophytic vegetation. Soil color was identified using a Munsell Color chart (Munsell 2000). Each wetland was photo documented and the photos are provided in **Attachment 6**. Field data sheets are provided in **Attachment 7.**

All identified waters of the U.S., including wetlands, were classified according to *A Classification of Wetland and Deep-Water Habitats in the United States* (Cowardin et al.1979). The wetland indicator status of the observed vegetation was identified using the *National List of Plant Species That Occur in Wetlands: Region 1 – Northeast* (USFWS 1988).

A functions and values assessment, using the New England Method, was completed for any delineated wetland greater than one half acre in size. For these wetlands, the functions and values were recorded on a Wetland Function-Value Evaluation Form (**Attachment 8**). A formal functions and values analysis was not conducted for wetlands that were less than one half acre; however, observed functions and values were noted on the wetland field data sheets using best professional judgment. The functions and values assessed for these wetlands include groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, production export, sediment/shoreline stabilization, wildlife habitat, recreation, educational/scientific value, uniqueness/heritage, visual quality/aesthetics, and endangered species habitat.

Results

Great Seneca Creek is a perennial system, classified as a Use I-P waters (water contact recreation and protection of aquatic life, and public water supply), flows through the center of the project area. As a result of field investigations, seven wetlands were delineated within the project area, and within Wetland 1, two additional stream systems were identified. Refer to **Attachment 4** mapping for the location of each of these wetland and waters systems.

Wetland 1 begins approximately 200 feet west of MD 124 south of Great Seneca Creek and extends along the southern property boundary to the western property boundary. The wetland system is comprised of a series of seep drainages that begin at the toe of the southern valley wall of Great Seneca Creek and form into an unnamed tributary of Great Seneca Creek (WUS 7). The easternmost seep wetland is classified as a PEM1/2B, with persistent and non-persistent vegetation with a saturated water regime. At the time of the field investigation, water was three inches below the surface as measured from an on-site groundwater well. Nearly 10 percent of the plot was inundated with less than an inch of water. Oxidized root channels were another indicator of hydropresence observed during the site visit. Dominant vegetation included *Juncus effusus* (soft rush), *Lolium perenne* (perennial ryegrass), *Thelypteris thelypyeroides* (marsh fern) and *Symplocarpus foetidus* (skunk cabbage). Soils in this portion of the wetland are mapped as Baile silt loam, which is listed as hydric by the Natural Resources Conservation Service (NRCS). The hydric soil criteria were met within one and 12 inches of the soil profile with a matrix color of 10YR4/1 and 5/1 and mottle colors of 7.5YR3/4 and 4/6.

The remainder of this system is classified as a PFO1E, with broad-leaved deciduous vegetation and a seasonally saturated water regime. At the time of the field investigation, the wetland had shallow inundation and soils saturated to the surface. Other indicators of hydrology included water marks, drift deposits, water-stained leaves, and oxidized root channels. Dominant vegetation included *Acer rubrum* (red maple) in the canopy; *Ilex verticillata* (common winterberry), *Viburnum dentatum* (southern arrowwood), and *Lindera benzoin* (northern spicebush) in the shrub layer; and *Microstegium vimineum* (Nepalese browntop) and *Glecoma hederacea* (ground ivy) in the herbaceous layer. Soils within this portion of the wetland are mapped as Hatboro silt loam, which is listed as hydric by the NRCS. Soils met the Depleted Matrix (F3) hydric indicator under the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. The hydric soil criteria were met within zero and ten inches of the soil profile with a matrix color of 10YR4/1 and mottle colors of 7.5YR3/4.

Wetland 2 is located on the southside of Great Seneca Creek and along the north bank of the unnamed tributary WUS 7. This wetland is supported by overland flow and groundwater seepage and discharges into the unnamed tributary. This wetland is classified as PFO1E with a seasonally flooded/saturated water regime. During the site visit the wetland was inundated with one inch of water, soils were saturated to the surface, and there was free water in the test pit at the surface. Other indicators of hydropresence included drift lines, sediment deposits, and drainage patterns. Dominant vegetation included *Quercus palustris* (pin oak), *Symplocarpus foetidus* (skunk cabbage), and *Glecoma hederacea* (ground ivy). Skunk cabbage is likely a dominant during the early part of the growing season, but was represented only by small spikes poking up through the soil during the early fall field assessment. Soils in this area are mapped as Hatboro silt loam. Hydric soil criteria were met within five inches of the surface with the sample exhibiting a matrix color of 10YR3/1 and mottle colors of 710YR3/6.

Wetland 3 is located on the north side of Great Seneca Creek. This wetland receives runoff from the adjacent agricultural field and some groundwater seepage; it connects to a small tributary via two narrow swales. This wetland is classified as PEM2E, with a seasonally flooded/saturated water regime. During the site visit approximately 20 percent of the wetland was inundated with one to three inches of water. Other indicators of hydropresence included saturated soils at the surface, free water in the test pit at the surface, drainage patterns, and

oxidized root channels. Dominant vegetation included *Echinochloa muricata* (rough barnyard grass) and *Panicum dichotomiflorum* (fall panic grass). Soils in this area are mapped as Hatboro silt loam. The hydric soil criteria were met within three and 12 inches of the soil profile with a matrix color of 2.5Y4/2 and mottle colors of 7.5YR4/6.

Wetland 4 is adjacent to Great Seneca Creek on the south side, approximately 150 feet south of Wetland 1. This area is an isolated depression that holds surface water from overland flow. This wetland is classified as PEM2C, with a seasonally flooded water regime. At the time of the field investigation, the area was inundated with seven inches of water. Dominant vegetation included *Panicum dichotomiflorum* (fall panic grass), *Polygonum* sp. and *Ludwigia palustris* (marsh seedbox). Soils in the wetland are mapped as Codorus silt loam, which is not listed as hydric, although these soils can have Hatboro silt loam inclusions, which are listed as hydric. The hydric soil criteria were met within five inches of the soil surface with a matrix color of 10YR4/2 and mottles of 7.5YR4/6.

Wetland 5 is located along the northwestern property boundary just north of Wetland 3. This drainage swale wetland receives runoff from the adjacent abandoned agricultural field. The wetland connects to an off-site unnamed tributary stream that drains to Great Seneca Creek. The system is classified as PEM2C, with a seasonally flooded water regime. At the time of the field investigation, no surface water was present, but soils were saturated to the surface and water was present within six inches of the surface in an unlined bore hole. Dominant vegetation included *Phalaris arundinacea* (reed canary-grass) and *Microstegium vimineum* (Nepalese browntop). Soils within the wetland are mapped as Hatboro silt loam. The hydric soil criteria were met within two and ten inches of the soil profile with a matrix color of 10YR4/2 and mottle colors of 7.5YR4/6.

Wetland 6 is located within a triangular shaped land area that lies between Great Seneca Creek and an unnamed tributary to Great Seneca Creek. The system is a shallow drainage swale that receives surface runoff and groundwater seepage and discharges to the unnamed tributary just upstream of the confluence with Great Seneca Creek. The wetland is classified as PEM2E, with a seasonally flooded/saturated water regime. Two inches of surface water was present within much of the wetland at the time of the field investigation. Dominant vegetation included *Agrostis stolonifera* (creeping bentgrass). Soils within this wetland were mapped Codorus silt loam, although these soils can have Hatboro silt loam inclusions. Soils met the Depleted Matrix (F3) hydric indicator under the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. The hydric soil criteria were met between zero and twelve inches of the soil surface with a matrix color of 10YR4/2 and mottles of 7.5YR4/6.

Waters of the U.S. 7 (WUS 7) is an unnamed tributary stream that drains into Great Seneca Creek. The stream lies within the forested section along the southern portion of the property. The stream begins from a series of groundwater seeps and surface water runoff from the surrounding uplands. The stream is classified as riverine intermittent with a streambed substrate comprised of gravel, sand, and mud (R4SB3/4/5). The average channel width is about four feet. Channel depth averages about 1.5 feet. Approximately two inches of water was flowing within the channel at the time of the site visit. The channel substrate varies from mostly organic mud near the headwaters to mud, sand, and gravel farther downstream. Little in-stream habitat exists for fish. Habitat features include woody debris, leaf packs, and roots that likely support stream

macro invertebrates. Minor erosion was observed with no exposed banks evident. Forested vegetation occurs within the entire length of the stream, providing about 85% canopy coverage. Common vegetation along the stream includes red maple, *Fraxinus pennsylvanica* (green ash), *Quercus palustris* (pin oak), *Liriodendron tulipifera* (yellow poplar), *Lindera benzoin* (northern spicebush), and *Carpinus caroliniana* (American hornbeam).

Wetland 8 is located within the triangular shaped land area north and east of Wetland 6. The system is a drainage swale that results from runoff from a pasture area east of MD 124. The swale drains toward Great Seneca Creek, but has no surface connection to the stream. The wetland is classified as PEM2C, with a seasonally flooded water regime. Up to six inches of water was present within the swale during the site visit. Dominant vegetation included *Polygonum persicaria* (spotted ladysthumb) and *Echinochloa muricata* (rough barnyard grass). Soils within this wetland were mapped Codorus silt loam with Hatboro silt loam inclusions. Soils met the Depleted Matrix (F3) hydric indicator under the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. The hydric soil criteria were met between zero and four inches of the soil surface with a matrix color of 10YR4/2 and mottles of 10YR4/6.

Waters of the U.S. 9 (WUS 9) is an unnamed tributary that drains north into the unnamed tributary labeled as WUS 7. The stream enters the property from the north near the western property boundary. The stream is classified as riverine intermittent with a streambed substrate comprised of gravel and sand (R4SB3/45). The average channel width is about four feet. Channel depth averages about 1.5 feet. Approximately one to eight inches of water was flowing within the channel at the time of the site visit. The channel substrate varies between sand and gravel. Little in-stream habitat exists for fish. Habitat features include woody debris and leaf packs. Minor erosion was observed in the form of bank scour. Forested vegetation occurs within the entire length of the stream, providing about 85% canopy coverage. Common vegetation along the stream includes *Acer rubrum* (red maple), *Fraxinus pennsylvanica* (green ash), *Liriodendron tulipifera* (yellow poplar), *Nyssa sylvatica* (blackgum), and *Viburnum prunifolium* (blackhaw).

Conclusions

Seven wetlands and three watercourses were identified within the project area. Disturbances to these systems will require a permit from the U.S. Army Corps of Engineers (USACE) and the Maryland Department of the Environment (MDE). A jurisdictional determination (JD) was conducted on October 27, 2011 by the USACE and MDE.

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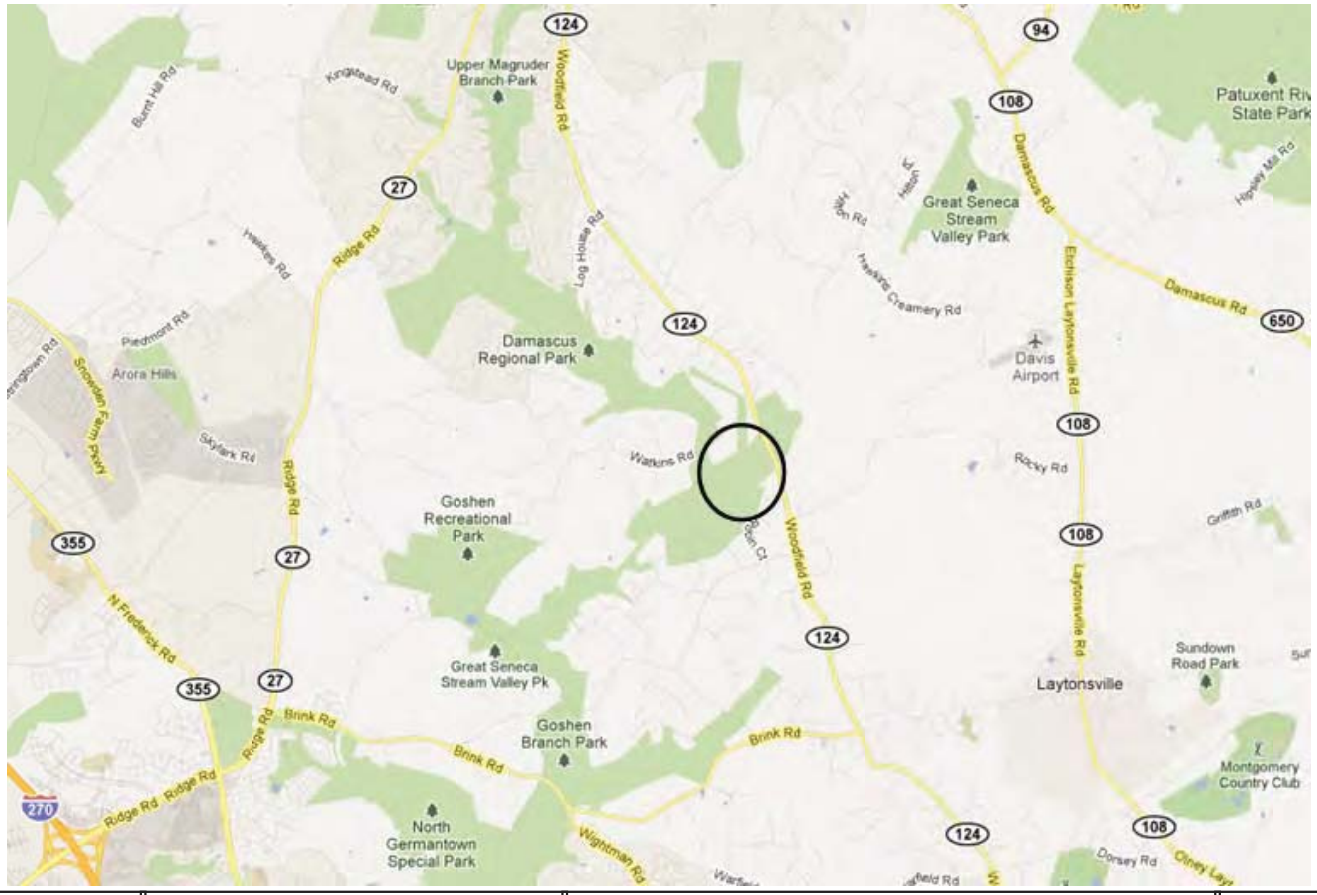
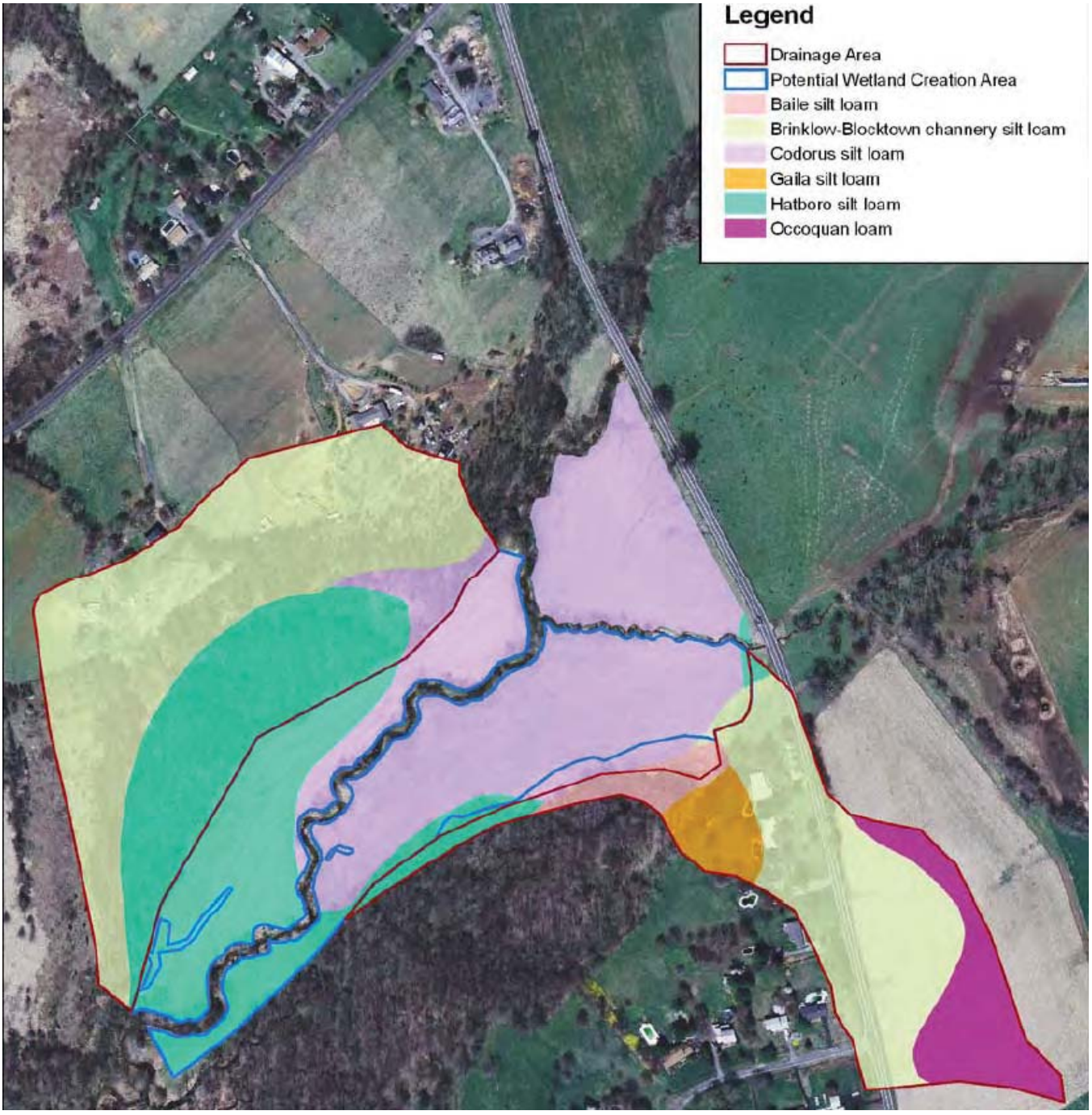


Attachment 1
ICC Wetland Mitigation Site SC-19
Vicinity Map



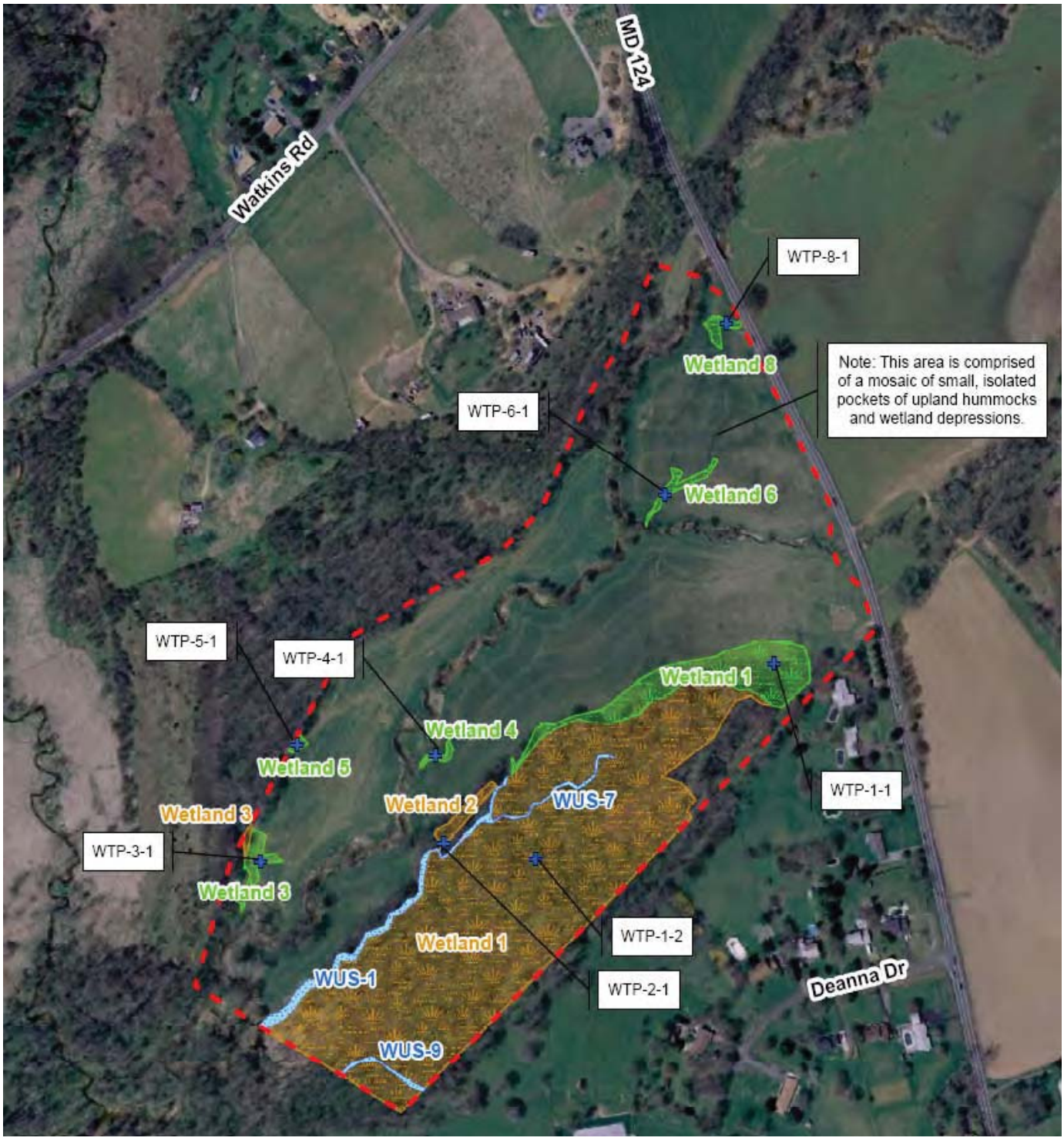
ICC intercounty connector

MARYLAND TRANSPORTATION AUTHORITY

FHWA

Attachment 2
ICC Wetland Mitigation Site SC-19
Soils Map

Attachment 3
ICC Wetland Mitigation Site SC-19
FEMA 100 Year Floodplain



ICC intercounty connector

MARYLAND TRANSPORTATION AUTHORITY

FHWA

Attachment 4
ICC Wetland Mitigation Site SC-19
Wetlands and Other Waters of the U.S.

Attachment 5
ICC Wetland Mitigation Site SC-19
NWI Map

Attachment 6
Photographs

Looking west at Wetland #1 PEM1/2B

Wetland #1 PFO1E

Looking northeast at Wetland #2 PFO1E

Looking at northeast at Wetland #3 PEM2E

Looking west at Wetland #4 PEM2C

Looking west at Wetland #5 PEM2C

Looking west at Wetland #6 PEM2E

Looking upstream at WUS 7 R4SB3/4/5

Looking north at Wetland #8 PEM2C

Attachment 7
Field Data Sheets

Data Form
Routine Wetland Determination
(1987 COE Wetlands Delineation Manual)

Project / Site :	SC-19	Date :	11/15/06
Applicant / Owner :	SHA	County :	Montgomery
Investigator :	DRS, HL, KR	State :	MD
Do Normal Circumstances exist on the site?	Yes		
Is the site significantly disturbed? (Atypical Situation)?	No	Community ID :	PEM1/2B
Is the area a potential Problem Area?	No	Transect ID :	W1
(If needed, explain below.)		Plot ID :	TP-1

Explanation:

Vegetation

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 *Juncus effusus*	H	FACW+	9		
2 *Lolium pratense*	H	FACU-	10		
3 *Thelypteris thelypteroides*	H	FACW+	11		
4 *Symplocarpus foetidus*	H	OBL	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)

75%

Remarks: Visual estimation of dominance by aerial cover. Scattered Dichanthelium clandestinum, Leersia oryzoides, Carex sp., Vernonia noveboracensis. Some Ilex verticillata and Alnus sp present in interior area.

Hydology

___ Recorded Data (Describe in Remarks)	Wetland Hydology Indicators:
___ Stream, Lake, or Tide Gauge	Primary Indicators
___ Aerial Photographs	√ Inundated
√ Other	√ Saturated in Upper 12 Inches
___ No Recorded Data Available	___ Water Marks
	___ Drift Lines
Field Observations:	___ Sediment Deposits
Depth of Surface Water <1 (in.)	___ Drainage Patterns in Wetlands
	Secondary Indicators (2 or more required):
	√ Oxidized root channels in Upper 12 Inches
Depth to Free Water in Pit: 3 (in.)	___ Water-Stained Leaves
	___ Local Soil Survey Data
Depth to Saturated Soil 0 (in.)	___ Fac-Neutral Test
	___ Other (Explain in Remarks)

Remarks: Groundwater well measurement - water at 3 inches below surface. Approximately 10% of wetland is inundated.

Soils

Map unit name (Series and Phase): Baile silt loam

Drainage class: poorly drained

Taxonomy (Subgroup): Typic Endoaquults

Field observations confirm map type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance / Contrast	Texture, Concretions, Structure, ect.
0-1	Oi				
1-4		10YR4/1	7.5YR3/4	common/distinct	Silty Clay Loam
4-12		10YR5/1	7.5YR4/6	many/distinct	Clay Loam w/coarse frag and rootlets

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed on Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
√ Gleyed or Low-Chroma Soils	___ Other (Explain in Remarks)

Remarks:

Wetland Determination

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: ICC SC-19 City/County: Montgomery Sampling Date: 6 Oct 2011

Applicant/Owner: SHA State: MD Sampling Point: WL PFO-2

Investigator(s): D. Smith, D. Rodgers Section, Township, Range: _____

Landform (hillslope, terrace, etc.): low gradient hillside Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: PFOIE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✓ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): <1"
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetter than average late summer, early fall. No rain within previous 48" hours.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WJ-PT5

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	60	Y	FAC
2. Fraxinus pennsylvanica	10		FACW
3. Carpinus caroliniana	10		FAC
4. Nyssa sylvatica	1		FAC
5.			
6.			
7.			
8.			
	81	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. Ilex verticillata	3	Y	FACW
2. Viburnum dentatum	3	Y	FAC
3. Lindera benzoin	3	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	9	= Total Cover	

Herb Stratum (Plot size:)			
1. Micostegium vimineum	45	Y	FAC
2. Boehmeria cylindrica	15		FACW
3. Glechoma hederacea	60	Y	FACU
4. Polygonum persicaria	12		FACW
5. Polygonum arifolium	6		OBL
6. Polygonum punctatum	8		OBL
7. Pilea pumila	10		OBL
8. Carex sp.	2		-
9. Symplocarpus foetidus	20		OBL
10. Polygonum perfoliatum	3		FAC
11.			
12.			
	181	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTP 1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/1	85	7.5YR3/4	15	C	M, PL	sicl	
10+	10YR3/1	90	7.5YR3/4	10	C	M	sicl	w/ organics

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

Data Form
Routine Wetland Determination
(1987 COE Wetlands Delineation Manual)

Project / Site :	SC-19	Date :	11/10/06
Applicant / Owner :	SHA	County :	Montgomery
Investigator :	DRS, HL, KR	State :	MD
Do Normal Circumstances exist on the site?	Yes		
Is the site significantly disturbed? (Atypical Situation)?	No	Community ID :	PFO1E
Is the area a potential Problem Area?	No	Transect ID :	W2
(If needed, explain below.)		Plot ID :	TP-2

Explanation:

Vegetation

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 *Quercus palustris*	T	FACW	9		
2 *Symplocarpus foetidus*	H	OBL	10		
3 *Glecoma hederacea*	H	FACU	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)
67%

Remarks: Visual estimation of dominance by aerial cover. Buttressed tree bases and crayfish mounds present.

Hydology

___ Recorded Data (Describe in Remarks)	Wetland Hydology Indicators:
___ Stream, Lake, or Tide Gauge	Primary Indicators
___ Aerial Photographs	√ Inundated
___ Other	√ Saturated in Upper 12 Inches
√ No Recorded Data Available	___ Water Marks
	√ Drift Lines
Field Observations:	√ Sediment Deposits
Depth of Surface Water 1 (in.)	√ Drainage Patterns in Wetlands
	Secondary Indicators (2 or more required):
	___ Oxidized root channels in Upper 12 Inches
Depth to Free Water in Pit: 0 (in.)	___ Water-Stained Leaves
	___ Local Soil Survey Data
Depth to Saturated Soil 0 (in.)	___ Fac-Neutral Test
	___ Other (Explain in Remarks)

Remarks: Supported by overland flow and groundwater seepage. Also recieves backwater from stream channel.

Soils

Map unit name (Series and Phase): Hatboro silt loam

Drainage class: poorly drained

Taxonomy (Subgroup): Fluvaquentic Endoaquepts

Field observations confirm map type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance / Contrast	Texture, Concretions, Structure, ect.
0-5		10YR3/1	10YR3/6	few/faint	Silty Clay w/coarse frag
5-12		10YR4/1			Silty Clay Loam w/coarse fragments

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Soils	___	Other (Explain in Remarks)

Remarks:

Wetland Determination

Hydrophytic Vegetation Present?	Yes		
Wetland Hydrology Present?	Yes	Is this Sampling Point Within a Wetland?	Yes
Hydric Soils Present?	Yes		

Remarks:

Data Form
Routine Wetland Determination
(1987 COE Wetlands Delineation Manual)

Project / Site :	SC-19	Date :	11/10/06
Applicant / Owner :	SHA	County :	Montgomery
Investigator :	DRS, HL, KR	State :	MD
Do Normal Circumstances exist on the site?	Yes		
Is the site significantly disturbed? (Atypical Situation)?	No	Community ID :	PEM2E
Is the area a potential Problem Area?	No	Transect ID :	W3
(If needed, explain below.)		Plot ID :	TP-3
Explanation:			

Vegetation

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 *Echinochloa muricata*	H	FACW+	9		
2 *Panicum dichotomiflorum*	H	FACW-	10		
3			11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Visual estimation of dominance by aerial cover

Hydology

___ Recorded Data (Describe in Remarks)		Wetland Hydology Indicators:	
___ Stream, Lake, or Tide Gauge		Primary Indicators	
___ Aerial Photographs		√ Inundated	
___ Other		√ Saturated in Upper 12 Inches	
√ No Recorded Data Available		___ Water Marks	
		___ Drift Lines	
Field Observations:		___ Sediment Deposits	
Depth of Surface Water	1-3 (in.)	√ Drainage Patterns in Wetlands	
		Secondary Indicators (2 or more required):	
		√ Oxidized root channels in Upper 12 Inches	
Depth to Free Water in Pit:	0 (in.)	___ Water-Stained Leaves	
		___ Local Soil Survey Data	
Depth to Saturated Soil	0 (in.)	___ Fac-Neutral Test	
		___ Other (Explain in Remarks)	

Remarks: Approximately 20% of the wetland is inundated. Receives runoff from hay field and is also groundwater fed. Joins stream in 2 locations.

Soils

Map unit name (Series and Phase): Hatboro silt loam

Drainage class: Somewhat poorly drained

Taxonomy (Subgroup): Fluvaquentic Endoaquepts

Field observations confirm map type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance / Contrast	Texture, Concretions, Structure, ect.
0-3		10YR4/2			Silt Loam
3+		2.5Y4/2	7.5YR4/6	common/prominent	Silty Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
√	Gleyed or Low-Chroma Soils	___	Other (Explain in Remarks)

Remarks:

Wetland Determination

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

Data Form
Routine Wetland Determination
(1987 COE Wetlands Delineation Manual)

Project / Site :	SC-19	Date :	11/15/06
Applicant / Owner :	SHA	County :	Montgomery
Investigator :	DRS, HL, KR	State :	MD
Do Normal Circumstances exist on the site?	Yes		
Is the site significantly disturbed? (Atypical Situation)?	No	Community ID :	PEM2C
Is the area a potential Problem Area?	No	Transect ID :	W4
(If needed, explain below.)		Plot ID :	TP-5

Explanation:

Vegetation

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 *Panicum dichotomiflorum*	H	FACW-	9		
2 *Polygonum sp.*	H		10		
3 *Ludwigia palustris*	H	OBL	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Visual estimation of dominance by aerial cover.

Hydology

___ Recorded Data (Describe in Remarks)	Wetland Hydology Indicators:
___ Stream, Lake, or Tide Gauge	Primary Indicators
___ Aerial Photographs	√ Inundated
___ Other	√ Saturated in Upper 12 Inches
√ No Recorded Data Available	___ Water Marks
	___ Drift Lines
Field Observations:	___ Sediment Deposits
Depth of Surface Water 7 (in.)	___ Drainage Patterns in Wetlands
	Secondary Indicators (2 or more required):
	___ Oxidized root channels in Upper 12 Inches
Depth to Free Water in Pit: 0 (in.)	___ Water-Stained Leaves
	___ Local Soil Survey Data
Depth to Saturated Soil 0 (in.)	___ Fac-Neutral Test
	___ Other (Explain in Remarks)

Remarks: Perched depressional area adjacent to stream. Holds surface water from overland flow.

Soils

Map unit name (Series and Phase): Codorus silt loam

Drainage class: Somewhat poorly drained

Taxonomy (Subgroup): Fluvaquents dystrochrepts

Field observations confirm map type? No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance / Contrast	Texture, Concretions, Structure, ect.
0-5		10YR4/2	7.5YR4/6	common/distinct	Silty Clay Loam
5-12+		2.5Y5/2	7.5YR4/6	common/distinct	Silty Clay w/buried organics

Hydric Soil Indicators:

___ Histosol	√ Concretions
___ Histic Epipedon	___ High Organic Content in Surface Layer in Sandy Soils
___ Sulfidic Odor	___ Organic Streaking in Sandy Soils
___ Aquic Moisture Regime	___ Listed on Local Hydric Soils List
___ Reducing Conditions	___ Listed on National Hydric Soils List
√ Gleyed or Low-Chroma Soils	___ Other (Explain in Remarks)

Remarks:

Wetland Determination

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: ICC/SC-19 City/County: Damascus/Mont. Sampling Date: 9/29/11

Applicant/Owner: SHA State: MD Sampling Point: WTP-5-1

Investigator(s): DRS + DWR Section, Township, Range:

Landform (hillslope, terrace, etc.): seepage channel Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR or MLRA): MLRA-148 Lat: Long: Datum:

Soil Map Unit Name: Codorus silt loam NWI classification: PEM2C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ✓ No ____ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WTP-5-1

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Herb Stratum (Plot size: 30' radius)			
1. Phalaris arundinacea	70	Y	FACW
2. Microstegium vimineum	35	Y	FAC
3. Polygonum sagittatum	15		OBL
4. Polygonum persicaria	3		FACW
5. Polygonum punctatum	1		OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	124 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTP-5-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/2		—				sil	many rootlets
2-10	10YR4/2		7.5YR4/6	75	C	M	sicl	
10-14	10YR5/1		7.5YR3/4	45	C	M	lc.	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: ICC/SC-19 City/County: Damascus/Mont. Sampling Date: 9-29-11

Applicant/Owner: SHA State: MD Sampling Point: WTP-6-1

Investigator(s): DRS & DWR Section, Township, Range:

Landform (hillslope, terrace, etc.): seepage channels Local relief (concave, convex, none): concave Slope (%): 0-2%

Subregion (LRR or MLRA): MLRA-148 Lat: Long: Datum:

Soil Map Unit Name: Codorus silt loam NWI classification: PEM2F

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 2"
Water Table Present?	Yes ✓	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks

seepage channel network flows into incised single channel which flows directly into stream

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTP6-1

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Herb Stratum (Plot size: 30' radius)			
1. Phalaris arundinacea	15		FACW
2. Agrostis stolonifera	75	Y	FACW
3. Echinochloa muricata	17		FACW
4. Juncus effusus	1		FACW
5. Lolium pratense	8		FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	116 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks. (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTP6-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/2	95	7.5YR4/6	5	C	M	sil	
3-12	10YR5/2	80	7.5YR4/6	20	C	M	sicl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✓ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: ICC/SC-19 City/County: Damascus/Mont. Sampling Date: 10-6-11

Applicant/Owner: SHA State: MD Sampling Point: WTP-8-1

Investigator(s): DR + DS Section, Township, Range: _____

Landform (hillslope, terrace, etc.): floodplain depression Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Codorus silt loam NWI classification: PEM2C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 6	
Water Table Present?	Yes _____	No _____	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 6	**Wetland Hydrology Present?** Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

perched hydrology

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WTP-8-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Polygonum persicaria	15	Y	FACW
2. Echinochloa muricata	15	Y	FACW
3. Leersia oryzoides	10		OBL
4. Polygonum punctatum	7		FACW
5. Juncus effusus	2		FACW
6. Fraxinus pennsylvanica	2		FACW
7. Schedonorus pratensis	8		FACU
8.			
9.			
10.			
11.			
12.			
	59 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTP-8-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	95	10YR4/6	5	C	M	sil	
4-12	10YR6/6		—				cl	w/ coarse fragments

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Attachment 8
New England Functional Assessment Form

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"?_____

Adjacent land use Residential, abandoned ag, road Distance to nearest roadway or other development <200'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Middle

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. SC-19 - 1

Latitude_____ Longitude_____

Prepared by: DRS, DR Date 29 Sept. 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field ✓

Corps manual wetland delineation completed? Y ✓ N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		5, 7, 9, 10, 13, 15,		Discharge present within isolated pockets & water throughout wetl. While does not meet criteria, function occurs
Floodflow Alteration	✓		1, 2, 3, 5, 6, 7, 8, 9, 13, 14, 15, 16,		while wetl. occurs along edges of floodplain, its large size and relatively flat slope provide opportunity.
Fish and Shellfish Habitat	✓		2, 4, 8, 9, 10, 12, 14, 15, 16, 17		small fish observed
Sediment/Toxicant Retention	✓		2, 3, 4, 7, 8, 9, 10, 11, 13, 14, 15, 16,	✓	Dense root mats, dense herbaceous veg, and dense woody debris; no opportunity, but if sediment, could trap.
Nutrient Removal	✓		1, 3, 4, 5, 7, 8, 9, 11, 12, 13, 14, 15,	✓	Fertilizer and septic leakage possible
Production Export	✓		1, 2, 3, 4, 5, 8, 10, 12, 13,	✓	Rivulets transport detritus to the aquatic system downstream, vegetation provides food sources to insects, birds, herbivores.
Sediment/Shoreline Stabilization	✓		2, 3, 5, 6, 8, 9, 12, 13, 14, 15		
Wildlife Habitat	✓		1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 17, 18, 19, 21,	✓	some minor human disturbs, some FIDS species present, red fox, deer, beaver
Recreation		✓	4, 5, 7, 11,		
Educational/Scientific Value		✓	2, 3, 4, 5, 10, 11, 17,		
Uniqueness/Heritage	✓		4, 6, 7, 11, 12, 13, 14, 15, 16, 17, 19, 24, 27, 28	✓	Emergent sedge wetland contains white turtlehead & may contain Baltimore checkerspot butterflies. This system is likely one of the best representations of its kind within the eco-region that is not already protected by M-NCPPC.
Visual Quality/Aesthetics	✓		1, 3, 4, 6, 7, 8, 11, 12		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

APPENDIX B.1 – SC-19 2013 WETLAND CREATION SITE PLANS

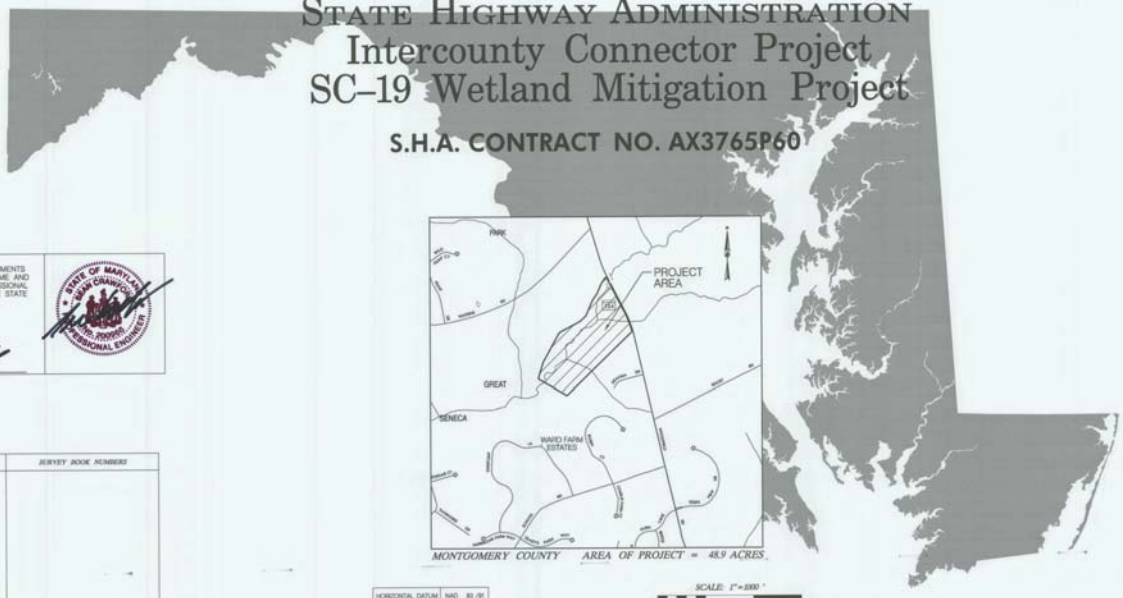
INDEX OF SHEETS
SEE SHEET 2

SHA

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

Intercounty Connector Project
SC–19 Wetland Mitigation Project

S.H.A. CONTRACT NO. AX3765P60



MONTGOMERY COUNTY AREA OF PROJECT = 48.9 ACRES

SCALE: 1"=1000'

1000 0 1000 2000 feet

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 200966

EXPIRATION DATE: 01/16/2013

NAME: SEAN CRAWFORD

SIGNATURE:

STATE OF MARYLAND · SEAN CRAWFORD · 200966 · PROFESSIONAL ENGINEER

R-O-W PLAT NUMBERS	SURVEY BOOK NUMBERS

HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MUTCD

ALL WORK ON THIS PROJECT SHALL CONFORM TO THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATIONS SPECIFICATIONS ENTITLED STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2008 REVISIONS THEREOF OR ADDITIONS THERETO. THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK, THE ADMINISTRATIONS BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES AND THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL PTE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

COMPLETENESS OF DOCUMENTS

THE STATE HIGHWAY ADMINISTRATION SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM THE STATE HIGHWAY ADMINISTRATION'S CASHIER'S OFFICE. FAILURE TO ATTACH ADDENDA MAY CAUSE THE BID TO BE IRREGULAR.

ENVIRONMENTAL INFORMATION

MDE # 12-SF-0191

SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION.

STANDARD STABILIZATION NOTE :

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDER DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNERS / DEVELOPERS CERTIFICATION

I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

REVISIONS	

REVIEWED AND APPROVAL RECOMMENDED DATE
DEPUTY DIRECTOR, OFFICE OF THE ADMINISTRATOR CONNECTOR

APPROVED DATE
DIRECTOR, OFFICE OF THE ADMINISTRATOR CONNECTOR

COASTAL RESOURCES INC.

BY: SUMANTHAP

SURVEY BOOK NO.

G:\ACTIVE\2005-03 ICC GEC\ES OM CS\SC-19\CAD\2011\pQN-T001_sc-19.dgn
Wednesday, January 25, 2012 AT 02:11 PM

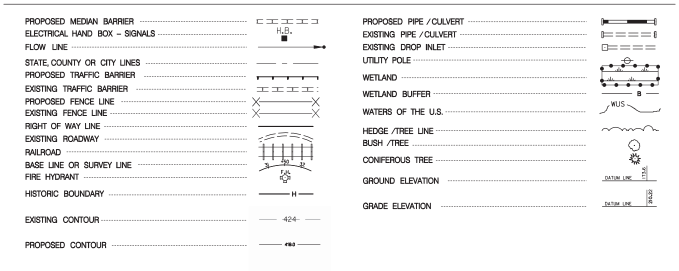
ABBREVIATIONS

Abbreviation	Meaning
AASHTO	American Association of State Highway Transportation Officials
ADT	Average Daily Traffic
AHD	Ahead
APPROX.	Approximate
B̶L or B/L	Baseline
BK	Back / Book
BIT.	Bituminous
B.C.	Bituminous Concrete
B.M.	Bench Mark
BOT.	Bottom
C.C.	Center of Curve
CAP	Corrugated Aluminum Pipe
CAPA	Corrugated Aluminum Pipe Arch
CATV	Cable Television
C.B.R.	California Bearing Ratio
℄ or C/L	Centerline
CL.	Class
CLF	Chainlink Fence
CMP	Corrugated Metal Pipe
C.O.	Cleanout
COMB.	Combination
CONC.	Concrete
CONSTR.	Construction
COR.	Corner
CORR.	Correction
CPP–S	Corrugated Polyethylene Pipe – Type 'S'
CSP	Corrugated Steel Pipe – Aluminized Type 2
CSPA	Corrugated Steel Pipe Arch – Aluminized Type 2
DC	Degree of Curve
D.H.V.	Design Hourly Volume
D.I.	Drop Inlet
DIA.	Diameter
D.O.	Double Opening
E	East
E	Electric
E	External Distance
EA	Each
EB	Eastbound
ELEV	Elevation
ES	End Section
EX or EXIST	Existing
FT	Feet
F or FL	Flowline
F.B.D.	Flat Bottom Ditch
F.H.	Fire Hydrant
FWD.	Forward
G	Gas
G.V.	Gas Valve
H.B.	Handbox
HDPE	High Density Polyetheylene

Abbreviation	Meaning
HDWL.	Headwall
HERCP	Horizontal Ellipitical Reinforced Concrete Pipe
HP	High Point
IN	Inch
I.S.T.	Inlet Sediment Trap
INV.	Invert
J.B.	Junction Box
K	K Inlet
L	Length
LF	Linear Feet
L.L.	Liquid Limit
LP	Low Point
L.P.	Light Pole
LT.	Left
MAC.	Macadam
M.C.	Moisture Content
MAX.	Maximum
M.D.D.	Maximum Dry Content
MOD.	Modified
MIN.	Minimum
N	North
NB	Northbound
NE	Northeast
N.P.	Non–Plastic
O.C.	On Center
OHE	Overhead Electric
O.M.	Optimum Moisture
PAV'T.	Pavement
PC	Point of Curvature
PCC	Point of Compound Curvature
P/C	Point of Crown
P/GE	Profile Grade Elevation
P.G.E.	Profile Ground Elevation
P.G.L.	Profile Grade Line
P/GL	Profile Ground Line
P/R	Point of Rotation
P.I.	Plasticity Index
PI	Point of Intersection
POC	Point On Curve
POT	Point On Tangent
PPWP	Polyvinyl Chloride Profile Wall Pipe
PROP	Proposed
PRC	Point of Reverse Curve
PT	Point
PT	Point of Tangency
PVC	Point of Vertical Curve
PVC	Polyvinyl Chloride
PVI	Point of Vertical Intersection
PVRC	Point of Vertical Reverse Curve
PVT	Point of Vertical Tangency
R	Radius
R.F.	Rock Fragments
RT	Right

Abbreviation	Meaning
RW or R/W	Right of Way
RCP	Reinforced Concrete Pipe
RCPP	Reinforced Concrete Pressure Pipe
R.Q.D.	Rock Quality Designation
R.M.	Rootmat
S	South
SAN.	Sanitary Sewer
SB or S/B	Southbound
S.D.	Storm Drain
S.D.D.	Surface Drain Ditch
S/E	Super Elevation
SF	Silt Fence
SF	Square Feet
SHT.	Sheet
SPP	Structural Steel Plate Pipe
SPPA	Structural Steel Plate Pipe Arch
S.P.T.	Standard Penetration Testing
SRP	Steel Spiral Rib Pipe – Aluminized Type 2
SRPA	Steel Spiral Rib Pipe Arch – Aluminized Type 2
SSD	Stopping Sight Distance
SSF	Super Silt Fence
STD.	Standard
STA.	Station
SO.	Single Opening
SY	Square Yards
SWM	Stormwater Management
T	Tangent
T	Telephone
T.C.	Top of Cover
T.G.	Top of Grate
T or TL	Traverse Line
T.M.	Top of Manhole
TRAV.	Traverse
TS	Temporary Swale
T.S.	Top of Slab
T.S.	Topsoil
TYP.	Typical
U.D.	Under Drain
U.G.	Underground
U.P.	Utility Pole
USDA	United States Department of Agriculture
VCL	Vertical Clearance
V.C.L.	Vertical Curve Length
W	Water
W	West
WB	Westbound
WB	Wetland Buffer
W.M.	Water Meter
W.S.	Wrapped Steel
WUS	Waters of the United States
W.V.	Water Valve

CONVENTIONAL SIGNS



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10	GEOMETRIC LAYOUT SHEET
11	GEOMETRIC LAYOUT NOTES
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BY: sumanthap –

COASTAL RESOURCES INC.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19
WETLAND MITIGATION PROJECT

R / W PLAT NUMBER	REVISIONS

NOTES AND ABBREVIATIONS SHEET

SCALE NTS ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. AB – 01 OF 01 SHEET NO. 02 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:41 AM
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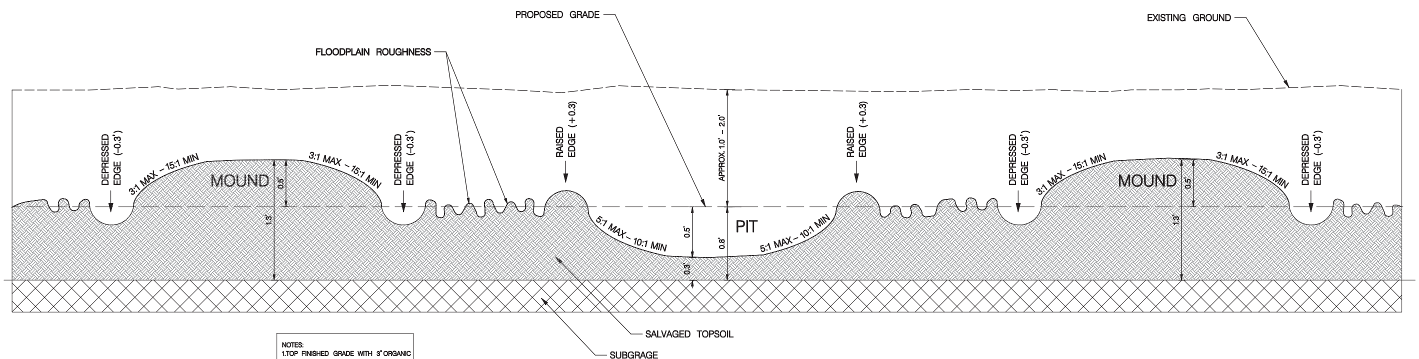
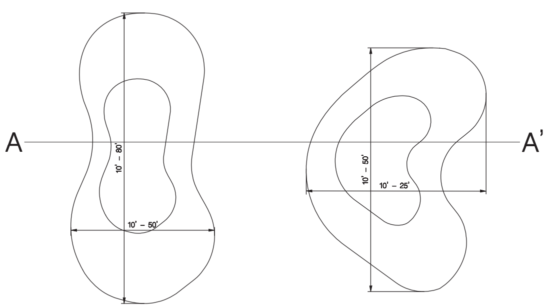


NOTES:
1.TOP FINISHED GRADE WITH 3" ORGANIC LEAF COMPOST.
2. SCARIFY SUBGRADE PRIOR TO THE PLACEMENT OF SALVAGED TOPSOIL.

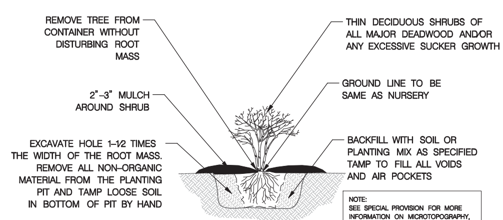
MICROTOPOGRAPHY – SECTION A–A'

NOT TO SCALE



MICROTOPOGRAPHY – PLAN VIEW

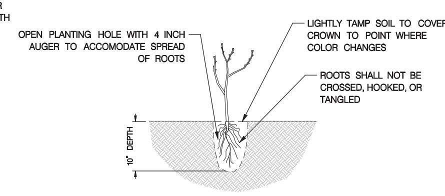
NOT TO SCALE



NOTE:
SEE SPECIAL PROVISION FOR MORE INFORMATION ON MICROTOPOGRAPHY, LIVE STAKES, AND PLANTINGS.

TREE/SHRUB PLANTING– CONTAINER GROWN

NOT TO SCALE



TREE PLANTING– TUBELING

NOT TO SCALE

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19
WETLAND MITIGATION PROJECT

CROSS REFERENCE		R / W PLAT NUMBER	REVISIONS
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WETLAND DETAILS

SCALE NTS ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY SAP
F.A.P. NO. ____
COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. DE– 01 OF 03 SHEET NO. 03 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:42 AM
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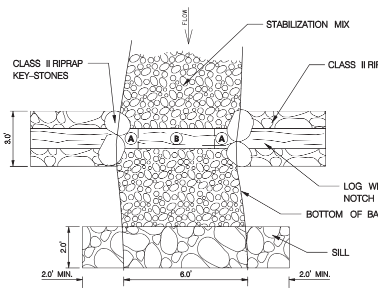
BY: sumanthap –

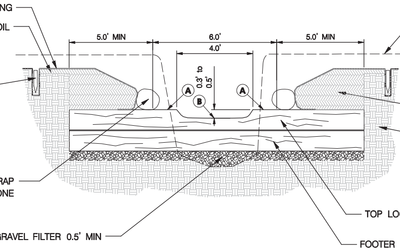
COASTAL RESOURCES INC.



NOTES:
1. LOGS SHALL BE TRENCHED IN TO AVOID ANY UNNECESSARY DISTURBANCE TO THE EXISTING BANK.
2. KEY SILL INTO BED AND BANKS AT THE DIRECTION OF THE ENGINEER.
3. SEE STRUCTURE TABLE BELOW FOR STATIONS AND ELEVATIONS ASSOCIATED WITH EACH LETTER DESIGNATION.
4. SEE GRADING SHEETS FOR THE EXACT LOCATION AND ORIENTATION OF EACH STRUCTURE.

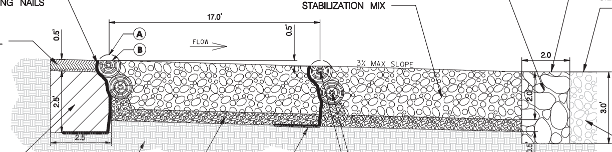
LOG OUTLET STRUCTURE PLAN VIEW (STA. BASELINE B: 206+00 TO 206+85) (STA. BASELINE C: 321+62 TO 322+47)

NOT TO SCALE



LOG OUTLET STRUCTURE CROSS SECTION VIEW (STA. BASELINE B: 206+00 TO 206+85) (STA. BASELINE C: 321+62 TO 322+47)

NOT TO SCALE



NOTES:
1. SEE STRUCTURE TABLES, PROFILES, AND GRADING SHEETS FOR THE EXACT LOCATIONS, ORIENTATION, AND PROPOSED GRADES ASSOCIATED WITH EACH STRUCTURE.
2. STABILIZATION MIX SHALL BE PLACED SO THAT IT SHINGLES IN A DOWNSTREAM DIRECTION. SMALL AND LARGE STONES SHALL BE MIXED TO MINIMIZE VOID SPACES. RIPRAP MUST BE PLACED IN MANNER TO PROMOTE INTERLOCKING. DUMPING OF RIPRAP WILL NOT BE PERMITTED.
3. FURNISHED NATURAL CHANNEL BACKFILL SHALL BE WASHED INTO THE STABILIZATION MIX TO FILL ALL INTERSTITIAL VOIDS.
4. ROOFING NAILS TO SECURE THE GEOTEXTILE FABRIC TO THE LOG FACE SHALL BE 1" GALVANIZED NAILS SPACED LESS THAN 1 FOOT AND SHOULD EXTEND THE ENTIRE LENGTH OF THE LOG

LOG OUTLET STRUCTURE PROFILE (STA. BASELINE B: 206+00 TO 206+85) (STA. BASELINE C: 321+62 TO 322+47)

NOT TO SCALE

LOG OUTLET STRUCTURE STATIONS AND ELEVATIONS			
BASELINE B (206+00 TO 206+85)			
	STATION	ELEVATION (A)	ELEVATION (B)
LOG 1	205+99.9	422.3	421.9
LOG 2	206+16.9	421.8	421.4
LOG 3	206+33.9	421.3	420.9
LOG 4	206+50.9	420.8	420.4
LOG 5	206+67.9	420.3	419.9
SILL	206+84.9	419.4	

LOG OUTLET STRUCTURE STATIONS AND ELEVATIONS			
BASELINE C (321+62 TO 322+47)			
	STATION	ELEVATION (A)	ELEVATION (B)
LOG 1	321+61.6	415.9	415.5
LOG 2	321+78.6	415.4	415.0
LOG 3	321+95.6	414.9	414.5
LOG 4	322+12.6	414.4	414.0
LOG 5	322+29.6	413.9	413.5
SILL	322+46.6	413.0	

ROCK SIZE	STABILIZATION MIX
CLASS 0 RIPRAP	33%
CLASS I RIPRAP	67%
FURNISH NATURAL CHANNEL BACKFILL	TOP DRESSING

NOTE:
1. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION ON LOG STEP OUTLET.

BY: sumanthap –

COASTAL RESOURCES INC.

CROSS REFERENCE	
ITEM	SHEET NOs.
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R /W PLAT NUMBER

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19
WETLAND MITIGATION PROJECT

WETLAND DETAILS

SCALE NTS ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY SAP
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. DE–02 OF 03 SHEET NO. 04 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:42 AM
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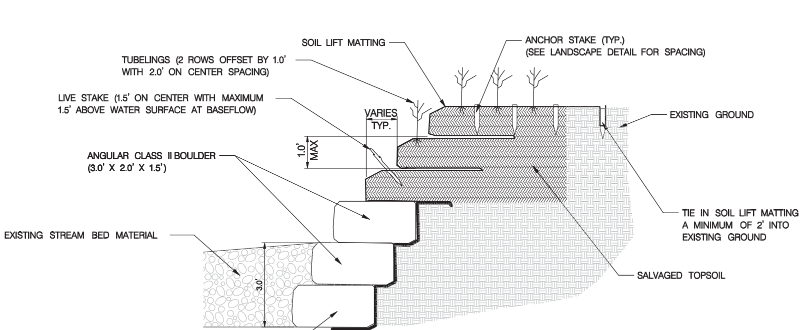
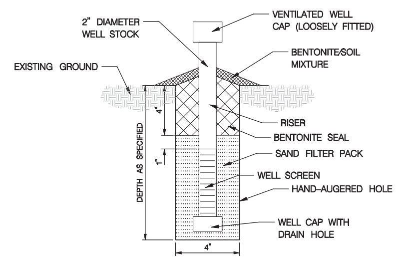


NOTE:
1. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION ON STONE TOE PROTECTION WITH FABRIC ENCAPSULATED SOIL LIFTS.

STONE TOE WITH FABRIC ENCAPSULATED SOIL LIFTS – SECTION VIEW

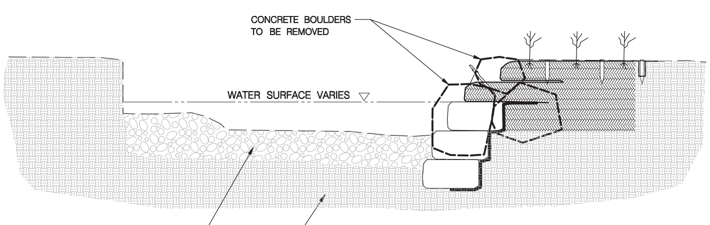
NOT TO SCALE



NOTES:
1. MONITORING WELLS SHOULD BE INSTALLED WITH THE OVERSIGHT OF THE DESIGNATED SPECIALIST.
2. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION ON MONITORING WELL INSTALLATION.

MONITORING WELL – SECTION VIEW

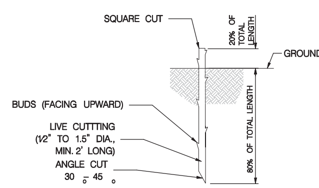
NOT TO SCALE



NOTES:
1. SEE STONE TOE WITH FABRIC ENCAPSULATED SOIL LIFTS DETAIL, PROPOSED GRADES, AND SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
2. CONCRETE BOULDER REMOVAL AND INSTALLATION OF STONE TOE WITH FABRIC ENCAPSULATED SOIL LIFTS SHALL BE CONDUCTED WITH THE OVERSIGHT OF THE ENGINEER.
3. EVERY EFFORT SHOULD BE MADE TO MINIMIZE DISTURBANCE OF THE EXISTING STREAM BANKS DURING THE REMOVAL OF CONCRETE BOULDERS.
4. NUMBER OF LIFTS AND HEIGHT OF STONE TOE PROTECTION VARY BASED ON WATER SURFACE ELEVATION AND PROPOSED GRADES.

CONCRETE BOULDER REMOVAL AND STONE TOE WITH FABRIC ENCAPSULATED SOIL LIFTS (TYP.) – SECTION VIEW

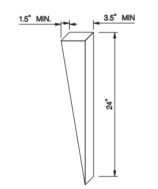
NOT TO SCALE



NOTE:
LIVE STAKES MUST BE INSTALLED WHILE DORMANT (LATE FALL TO EARLY SPRING). DO NOT ALLOW THEM TO DRY OUT.

LIVE STAKE

NOT TO SCALE



NOTE:
ANCHOR STAKES SHALL BE TAPERED TWO FOOT LONG WOODEN STAKES CONSISTING OF STANDARD 2" X 4" WOODEN BOARDS CUT DIAGONALLY.

ANCHOR STAKE

NOT TO SCALE

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

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WETLAND CROSS SECTIONS	54-67		

WETLAND DETAILS

SCALE NTS ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY MPH
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. DE-03 OF 03 SHEET NO. 05 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:42 AM
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COASTAL RESOURCES INC.

BY: sumanthap –

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

1. MDE NOTIFICATION

IF AN EROSION AND SEDIMENT CONTROL PERMIT IS ISSUED FOR THIS PROJECT, UPON APPROVAL, NOTIFY MDE IN WRITING AND/OR BY TELEPHONE AT (410) 537-3510 AT THE FOLLOWING POINTS:
- PRE-CONSTRUCTION MEETING
- EROSION AND SEDIMENT CONTROL MEETING (MINIMUM 7 WORKING DAYS PRIOR TO COMMENCING EARTH DISTURBING ACTIVITIES)
- FOLLOWING INSTALLATION OF INITIAL SEDIMENT CONTROL MEASURES
- DURING INSTALLATION OF MAJOR SEDIMENT CONTROL BASINS/TRAPS
- PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S)
- PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES
- PRIOR TO FINAL ACCEPTANCE BY SHA

2. STANDARDS AND SPECIFICATIONS

CONSTRUCT THIS PLAN IN ACCORDANCE TO THE DRAFT 2010 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THE MARYLAND DEPARTMENT OF ENVIRONMENT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REGULATIONS AND ALL REVISIONS THERE OF, AND AS SPECIFIED. KEEP A COPY OF THE 2010 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ON THE SITE AT ALL TIMES.

3. INGRESS / EGRESS CONTROLS

PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ON PUBLIC ROADS. MECHANICALLY REMOVE ALL MATERIALS DEPOSITED ON PUBLIC ROADS IMMEDIATELY. THE FLUSHING OF ROAD SURFACES IS PROHIBITED.

TYPICALLY, CONTROL ALL INGRESS AND EGRESS POINTS THROUGH THE USE OF A "STABILIZED CONSTRUCTION ENTRANCE."

4. INSPECTION

INSPECT DAILY ALL EROSION AND SEDIMENT CONTROL MEASURES AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION .

5. SHUTDOWNS AND OR PENALTIES

TOTAL COMPLIANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS EXPECTED AT ALL TIMES. IN CASES WHERE THE CONTRACTOR IS FOUND TO BE IN NON-COMPLIANCE SHA MAY TAKE STEPS TO IMPOSE SELECTED OR TOTAL SHUTDOWNS AND IMPOSE LIQUIDATED DAMAGES FOR NON-COMPLIANCE.

THE DISTRICT ENGINEER CAN IMPOSE A TOTAL OR PARTIAL SHUTDOWN IF THE PROJECT MAY ADVERSELY IMPACT THE WATERS OF THE STATE.

6. RECORD KEEPING

THE PROJECTS' APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, APPROVED CHANGE REQUESTS, DAILY LOG BOOKS AND TEST REPORTS WILL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MDE.

7. DEWATERING PRACTICES

DEWATERING PRACTICES ARE CONSIDERED TO BE ELECTIVE IN NATURE. LOCATE AND OPERATE DEWATERING PRACTICES IN A MANNER THAT DOES NOT DISCHARGE SEDIMENT INTO ANY WATERWAY. NO VISIBLE CHANGES TO STREAM CLARITY ARE PERMITTED.

8. EROSION AND SEDIMENT CONTROL EXCAVATION

PLACE SILT REMOVED FROM CONTROL DEVICES IN AN APPROVED WASTE SITE EITHER ON OR OFF THE PROJECT. MATERIAL STORED ON SITE MAY BE REUSED ONCE IT IS DRIED AND IF IT MEETS SHA REQUIREMENTS FOR EMBANKMENT OR ANY UNSPECIFIED NEED.

9. OFF-SITE UTILITY WORK

FOLLOW THESE ADDITIONAL BEST MANAGEMENT SEDIMENT CONTROL PRACTICES FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS:

(a) CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.
(b) PLACE EXCAVATED MATERIAL ON THE HIGH SIDE OF THE TRENCH.
(c) BACKFILL, COMPACT AND STABILIZE TRENCHES FOR UTILITY INSTALLATIONS AT THE END OF EACH WORKING DAY. WHEN THIS IS NOT POSSIBLE, CONFORM TO (d).
(d) PLACE TEMPORARY SILT FENCES IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

10. SENSITIVE AREAS

OBTAIN APPROVAL FROM THE ENGINEER AND COORDINATE WITH THE PERMIT HOLDERS WHO WILL COORDINATE WITH THE APPROPRIATE REGULATORY AGENCIES TO ENSURE THAT ALL PERMIT CONDITIONS ARE MET PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY WITHIN SPECIFIED SENSITIVE AREAS OF THE PROJECT. DESIGNATE A RESPONSIBLE PARTY TO MONITOR ALL WORK IN THESE AREAS TO ASSURE THAT REASONABLE CARE IS TAKEN IN OR ADJACENT TO THESE

AREAS. SENSITIVE AREAS ARE DEFINED AS FLOODPLAINS, WETLANDS (TIDAL, NONTIDAL AND ASSOCIATED BUFFERS) CRITICAL AREAS, FORESTED AREAS, ARCHEOLOGICAL SITES, HISTORIC SITES, PARKLAND AND OPEN WATER.

11. STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, COMPLETE PERMANENT OR TEMPORARY STABILIZATION WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

12. SITE INFORMATION • (NOT FOR BIDDING PURPOSES)

TOTAL AREA OF SITE	46	ACRES
AREA DISTURBED	26.3	ACRES
AREA TO BE ROOFED OR PAVED	0	ACRES
TOTAL CUT	36,058	CU. YDS.
TOTAL FILL	886	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION (IF KNOWN)		

13. INCREMENTAL STABILIZATION

REFER TO THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE INCREMENTAL STABILIZATION OF CUT AND FILLS.

14. MODIFICATIONS

SUBMIT MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROLS TO SHA FOR APPROVAL AND SUBMISSION TO MDE. OBTAIN ALL APPROVALS FROM SHA AND MDE PRIOR TO IMPLEMENTING ANY MODIFICATION.

NOTE TO CONTRACTOR:
EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAIN

1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.

2) PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

3) DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.

4) PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

5) REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.

6) RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

7) ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND /OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8) AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9) TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM: USE I-P (WATER CONTACT RECREATION, PROTECTION OF AQUATIC LIFE, AND PUBLIC WATER SUPPLY): IN-STREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.

10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11) CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

DESIGN CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND MARYLAND DEPARTMENT OF THE ENVIRONMENT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REGULATIONS.

SEAN CRAWFORD
NAME

20366
MARYLAND REGISTRATION NUMBER
P.E., R.L.S. OR R.L.A. (circle)

1/25/12
DATE

STANDARD SYMBOLS

AT-GRADE INLET PROTECTION	ROCK OUTLET PROTECTION II
BAFFLE BOARDS	ROCK OUTLET PROTECTION III
CATCH BASIN INSERT	SILT FENCE
CLEAR WATER DIVERSION PIPE	SILT FENCE ON PAVEMENT
COMBINATION INLET PROTECTION	SOD
CURB INLET PROTECTION	STABILIZED CONSTRUCTION ENTRANCE
DIVERSION FENCE	STANDARD INLET PROTECTION
EARTH DIKE	STOCKPILE AREA
EMERGENCY SPILLWAY	STONE CHECK DAM
FILTER BAG	STONE/RIPRAP OUTLET SEDIMENT TRAP ST II
FILTER BERM	SUBSURFACE DRAINS
FILTER LOG	SUMP PIT
GABION INFLOW PROTECTION	SUPER SILT FENCE
GABION INLET PROTECTION	TEMPORARY ACCESS CULVERT
LIMIT OF DISTURBANCE	TEMPORARY ASPHALT BERM
LIMIT OF PLANTING	TEMPORARY BARRIER DIVERSION
LIMIT OF WORK	TEMPORARY GABION OUTLET STRUCTURE
MEDIAN INLET PROTECTION	TEMPORARY SOIL STABILIZATION MATTING-TYPE A
MEDIAN SUMP INLET PROTECTION	TEMPORARY SOIL STABILIZATION MATTING-TYPE E
MOUNTABLE BERM	TEMPORARY SOIL STABILIZATION MATTING-TYPE D
PERIMETER DIKE/SWALE	TEMPORARY STONE OUTLET STRUCTURE
PERMANENT SOIL STABILIZATION MATTING-TYPE B	TEMPORARY SWALE
PERMANENT SOIL STABILIZATION MATTING-TYPE C	WASH RACK OPTION
PIPE OUTLET SEDIMENT TRAP ST I	CHESAPEAKE BAY CRITICAL AREA
PIPE SLOPE DRAIN	DRAINAGE BOUNDARY
PLUNGE POOL	EXISTING CONTOURS
PORTABLE SEDIMENT TANK	PROPOSED CONTOURS
REMOVABLE PUMPING STATION	TREE PROTECTION FENCE
RIPRAP INFLOW PROTECTION	WETLAND
RIPRAP OUTLET SEDIMENT TRAP ST III	WETLAND BUFFER
ROCK OUTLET PROTECTION 1	100-YEAR FLOODPLAIN

CROSS REFERENCE ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
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R / W PLAT NUMBER

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

EROSION & SEDIMENT CONTROL NOTES

SCALE NTS ADVERTISED DATE ____ CONTRACT NO. AX3765P80

DESIGNED BY MPH COUNTY MONTGOMERY COUNTY
DRAWN BY SAP LOGMILE ____
CHECKED BY SMC HORIZONTAL SCALE ____
F.A.P. NO. ____ VERTICAL SCALE ____

DRAWING NO. ES-01 OF 04 SHEET NO. 06 OF 75

COASTAL RESOURCES INC.

BY: sumanthap

SC–19 SEQUENCE OF CONSTRUCTION:

GENERAL

1. THE CONTRACTOR SHALL NOTIFY MDE AT 410–537–3510 AT LEAST SEVEN (7) DAYS BEFORE ANY LAND DISTURBING ACTIVITY AND HOLD A PRE–CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES.

2. LOD, LOP, LOW, ACCESS ROUTES, AND STAGING AREAS SHALL BE STAKED AND REVIEWED IN THE FIELD WITH THE ENGINEER PRIOR TO CONSTRUCTION TO ALLOW FOR ADJUSTMENTS. ANY ADJUSTMENT MUST BE APPROVED BY THE ENGINEER AND MDE PRIOR TO CONSTRUCTION.

3. TIMBER MATS SHALL BE PLACED BY THE CONTRACTOR TO PROTECT CRITICAL ROOT ZONES, SANITARY SEWER LINES, WETLANDS, AND OTHER SENSITIVE AREAS AS SHOWN ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER. AFTER CONSTRUCTION OF THE SCE AND STOCKPILE AND STAGING AREA, HARDWOOD MAT ACCESS ROUTES SHALL BE PLACED CONCURRENTLY SO THAT EQUIPMENT UTILIZES THE ACCESS ROUTE AS IT IS PUT IN PLACE. NO EQUIPMENT OR TRUCKS SHALL UTILIZE THE ACCESS ROUTE PAST THE STAGING AREA UNTIL HARDWOOD BARK MULCH AND TIMBER MATS ARE IN PLACE.

4. NO TREES GREATER THAN 5 INCH DBH SHALL BE REMOVED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

5. WHEN PUMP AROUND PRACTICES AND CLEAR WATER DIVERSION PIPES ARE UTILIZED, THE EXACT LOCATION OF THE PIPES AND FILTER BAG MAY BE MODIFIED IN THE FIELD BASED ON EXISTING CONDITIONS. ANY ADJUSTMENTS MUST BE APPROVED BY THE ENGINEER AND MDE.

6. DAILY GRADING WILL REQUIRE THE CONTRACTOR TO BRING ALL DISTURBED AREAS TO FINISHED GRADE DAILY AND INCORPORATE 3 INCHES OF ORGANIC LEAF COMPOST INTO THE SOIL SURFACE. GRADING SHALL GENERALLY BE COMPLETED FROM DOWNSTREAM TO UPSTREAM. CONTRACTOR MAY CREATE MICROTOPOGRAPHY DAILY AND MUST CREATE MICROTOPGRAPHY BEFORE APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM. DAILY GRADING WILL INVOLVE: A) CLEARING AND GRUBBING ROOT MAT TO 4 INCH DEPTH AND GREATER IN INVASIVE SPECIES TREATMENT AREAS; B) EXCAVATING AND SALVAGING TOPSOIL AT NINE INCH DEPTH BELOW ROOTMAT; C) EXCAVATING TO SUBGRADE ELEVATION AND SCARIFYING SUBGRADE; D) PLACING SALVAGED TOPSOIL ON SUBGRADE TO FINISHED GRADE DAILY AND INCORPORATING 3 INCHES OF ORGANIC LEAF COMPOST AT SURFACE; E) CONTINUAL PLACEMENT AND MAINTENANCE OF TIMBER MAT SPURS FOR TRUCKS TO UTILIZE SO THERE IS NO COMPACTION WHEN HAULING OUT SUBGRADE EXCAVATION. CLEAR AND GRUB IN INCREMENTS THAT CAN BE REACHED WITH THE BUCKET WITHOUT TRACKING ON GRUBBED AREAS. THERE SHALL BE NO TRACKING ON GRUBBED AREA EXCEPT AS PERMITTED AND OVERSEEN BY THE ENGINEER. THERE SHALL BE NO CUT TO SUBGRADE NECESSARY WHEN FINISHED GRADE IS LESS THAN .5 FEET BELOW EXISTING GRADE AND ADJACENT TO A WETLAND. IN THIS SCENARIO CUT TO FINISHED GRADE AND INCORPORATE ORGANICS. GRADING WITHIN 25 FEET OF WUS TO SUBGRADE DEPTH SHALL BE LESS THAN 9 INCHES BELOW FINISHED GRADE AND AS DIRECTED BY THE ENGINEER.

7. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL STABILIZE ANY DISTURBED AREA WITHIN THE LOD NOT DIRECTED TO AN EROSION AND SEDIMENT CONTROL DEVICE AND AS NOTED NEEDING SAME DAY STABILIZATION. FLEXIBLE GROWTH MEDIUM WILL BE USED FOR SAME DAY STABILIZATION AT 3000LBS PER ACRE (SEE SPECIAL PROVISION) AND MIXED WITH WETLAND/STABILIZATION SEED MIX AS DIRECTED IN THE SPECIAL PROVISION. AT THE END OF EACH WORK DAY CONTRACTOR SHALL STABILIZE ANY DISTURBED AREA WITHIN THE LOP (LIMIT OF PLANTING). THESE WORK AREAS WILL BE UTILIZED FOR PLANTING THE RIPARIAN BUFFER AND FOR INVASIVE SPECIES MANAGEMENT TREATMENTS AS DESCRIBED IN THE SPECIAL PROVISIONS. WETLAND SEED MIX WITHOUT STABILIZATION SEED SHALL BE USED IN THE LOP AND PLACED ON HARDWOOD BARK MULCH OR COVERED WITH STRAW MULCH AT THE DIRECTION OF ENGINEER.

8. WORK CAN BE CONCURRENT IN WORK AREAS: BASELINE A, BASELINE B, AND BASELINE C. PHASING AND SEQUENCE OF CONSTRUCTION ACTIVITIES ARE INDEPENDENT FOR EACH OF THE THREE WORK AREAS EXCEPT INVASIVE SPECIES TREATMENTS WHICH MUST BE COMPLETED AS FOLLOWS: ALL MANUAL INVASIVE SPECIES TREATMENT WITHIN LOP AND LOD SHALL BE COMPLETED WITHIN 45 DAYS OF NOTICE TO PROCEED. COMPLETE ALL HERBICIDE APPLICATION WITHIN 45 DAYS OF NOTICE TO PROCEED AND AT A MINIMUM 5 DAYS PRIOR TO CLEARING AND GRUBBING OF INVASIVE SPECIES AREAS. MULCH APPLICATION TO INVASIVE AREAS DOES NOT NEED TO OCCUR WITHIN 45 DAYS AND SHALL FOLLOW HERBICIDE/MANUAL TREATMENTS AND REMOVAL OF HARDWOOD TIMBER MATS. INVASIVE SPECIES TREATMENT SHALL BEGIN AT THE DOWNSTREAM END OF EACH BASELINE AND WORK BACK TO THE SCE. RIPARIAN BUFFER PLANTING SHALL NOT OCCUR UNTIL ALL INVASIVE SPECIES TREATMENTS ARE COMPLETE. WETLAND SEEDING SHALL NOT OCCUR UNTIL HERBICIDE APPLICATION IS COMPLETE IN ADJACENT AREAS WITHIN 100 FEET OF THE APPLIED WETLAND SEED MIX. CONTRACTOR SHALL PLANT RIPARIAN PLANTING BETWEEN SEPTEMBER 1 – DECEMBER 20 OR MARCH 1 – APRIL 20 AND ACCORDING THE PLANTING SCHEDULE AND ONLY UPON COMPLETION OF ALL HERBICIDE APPLICATION.

9. EROSION AND SEDIMENT CONTROLS SHALL NOT BE REMOVED WITHOUT WRITTEN APPROVAL FROM MDE AND AGREEMENT OF THE ENGINEER.

SC–19 WORK AREA: BASELINE A

PHASE 1

1. INSTALL SCE–A OFF OF WOODFIELD ROAD AND SET–UP STOCKPILE AND STAGING AREA INSTALLING SSF AROUND STOCKPILE AREA. INSTALL MAINTENANCE OF TRAFFIC SIGNAGE AS INDICATED IN CONTRACT DOCUMENTS.
2. CLEAR FOR AND INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE ALONG THE ENTIRE LENGTH OF THE LOD EXCEPT AT STREAM CROSSINGS.
3. INSTALL TREE PROTECTION MEASURES PER THE CONTRACT DOCUMENTS AND AT THE DIRECTION OF THE ENGINEER. STEP 3 CAN BE COMPLETED SUBSEQUENT WITH STEP 2.
4. READ HARDWOOD MAT ACCESS ROUTE SPECIAL PROVISION AND CLEAR FOR AND INSTALL HARDWOOD MAT ACCESS ROUTE SUBSEQUENT WITH INSTALLATION OF PHASE 1 EARTH DIKES AND MOUNTABLE BERMS. HARDWOOD MAT ACCESS ROUTE SHALL BE UNDERLAIN WITH 6 INCH THICK LAYER OF 2 INCH SCE STONE FROM STATION 100+50 – 102+50.
5. INSTALL E&S DEVICES SHOWN IN PHASE 1 SUBSEQUENT WITH INSTALLATION OF HARDWOOD MAT ACCESS ROUTES: ED–1, ED–4, MB–2, ED–6, MB–4, ED–8, MB–6, AND TIMBER MAT TO ACCESS DEBRIS REMOVAL AREA.
6. READ INVASIVE SPECIES TREATMENT SPECIAL PROVISION AND COMPLETE INVASIVE SPECIES TREATMENTS IN DESIGNATED ZONES PER THE CONTRACT DOCUMENTS, AND PER THE GENERAL NOTES IN THE SEQUENCE OF CONSTRUCTION.
7. READ DEBRIS REMOVAL SPECIAL PROVISION AND COMPLETE DEBRIS REMOVAL. REMOVE AND REPLACE TIMBER MAT ACCESS DAILY.
8. STABILIZE DISTURBED AREAS IN DEBRIS REMOVAL AREA DAILY WITH WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
9. READ SPECIAL PROVISIONS: ROADWAY EXCAVATION, TOPSOIL AND SUBSOIL, MICROTOPOGRAPHY, BRUSH PILE, AND TRUNK & BOLE HABITAT STRUCTURE. IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING OF SWALES AND ADJACENT AREAS DEPICTED IN PHASE 1 GRADING. WORK SHALL BE COMPLETED IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
10. ALL DISTURBED AREAS IN PHASE 1 SHALL REQUIRE SAME–DAY STABILIZATION WITH WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.

PHASE 2

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 2: SCE A, STAGING AREA, ED–1, ED–4, MB–2, ED–6, MB–4, ED–8, AND MB–6, TEMPORARY STOCKPILE AREA & SSF.
2. IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.

PHASE 3

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 3: SCE A, STAGING AREA, ED–1, ED–4, MB–2, ED–6, MB–4, TEMPORARY STOCKPILE AREA & SSF. REMOVE ED–8 AND MB–6 AFTER OR SUBSEQUENT WITH INSTALLATION OF SSF.
2 IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
IF TOP OF BANK GRADING CANNOT BE COMPLETED IN ONE DAY, THEN REMOVE SSF INCREMENTALLY FROM UPSTREAM TO DOWNSTREAM AND STABILIZE ALL DISTURBED AREAS DRAINING TO THE REMOVED SSF DAILY (RESTABILIZE ANY AREAS THAT ARE DISTURBED BY TRACKING FOR INCREMENTAL REMOVAL OF SSF).

PHASE 4

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 4: SCE A, STAGING AREA, ED–1, ED–4, MB–2, TEMPORARY STOCKPILE AREA & SSF. REMOVE ED–6 AND MB–4 AFTER OR SUBSEQUENT WITH INSTALLATION OF SSF.
2 IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. SUBSEQUENT WITH STEPS 2 AND 3 IN PHASE 4, INSTALL PA–3 AND COMPLETE CONCRETE REMOVAL AND INSTALLATION OF STONE TOE AND FABRIC ENCAPSULATED SOIL LIFTS AS DESCRIBED IN THE CONTRACT DOCUMENTS AND ACCORDING TO DIRECTION FROM THE ENGINEER.
5. AFTER INSTALLATION OF STONE TOE AND FABRIC ENCAPSULATED SOIL LIFTS IS COMPLETE, REMOVE PA–3.
6. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
IF TOP OF BANK GRADING CANNOT BE COMPLETED IN ONE DAY, THEN REMOVE SSF INCREMENTALLY FROM UPSTREAM TO DOWNSTREAM AND STABILIZE ALL DISTURBED AREAS DRAINING TO THE REMOVED SSF DAILY (RESTABILIZE ANY AREAS THAT ARE DISTURBED BY TRACKING FOR INCREMENTAL REMOVAL OF SSF).

PHASE 5

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 5: SCE A, STAGING AREA, ED–1, TEMPORARY STOCKPILE AREA & SSF. REMOVE ED–4 AND MB–2 AFTER OR SUBSEQUENT WITH INSTALLATION OF SSF.
2 IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. SUBSEQUENT WITH STEPS 2 AND 3 IN PHASE 4, INSTALL PA–4 AND COMPLETE CONCRETE REMOVAL AND INSTALLATION OF STONE TOE AND FABRIC ENCAPSULATED SOIL LIFTS AS DESCRIBED IN THE CONTRACT DOCUMENTS AND ACCORDING TO DIRECTION FROM THE ENGINEER.
5. AFTER INSTALLATION OF STONE TOE AND FABRIC ENCAPSULATED SOIL LIFTS IS COMPLETE, REMOVE PA–2.
6. REMOVE ED–1, SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
IF TOP OF BANK GRADING CANNOT BE COMPLETED IN ONE DAY, THEN REMOVE SSF INCREMENTALLY FROM UPSTREAM TO DOWNSTREAM AND STABILIZE ALL DISTURBED AREAS DRAINING TO THE REMOVED SSF DAILY (RESTABILIZE ANY AREAS THAT ARE DISTURBED BY TRACKING FOR INCREMENTAL REMOVAL OF SSF).
7. INSTALL PA–5 AND COMPLTE STONE TOE AND FABRIC ENCAPSULATED SOIL LIFTS ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER. STEP 7 PHASE 5 MAY BE COMPLETED OUT OF SEQUENCE WITH APPROVAL FROM ENGINEER.
8. REMOVE STAGING AND STOCKPILE AREA, OCF, AND ANY REMAINING E&S DEVICES EXCEPT SCE–A. CREATE MICROTOPOGRAPHY PITS AT SPOT ELEVATIONS SHOWN ON GRADING SHEETS IN THE LOCATION OF STOCKPILE AND STAGING AREA. APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ANY REMAINING DISTURBED AREAS.
9. REMOVE ALL E&S DEVICES EXCEPT SCE–A AND CONSTRUCTION STONE PLACED UNDER HARDWOOD MAT ACCESS ROUTE. APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ANY REMAINING DISTURBED AREAS.

SC–19 WORK AREA: BASELINE B

PHASE 1

1. INSTALL SCE–B OFF OF WOODFIELD ROAD AND SET–UP STOCKPILE AND STAGING AREA INSTALLING SSF AROUND STOCKPILE AREA. INSTALL MAINTENANCE OF TRAFFIC SIGNAGE AS INDICATED IN CONTRACT DOCUMENTS.
2. CLEAR FOR AND INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE ALONG THE ENTIRE LENGTH OF THE LOD EXCEPT AT STREAM CROSSINGS.
3. INSTALL TREE PROTECTION MEASURES PER THE CONTRACT DOCUMENTS AND AT THE DIRECTION OF THE ENGINEER. STEP 3 CAN BE COMPLETED SUBSEQUENT WITH STEP 2.
4. READ HARDWOOD MAT ACCESS ROUTE SPECIAL PROVISION AND CLEAR FOR AND INSTALL HARDWOOD MAT ACCESS ROUTE SUBSEQUENT WITH INSTALLATION OF PHASE 1 E&S DEVICES.
5. INSTALL E&S DEVICES SHOWN IN PHASE 1 SUBSEQUENT WITH INSTALLATION OF HARDWOOD MAT ACCESS ROUTES: ED–3, MB–1, SD–1, SD–2, SD–3, CWP–1, CWP–2 AND CWP–3.
6. COMPLETE INVASIVE SPECIES TREATMENTS IN DESIGNATED ZONES PER THE CONTRACT DOCUMENTS AND ACCORDING TO THE GENERAL NOTES IN THE SEQUENCE OF CONSTRUCTION.
7. INSTALL PA–1 AND PA–6.
8. CONSTRUCT LOG STEP OUTLET STRUCTURE PER THE SPECIAL PROVISIONS, APPLYING FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX DAILY TO MEET SAME DAY STABILIZATION REQUIREMENTS TO ANY DISTURBED AREAS IN PHASE 1. CONSTRUCT STONE TOE AND FABRIC ENCAPSULATED SOIL LIFTS IN FILL LOCATIONS ALONG BANK OF LOG STEP OUTLET STRUCTURE.
9. REMOVE PA–1 AND PA–6.
10. IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION. APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX DAILY TO MEET SAME DAY STABILIZATION REQUIREMENTS. THERE IS NO SALVAGE OF TOPSOIL IN BASELINE B. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER PRIOR TO APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.

PHASE 2

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 2: SCE–B, STAGING AREA, ED–3, MB–1, SD–1, SD–2, SD–3, CWP–1, CWP–2, CWP–3, SSF.
2. IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. THERE IS NO SALVAGE OF TOPSOIL IN BASELINE B. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE SSF AND ON THE SAME DAY APPLY FLEXIBLE GROWTH MEDIUM TO ANY DISTURBED NOT DIRECTED TO APPROVED E&S DEVICE.

PHASE 3

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 3: SCE–B, STAGING AREA, SD–1, SD–2, SD–3, CWP–1, CWP–2, CWP–3, SSF. REMOVE ED–3 AND MB–1 AFTER OR SUBSEQUENT TO INSTALLATION OF SSF.
2. IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. THERE IS NO SALVAGE OF TOPSOIL IN BASELINE B. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. DIG AND REMOVE DRAIN TILE AS NOTED IN THE CONTRACT DOCUMENTS. COMPLETE ANY REMAINING SPOT ELEVATION GRADING.
5. REMOVE SSF AND APPLY WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM TO ANY DISTURBED AREAS ON THE SAME DAY. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF.
6. REMOVE SD–1, SD–2, SD–3, CWP–1, CWP–2, CWP–3, SSF AT STOCKPILE LOCATION.
7. REMOVE ANY REMAINING E&S DEVICES AND OCF. REMOVE SCE–B ON WOODFIELD ROAD AND COMPLETE SAME DAY STABILIZATION OF ANY DISTURBED AREAS WITH WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.

SC–19 WORK AREA: BASELINE C

PHASE 1

1. INSTALL SCE–C OFF OF WOODFIELD ROAD AND SET–UP STOCKPILE AND STAGING AREA INSTALLING SSF AROUND STOCKPILE AREA. INSTALL MAINTENANCE OF TRAFFIC SIGNAGE AS INDICATED IN CONTRACT DOCUMENTS.
2. CLEAR FOR AND INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE ALONG THE ENTIRE LENGTH OF THE LOD EXCEPT AT STREAM CROSSINGS.
3. INSTALL TREE PROTECTION MEASURES PER THE CONTRACT DOCUMENTS AND AT THE DIRECTION OF THE ENGINEER. STEP 3 CAN BE COMPLETED SUBSEQUENT WITH STEP 2.
4. READ HARDWOOD MAT ACCESS ROUTE SPECIAL PROVISION AND CLEAR FOR AND INSTALL HARDWOOD MAT ACCESS ROUTE SUBSEQUENT WITH INSTALLATION OF PHASE 1 EARTH DIKES AND MOUNTABLE BERMS.
5. INSTALL E&S DEVICES SHOWN IN PHASE 1 SUBSEQUENT WITH INSTALLATION OF HARDWOOD MAT ACCESS ROUTES: ED–2, ED–5, MB–3, ED–7, MB–5, ED–9, AND MB–7.
6. READ INVASIVE SPECIES TREATMENT SPECIAL PROVISION AND COMPLETE INVASIVE SPECIES TREATMENTS IN DESIGNATED ZONES PER THE CONTRACT DOCUMENTS, AND PER THE GENERAL NOTES IN THE SEQUENCE OF CONSTRUCTION, AND AS DIRECTED BY THE ENGINEER.
7. INSTALL PA–2.
8. CONSTRUCT LOG STEP OUTLET STRUCTURE PER THE SPECIAL PROVISIONS, APPLYING FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX DAILY TO MEET SAME DAY STABILIZATION REQUIREMENTS TO ANY DISTURBED AREAS IN PHASE 1.
9. REMOVE PA–2.

PHASE 2

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 2: SCE–C, STAGING AREA, ED–2, ED–5, MB–3, ED–7, MB–5, ED–9, MB–7, TEMPORARY STOCKPILE AREA & SSF.
2. IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE AND RESET SSF AT APPROXIMATE STATION 318+00 IN ORDER TO COMPLETE GRADIND IN HEADCUT PER NOTE ON ES2–03.
5. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.

PHASE 3

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 3: SCE C, STAGING AREA, ED–2, ED–5, MB–3, ED–7, MB–5, TEMPORARY STOCKPILE AREA & SSF. REMOVE ED–9 AND MB–7 AFTER OR SUBSEQUENT WITH INSTALLATION OF SSF.
2 IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
IF TOP OF BANK GRADING CANNOT BE COMPLETED IN ONE DAY, THEN REMOVE SSF INCREMENTALLY FROM UPSTREAM TO DOWNSTREAM AND STABILIZE ALL DISTURBED AREAS DRAINING TO THE REMOVED SSF DAILY (RESTABILIZE ANY AREAS THAT ARE DISTURBED BY TRACKING FOR INCREMENTAL REMOVAL OF SSF).

PHASE 4

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 4: SCE C, ED–2 ED–5, MB–3, TEMPORARY STOCKPILE AREA & SSF. REMOVE ED–7 AND MB–5 AFTER OR SUBSEQUENT WITH INSTALLATION OF SSF.
2 IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
IF TOP OF BANK GRADING CANNOT BE COMPLETED IN ONE DAY, THEN REMOVE SSF INCREMENTALLY FROM UPSTREAM TO DOWNSTREAM AND STABILIZE ALL DISTURBED AREAS DRAINING TO THE REMOVED SSF DAILY (RESTABILIZE ANY AREAS THAT ARE DISTURBED BY TRACKING FOR INCREMENTAL REMOVAL OF SSF).

PHASE 5

1. INSTALL AND/OR MAINTAIN E&S DEVICES AS SHOWN IN PHASE 5: SCE C, ED–2, TEMPORARY STOCKPILE AREA & SSF. REMOVE ED–5 AND MB–3 AFTER OR SUBSEQUENT WITH INSTALLATION OF SSF.
2 IDENTIFY DAILY GRADING AREAS TO BE COMPLETED AT THE END OF EACH WORK DAY. COMPLETE GRADING ACTIVITIES IN DAILY INCREMENTS ACCORDING TO THE NOTES IN THE GENERAL SECTION OF THE SEQUENCE OF CONSTRUCTION.
3. CREATE MICROTOPOGRAPHY FEATURES AND ROUGHNESS FEATURES AS DIRECTED IN THE CONTRACT DOCUMENTS OR BY THE ENGINEER.
4. REMOVE SSF AND COMPLETE GRADING ALONG TOP OF BANK WITH TOOTHLESS BUCKET. USE ALL SALVAGE FROM TOP OF BANK GRADING TO CREATE MOUNDS. ON THE SAME DAY AS REMOVAL OF SSF, APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ALL DISTURBED AREAS. PREVIOUSLY DISTURBED AREAS MAY BE STABILIZED PRIOR TO REMOVAL OF SSF BUT SHALL NOT BE TRACKED ON AFTER APPLICATION OF WETLAND/STABILIZATION SEED MIX AND FLEXIBLE GROWTH MEDIUM.
IF TOP OF BANK GRADING CANNOT BE COMPLETED IN ONE DAY, THEN REMOVE SSF INCREMENTALLY FROM UPSTREAM TO DOWNSTREAM AND STABILIZE ALL DISTURBED AREAS DRAINING TO THE REMOVED SSF DAILY (RESTABILIZE ANY AREAS THAT ARE DISTURBED BY TRACKING FOR INCREMENTAL REMOVAL OF SSF).
5. REMOVE STAGING AND STOCKPILE AREA, OCF, AND ANY REMAINING E&S DEVICES EXCEPT SCE–C. CREATE MICROTOPOGRAPHY PITS AT SPOT ELEVATIONS SHOWN ON GRADING SHEETS IN THE LOCATION OF STOCKPILE AND STAGING AREA. APPLY FLEXIBLE GROWTH MEDIUM AND WETLAND/STABILIZATION SEED MIX TO ANY REMAINING DISTURBED AREAS.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19
WETLAND MITIGATION PROJECT

CROSS REFERENCE		R / W PLAT NUMBER	REVISIONS
ITEM	SHEET NOs.		
WETLAND DETAILS	03–05		
EROSION & SEDIMENT CONTROL NOTES	06–09		
GEOMETRIC LAYOUT	10–11		
GRADING SHEETS	12–16		
SOIL BORING LOGS	17–19		
WETLAND PROFILES	20–30		
EROSION & SEDIMENT CONTROL	31–51		
INVASIVE SPECIES TREATMENT	52		
LANDSCAPING PLAN	53		
WETLAND CROSS SECTIONS	54–67		

EROSION & SEDIMENT CONTROL NOTES

SCALE NTS ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY	MPH	COUNTY	MONTGOMERY COUNTY
DRAWN BY	SAP	LOGMILE	
CHECKED BY	SMC	HORIZONTAL SCALE	
F.A.P. NO.		VERTICAL SCALE	

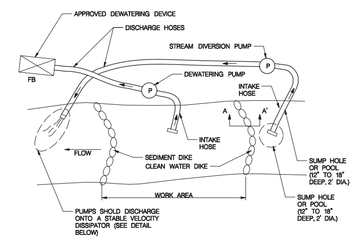
DRAWING NO. ES–02 OF 04 SHEET NO. 07 OF 67

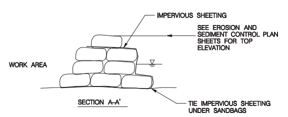
PLOTTED: Friday, March 02, 2012 AT 11:42 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-N002_sc-19.dgn

SHEET REVISION DATE: NOVEMBER 24, 2010

BY: sumanthap –

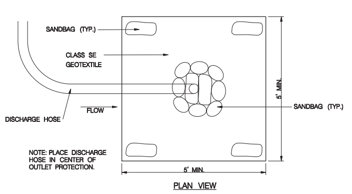
COASTAL RESOURCES INC.

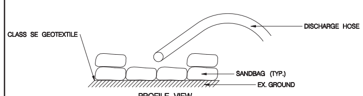




PUMP AROUND DETAIL 1.2

NOT TO SCALE





OUTLET PROTECTION (FOR PUMP-AROUND PRACTICE)

NOT TO SCALE

NOTE:
THE SYMBOL FOR OUTLET PROTECTION IS: (P)

MGWC 1.2: PUMP-AROUND PRACTICE

DESCRIPTION The work shall consist of installing a temporary pump around and supporting measures to divert flow around instream construction sites.

IMPLEMENTATION SEQUENCE Sediment control measures, pump-around practices, and associated channel and bank construction shall be completed in the following sequence (refer to Detail 1.2):

1. Construction activities including the installation of erosion and sediment control measures shall not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities shall be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and shall repair the damage at his/her own expense to the county's or utility company's satisfaction.

2. The contractor shall notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor shall inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.

3. The contractor shall conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor shall stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees shall not be removed within the limit of disturbance without approval from the WMA or local authority.

4. Construction shall not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor shall stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.

5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor shall begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor shall only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work shall not be conducted in the channel during rain events.

6. Sandbag dikes shall be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow shall be pumped around the work area. The pump shall discharge onto a stable velocity dissipater made of riprap or sandbags. Temporary measure for dewatering inchannel construction sites.

7. Water from the work area shall be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure shall be located such that the water drains back into the channel below the downstream sandbag dike.

8. Traversing a channel reach with equipment within the work area where no work is proposed shall be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures shall be used to minimize disturbance to the channel. Temporary stream crossings shall be used only when necessary and shall be used only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).

9. All stream restoration measures shall be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.

10. After an area is completed and stabilized, the clean water dike shall be removed. After the first sediment flush, a new clean water dike shall be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike shall be removed.

11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This shall be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water shall discharge onto the same velocity dissipater used for the main stem pump around.

12. If a tributary is to be restored, construction shall take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, shall follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem shall resume. Water from the tributary shall continue to be pumped around the work area in the main stem.

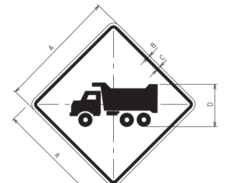
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.

14. After construction, all disturbed areas shall be regraded and revegetated as per the planting plan.

15. If, in the judgment of the engineer, inadequate energy dissipation or channel bed erosion is occurring, the contractor shall be required to increase the material or placement size of the outfall protection at the direction of the engineer.

16. The condition of the outlet protection sandbags is to be checked twice per day (start of work day and mid-day) to ensure that sand is not escaping bags. Damaged or leaking bags are to be removed and replaced.

17. Outfall protection materials and geotextile shall be removed from the channel at the completion of each construction stage.



NOTE: FOR SYMBOL DESIGN CONTACT SHA SIGN SHOP.

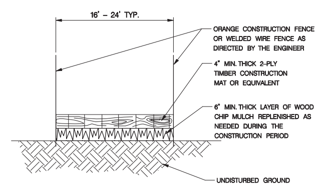
REFERENCES: MdMUTCD SECTION- 6F.34

COLORS:
LEGEND - BLACK
BACKGROUND - FLUORESCENT ORANGE

SIGN SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
STD	48	3/4	1-1/4	20	3

TRUCK CROSSING SIGN

NOT TO SCALE

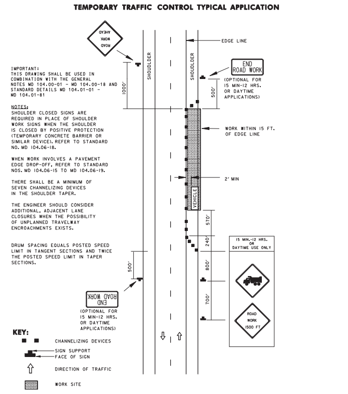


1. TIMBER MATS TO BE INSTALLED AS INDICATED ON CONSTRUCTION DOCUMENTS.

TIMBER MAT ACCESS ROUTE

NOT TO SCALE

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

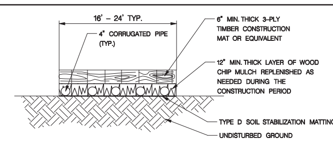
THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

DRUM SPACING EQUALS POSTED SPEED LIMIT IN TANGENT SECTIONS AND TWICE THE POSTED SPEED LIMIT IN TAPER SECTIONS.

KEY:
CHANNELIZING DEVICES
SIGN SUPPORT
FACE OF SIGN
DIRECTION OF TRAFFIC
WORK SITE

MODIFIED STANDARD NO. 104.02-01 SHOULDER WORK 2-LANE, 2-WAY GREATER THAN 40 MPH

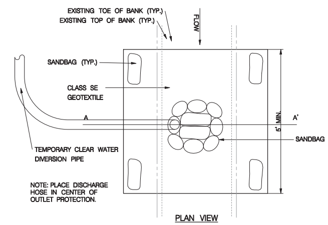
NOT TO SCALE

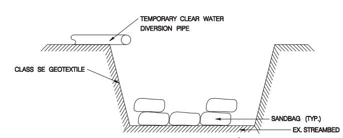


1. SWALE CROSSING SHALL BE USED WHERE THE MULCH ACCESS ROAD IS SHOWN CROSSING SWALES.
2. 4" CORRUGATED PIPES SHALL BE PLACED PERPENDICULAR TO THE MULCH ACCESS ROAD AND SPACED AT A MAXIMUM DISTANCE OF 4' APART. THE CONTRACTOR SHALL MANTAIN THE PIPES AND ENSURE THAT THEY DO NOT BECOME OBSTRUCTED THROUGHOUT THE LIFE OF THE PROJECT.
3. THE CONTRACTOR SHALL MAINTAIN MULCH ACCESS ROADS THROUGHOUT CONSTRUCTION. UPON COMPLETION OF THE PROJECT, PIPES SHALL BE FULLY REMOVED.

SWALE CROSSING

NOT TO SCALE





OUTLET PROTECTION (FOR TEMPORARY PIPE)

NOT TO SCALE

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

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WETLAND CROSS SECTIONS	54-67		

EROSION & SEDIMENT CONTROL DETAILS

SCALE NTS ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ____
COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. ES-03 OF 04 SHEET NO. 08 OF 67

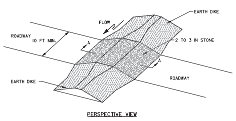
PLOTTED: Friday, March 02, 2012 AT 04:04 PM
FILE: G:\ACTIVE\2005-03 ICC GEC\ES CM CS\SC-B\CAD\2011\pES-D001_sc-19.dgn

BY: sumanthap -

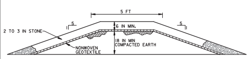
COASTAL RESOURCES INC.

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



PERSPECTIVE VIEW



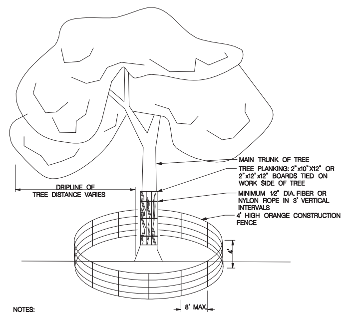
SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM LENGTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE STONE (2 TO 3 INCH) OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

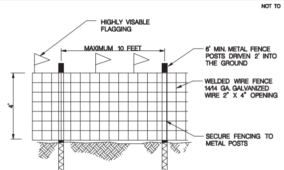


NOTES:

1. FOR TREE PROTECTION PLANKING AS DIRECTED BY THE ENGINEER, TIE WITH 1/2" DIA. ROPE (FIBER OR NYLON) SUFFICIENT 2"x10"x12" or 2"x12"x12" BOARDS AROUND MAIN TRUNK OF TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION.
2. INSTALL WIRE EYE BOLTS FIRMLY IN EACH PLANK WHERE FIBER OR NYLON ROPES CROSS OVER PLANKS.
3. WHERE SIGNIFICANT TREE BRANCHES EXIST WHICH PREVENT PLANK INSTALLATION PLANKING SHALL EXTEND TO THE ELEVATION OF THE LOWEST BRANCH.
4. ORANGE CONSTRUCTION FENCING WILL BE PLACED 5' FROM TRUNK AS INDICATED ON THE PLANS IN HIGH TRAFFIC OR AREAS OF CONCERN. OCF WILL BE REPLACED BY TREE PROTECTION FENCE AS DESCRIBED IN THE TREE PROTECTION FENCE DETAIL.
5. O.C.F. FENCE POST MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE POST HEIGHT.

SPECIAL TREE PROTECTION DETAIL

NOT TO SCALE



STANDARD SYMBOL:
—TPF—TPF—

NOTES:

1. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL PROGRAM
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ENGINEER.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICES.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE IS REQUIRED.
6. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE

NOT TO SCALE

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

EROSION & SEDIMENT CONTROL DETAILS

SCALE NTS ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ____
COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. ES-04 OF 04 SHEET NO. 09 OF 67

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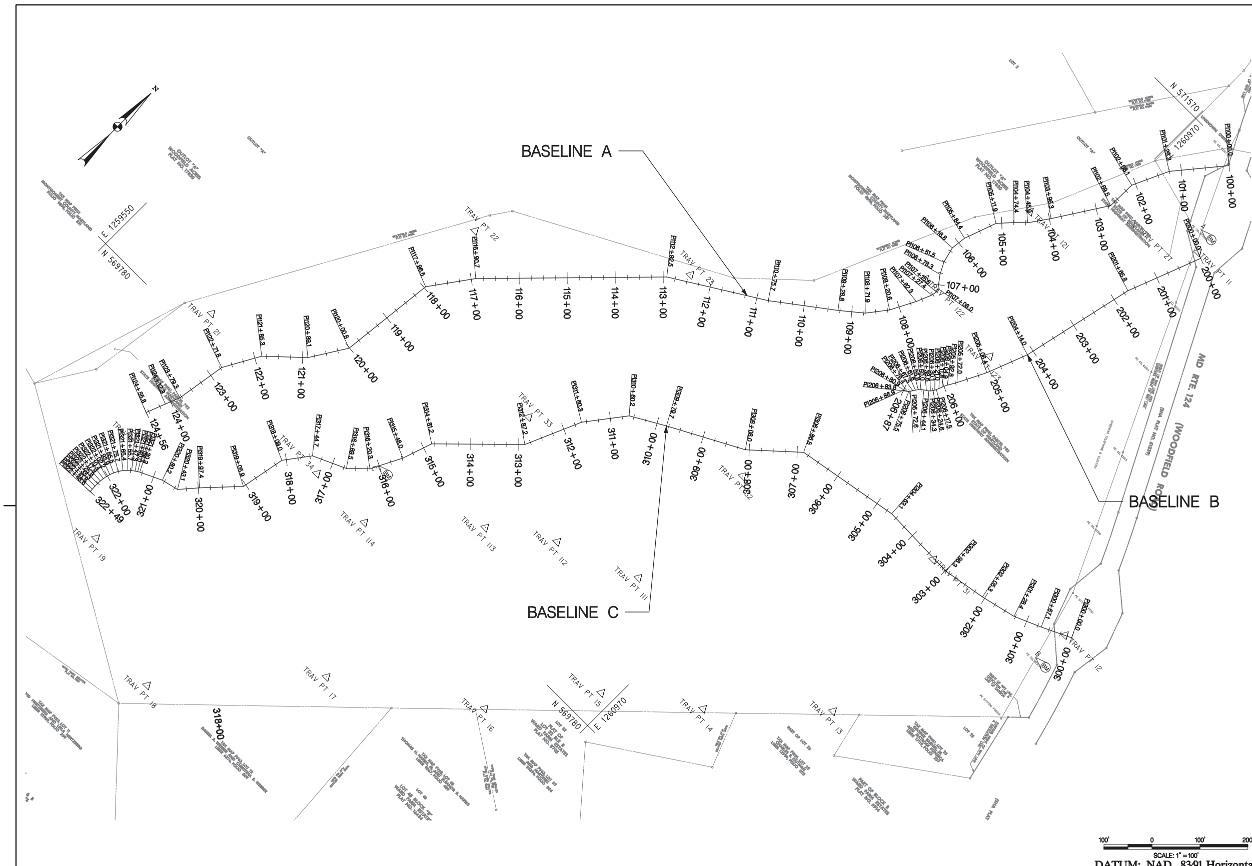
BY: sumanthap -

COASTAL RESOURCES INC.



DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

QUANTITY NOTES

Traverse Point Table			
Traverse Point	Easting	Northing	Elevation
A	1261144.0434	571413.8409	429.6907
B	1261259.8786	570539.7458	429.0742
C	1260277.5366	569854.1460	420.8789
11	1261171.6013	571376.0137	428.7280
12	1261539.6474	570615.9788	428.7930
13	1261310.1473	570162.4441	428.5290
14	1261115.2892	569974.5324	424.7290
15	1260941.7454	569847.8407	421.8840
16	1260793.2028	569653.3093	421.5500
17	1260513.7953	569467.0295	420.1050
18	1260261.8305	569190.4157	418.0950
19	1259969.8178	569332.1011	415.2360
20	1259873.8412	569548.0651	416.7860
21	1259809.0283	569833.2190	416.7680
22	1260075.0740	570342.8899	419.8500
23	1260457.1838	570595.4592	420.9720
27	1261031.8844	571321.0047	426.4610
31	1261234.3391	570533.6496	424.1740
32	1260830.4573	570375.8333	421.8200
33	1268428.6321	570147.7223	419.8550
34	1260200.1282	569752.3714	417.5820
111	1260827.0622	570072.5101	420.5360
112	1260654.3405	570005.7479	419.6780
113	1260527.2953	569920.7963	418.7970
114	1260342.0281	569750.2788	417.5500
121	1260864.1114	571188.5630	428.1310
122	1260809.0452	570934.9730	424.2440
123	1261017.7745	570916.2998	423.7060

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

GEOMETRIC LAYOUT SHEET

SCALE 1" = 100' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SAP, MPH
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. GE-01 OF 02 SHEET NO. 10 OF 67

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
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R /W PLAT NUMBER

REVISIONS

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FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pGE-P001_sc-19.dgn

COASTAL RESOURCES INC.

BY: sumanthap -

QUANTITY NOTES

CONTROL LINE DATA - Baseline A											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
	S 39°26'13" W	125.27'	571549.49	1261089.40		100+00.00					
	S 24°50'13" W	82.87'	571452.74	1261009.82		101+25.27					
	S 1°00'18" W	61.41'	571377.54	1260975.02		102+08.13					
	S 32°42'25" W	126.78'	571316.14	1260973.94		102+69.54					
	S 34°54'06" W	49.62'	571209.47	1260905.44		103+96.32					
	S 45°52'24" W	28.47'	571168.78	1260877.05		104+45.94					
	S 42°13'38" W	37.51'	571148.95	1260856.61		104+74.41					
	S 19°49'44" W	72.50'	571121.18	1260831.40		105+11.92					
	S 6°27'22" W	32.36'	571052.98	1260806.81		105+84.41					
	S 14°08'39" E	34.71'	571020.83	1260803.17		106+16.77					
	S 28°10'45" E	26.84'	570987.16	1260811.65		106+51.49					
	S 36°32'10" E	29.72'	570963.51	1260824.33		106+78.32					
	S 19°51'21" E	7.75'	570939.63	1260842.02		107+08.04					
	S 10°31'33" W	11.65'	570932.34	1260844.65		107+15.79					
	S 22°37'57" W	34.90'	570920.88	1260842.52		107+27.44					
	S 27°15'54" W	58.22'	570888.67	1260829.09		107+62.35					
	S 37°40'33" W	51.38'	570836.92	1260802.42		108+20.56					
	S 50°37'32" W	56.86'	570796.26	1260771.02		108+71.94					
	S 52°59'09" W	146.85'	570760.18	1260727.06		109+28.81					
	S 58°09'12" W	216.82'	570671.77	1260609.80		110+75.66					
	S 44°32'03" W	398.18'	570557.37	1260425.62		112+92.48					
	S 35°49'11" W	105.79'	570273.53	1260146.36		116+90.67					
	S 6°08'07" W	204.34'	570187.75	1260084.45		117+96.46					
	S 32°09'46" W	88.28'	569984.57	1260062.61		120+00.80					
	S 46°45'29" W	96.21'	569909.84	1260015.61		120+89.08					
	S 29°02'14" W	86.55'	569843.93	1259945.53		121+85.29					
	S 9°11'06" W	107.47'	569768.26	1259903.52		122+71.84					
	S 21°47'44" W	33.02'	569662.17	1259886.36		123+79.31					
	S 21°01'31" W	43.44'	569631.51	1259874.11		124+12.33					
			569590.96	1259858.52		124+55.77					

CONTROL LINE DATA - Baseline B											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
	S 20°55'47" W	165.75'	571371.07	1261184.32		200+00.00					
	S 12°32'50" W	248.23'	571216.26	1261125.11		201+65.75					
	S 21°07'39" W	92.46'	570973.96	1261071.18		204+13.98					
	S 26°42'12" W	65.53'	570887.72	1261037.86		205+06.44					
	S 29°34'26" W	20.84'	570829.18	1261008.41		205+71.96					
	S 24°55'30" W	12.09'	570811.05	1260998.13		205+92.80					
	S 21°42'45" W	6.92'	570800.09	1260993.03		206+04.89					
	S 19°38'58" W	5.68'	570793.66	1260990.47		206+11.81					
	S 26°25'43" W	3.53'	570788.31	1260988.56		206+17.49					
	S 33°47'37" W	3.56'	570785.15	1260986.99		206+21.02					
	S 38°23'57" W	5.49'	570782.19	1260985.01		206+24.58					
	S 47°43'13" W	4.26'	570777.89	1260981.60		206+30.07					
	S 53°50'21" W	4.22'	570775.02	1260978.45		206+34.33					
	S 55°17'14" W	5.53'	570772.53	1260975.04		206+38.55					
	S 51°32'30" W	5.90'	570769.38	1260970.49		206+44.08					
	S 42°02'56" W	5.81'	570765.71	1260965.87		206+49.99					
	S 38°47'19" W	5.84'	570761.40	1260961.98		206+55.80					
	S 33°44'24" W	5.71'	570756.84	1260958.32		206+61.64					
	S 32°32'58" W	5.27'	570752.10	1260955.15		206+67.34					
	S 37°39'31" W	2.90'	570747.66	1260952.32		206+72.61					
	S 43°05'05" W	2.84'	570745.36	1260950.55		206+75.51					
	S 50°39'38" W	2.54'	570743.29	1260948.60		206+78.35					
	S 57°58'03" W	2.95'	570741.67	1260946.64		206+80.90					
	S 70°15'59" W	3.07'	570740.11	1260944.14		206+83.84					
			570739.08	1260941.25		206+86.91					

CONTROL LINE DATA - Baseline C											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
	S 64°21'07" W	67.14'	570621.96	1261553.42		300+00.00					
	S 66°36'20" W	61.24'	570592.90	1261492.90		300+67.14					
	S 76°33'29" W	76.97'	570568.59	1261436.70		301+28.37					
	S 80°17'01" W	92.98'	570550.70	1261361.84		302+05.34					
	N 88°22'27" W	164.75'	570535.00	1261270.19		302+98.32					
	S 79°53'46" W	223.39'	570539.68	1261105.51		304+63.07					
	S 47°34'26" W	121.54'	570500.49	1260885.58		306+86.46					
	S 61°49'57" W	171.70'	570418.49	1260795.86		308+08.01					
	S 60°11'22" W	80.50'	570337.44	1260644.50		309+79.70					
	S 37°17'12" W	100.11'	570297.42	1260574.66		310+60.20					
	S 23°31'05" W	126.87'	570217.77	1260514.01		311+60.31					
	S 45°22'12" W	194.06'	570101.44	1260463.38		312+87.19					
	S 18°53'27" W	66.78'	569965.10	1260325.28		314+81.25					
	S 26°56'05" W	72.31'	569901.92	1260303.65		315+48.03					
	S 45°33'19" W	49.13'	569837.46	1260270.90		316+20.33					
	S 65°30'00" W	75.20'	569803.06	1260235.83		316+69.46					
	S 36°38'18" W	64.38'	569771.87	1260167.40		317+44.66					
	S 10°58'30" W	96.83'	569720.21	1260128.98		318+09.04					
	S 43°08'19" W	91.48'	569625.16	1260110.55		319+05.87					
	S 40°52'10" W	45.76'	569558.40	1260047.99		319+97.35					
	S 76°21'02" W	37.08'	569523.79	1260018.05		320+43.12					
	S 64°15'40" W	50.01'	569515.04	1259982.01		320+80.20					
	S 61°29'01" W	4.53'	569493.33	1259936.96		321+30.21					
	S 57°50'26" W	5.29'	569491.16	1259932.98		321+34.74					
	S 53°45'00" W	7.27'	569488.35	1259928.51		321+40.03					
	S 47°04'12" W	8.40'	569484.05	1259922.65		321+47.29					
	S 43°00'11" W	9.72'	569478.33	1259916.50		321+55.69					
	S 33°57'57" W	10.30'	569471.22	1259909.87		321+65.41					
	S 27°08'26" W	9.74'	569462.68	1259904.12		321+75.71					
	S 21°29'16" W	8.49'	569454.01	1259899.67		321+85.45					
	S 16°07'04" W	8.21'	569446.11	1259896.56		321+93.94					
	S 11°54'42" W	8.22'	569438.23	1259894.28		322+02.15					
	S 5°27'56" W	7.50'	569430.18	1259892.59		322+10.37					
	S 1°45'05" W	7.89'	569422.71	1259891.87		322+17.87					
	S 1°51'42" E	7.58'	569414.83	1259891.63		322+25.77					
	S 1°11'22" E	8.48'	569407.25	1259891.88		322+33.35					
	S 2°49'52" E	6.76'	569398.77	1259892.05		322+41.83					
			569392.02	1259892.39		322+48.59					

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

GEOMETRIC LAYOUT NOTES

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
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R / W PLAT NUMBER

REVISIONS

SCALE NTS ADVERTISED DATE CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY AEB, SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. GE-02 OF 02 SHEET NO. 11 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:44 AM
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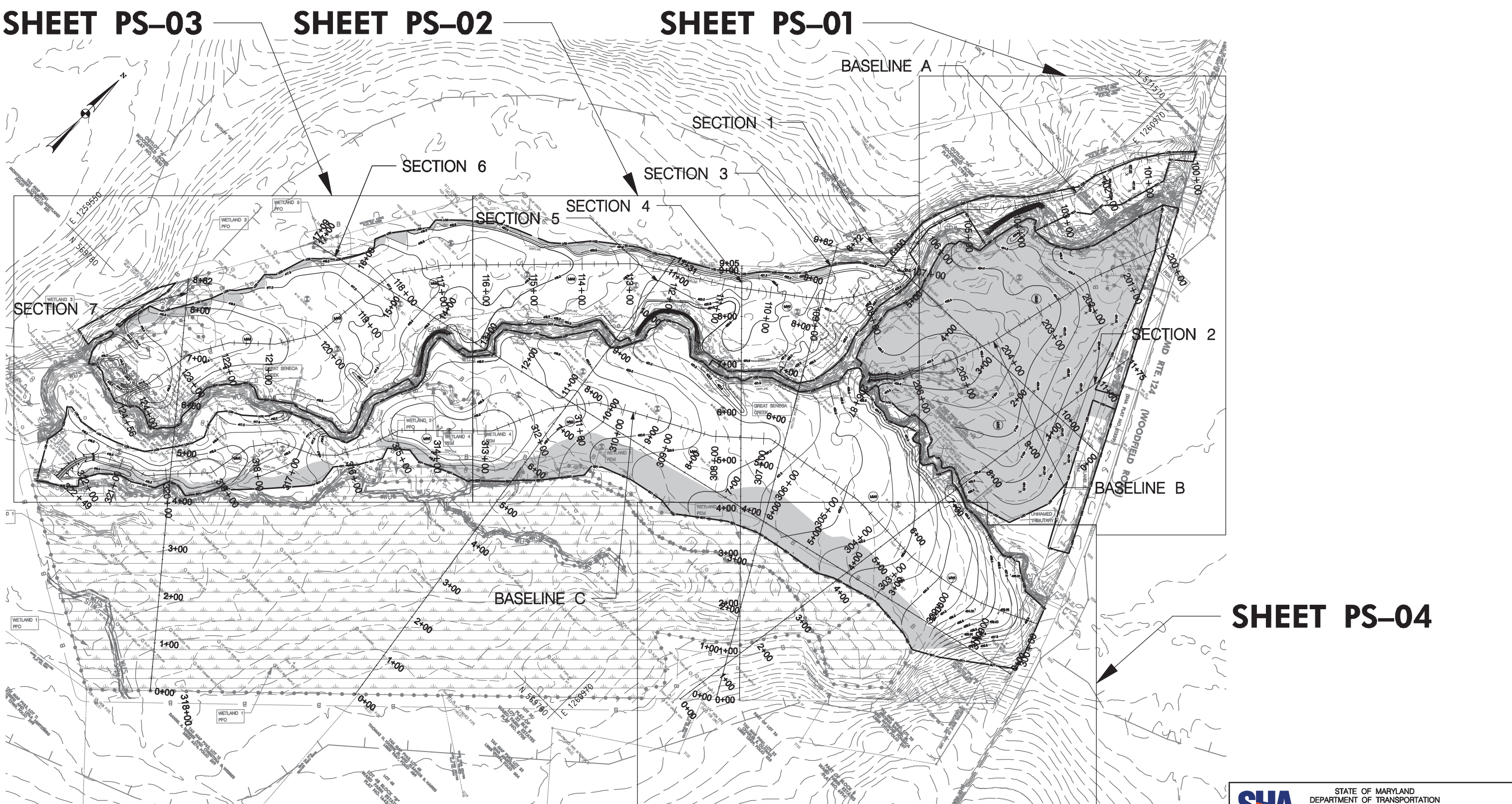
BY: sumanthap –

COASTAL RESOURCES INC.



SCALE: 1" = 100'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

= AREAS THAT DO NOT REQUIRE SALVAGE AND PLACE TOPSOIL.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19
WETLAND MITIGATION PROJECT

GRADING SHEET LAYOUT PLAN

SCALE 1" = 100' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______
COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. OV–01 OF 01 SHEET NO. 12 OF 67

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03–05
EROSION & SEDIMENT CONTROL NOTES	06–09
GEOMETRIC LAYOUT	10–11
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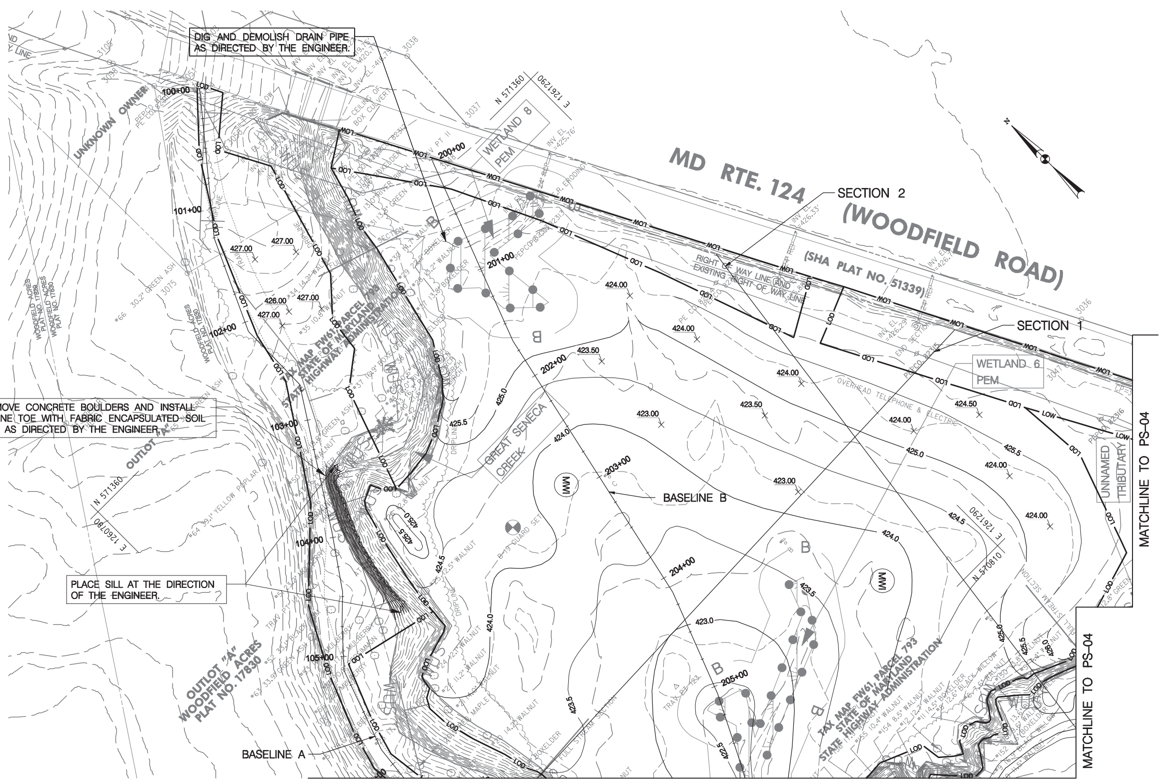
R / W PLAT NUMBER

REVISIONS

PLOTTED: Friday, March 02, 2012 AT 11:44 AM
FILE: g:\active\2005-03 loc geo\es cm cs\so-b\cad\2011\pGM-0000_so-19.dgn

BY: sumanthap –

COASTAL RESOURCES INC.



MATCHLINE TO PS-02

LEGEND

- LOG STEP OUTLET
- SOIL BORING LOCATION
- (MWI) PROPOSED MONITORING WELL
- 100.00 SPOT ELEVATION PIT
- STONE TOE STRUCTURE

COASTAL RESOURCES INC.

BY: sumanthap –

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

QUANTITY NOTES

SCHEDULE OF MATERIALS

ITEM	LOCATION	QUANTITY
MONITORING WELL INSTALLATION	BASELINE B: 202+91 27R	16 LF
	BASELINE B: 204+70 16L	
STONE TOE	BASELINE A: 103+42 15L TO BASELINE A: 104+61 69L	67 TONS

GRADING TABLE

BASELINE	STATION FROM	STATION TO	EXCAVATION CLASS I TOTAL (CY)	TOPSOIL WITH MICROTOPOGRAPH TOTAL (SY)	MICROTOPOGRAPHY TOTAL (SY)
BASELINE A	100+00	106+15	23	3,496	0
BASELINE B	200+26	205+60	2,635	0	23,807
BASELINE C	SEE SHEET 4				

BASELINE	STATION FROM	STATION TO	ORGANIC LEAF COMPOST TOTAL (SY)	FLEXIBLE GROWTH MEDIUM TOTAL (SY)
BASELINE A	100+00	106+15	3,496	3,496
BASELINE B	200+26	205+60	23,807	23,807
BASELINE C	SEE SHEET 4			

GENERAL NOTES:

1. REMOVE ALL SOIL AND GRUBBED ROOTMAT WHEN GRADING IN INVASIVE SPECIES AREA AS DIRECTED BY THE ENGINEER. SEE IV-01 OF 01 (SHEET 60) FOR INVASIVE SPECIES TREATMENT AREAS.
2. FLUSH CUT, GRADE AROUND, OR REMOVE TREES ALONG BANK AS DIRECTED BY THE ENGINEER AND SALVAGE FOR BRUSH PILE CREATION.

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

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GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

GRADING SHEET

SCALE 1" = 40' ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY AEB
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-01 OF 04 SHEET NO. 13 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:45 AM
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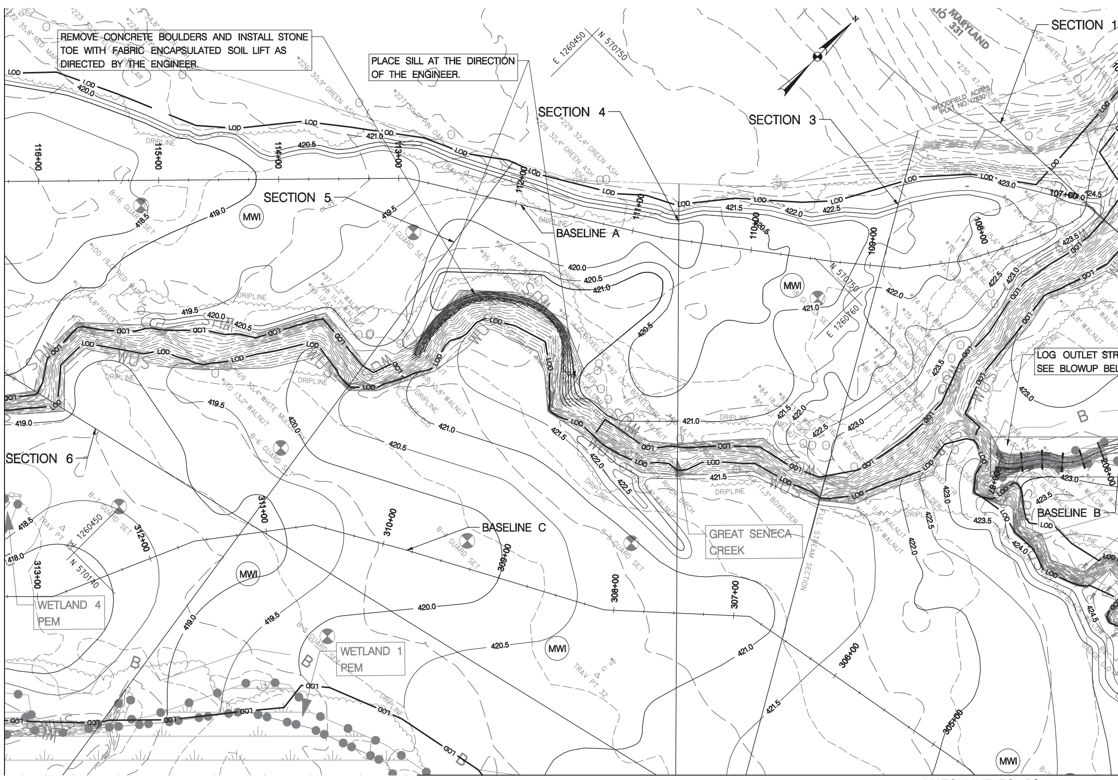
QUANTITY NOTES

SCHEDULE OF MATERIALS		
ITEM	LOCATION	QUANTITY
MONITORING WELL INSTALLATION	BASELINE A: 114+23 31L	40 LF
	BASELINE A: 109+62 24L	
	BASELINE C: 304+87 28R	
	BASELINE C: 311+20 33L	
	BASELINE C: 308+36 42L	
STONE TOE	BASELINE A: 111+19 130L TO BASELINE A: 112+55 142L	95 TONS
STONE TOE	BASELINE B: 206+69 4L TO BASELINE B: 206+87 10L	12 TONS

GRADING TABLE					
BASELINE	STATION FROM	STATION TO	EXCAVATION CLASS I TOTAL (CY)	TOPSOIL WITH MICROTOPOGRAPH TOTAL (SY)	MICROTOPOGRAPHY TOTAL (SY)
BASELINE A	106+15	116+29	7,889	17,827	789
BASELINE B	205+40	206+87	392	0	2,516
BASELINE C	304+57	313+27	15,499	24,384	3,895

BASELINE	STATION FROM	STATION TO	ORGANIC LEAF COMPOST TOTAL (SY)	FLEXIBLE GROWTH MEDIUM TOTAL (SY)
BASELINE A	100+00	106+15	18,615	18,615
BASELINE B	200+26	205+80	2,516	2,516
BASELINE C	304+57	313+27	28,060	28,060



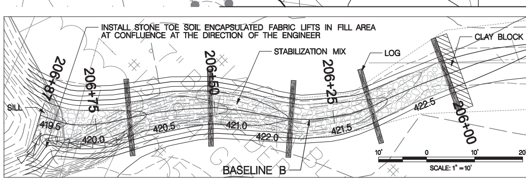
MATCHLINE TO PS-04

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

GENERAL NOTES:
1. REMOVE ALL SOIL AND GRUBBED ROOTMAT WHEN GRADING IN INVASIVE SPECIES AREA AS DIRECTED BY THE ENGINEER. SEE IV-01 OF 01 (SHEET 60) FOR INVASIVE SPECIES TREATMENT AREAS.
2. FLUSH CUT, GRADE AROUND, OR REMOVE TREES ALONG BANK AS DIRECTED BY THE ENGINEER AND SALVAGE FOR BRUSH PILE CREATION.

LEGEND
- LOG STEP OUTLET
- SOIL BORING LOCATION
- MWI PROPOSED MONITORING WELL
- 100.00 SPOT ELEVATION PIT
- STONE TOE STRUCTURE



CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R/W PLAT NUMBER

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

GRADING SHEET

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY AEB
F.A.P. NO.

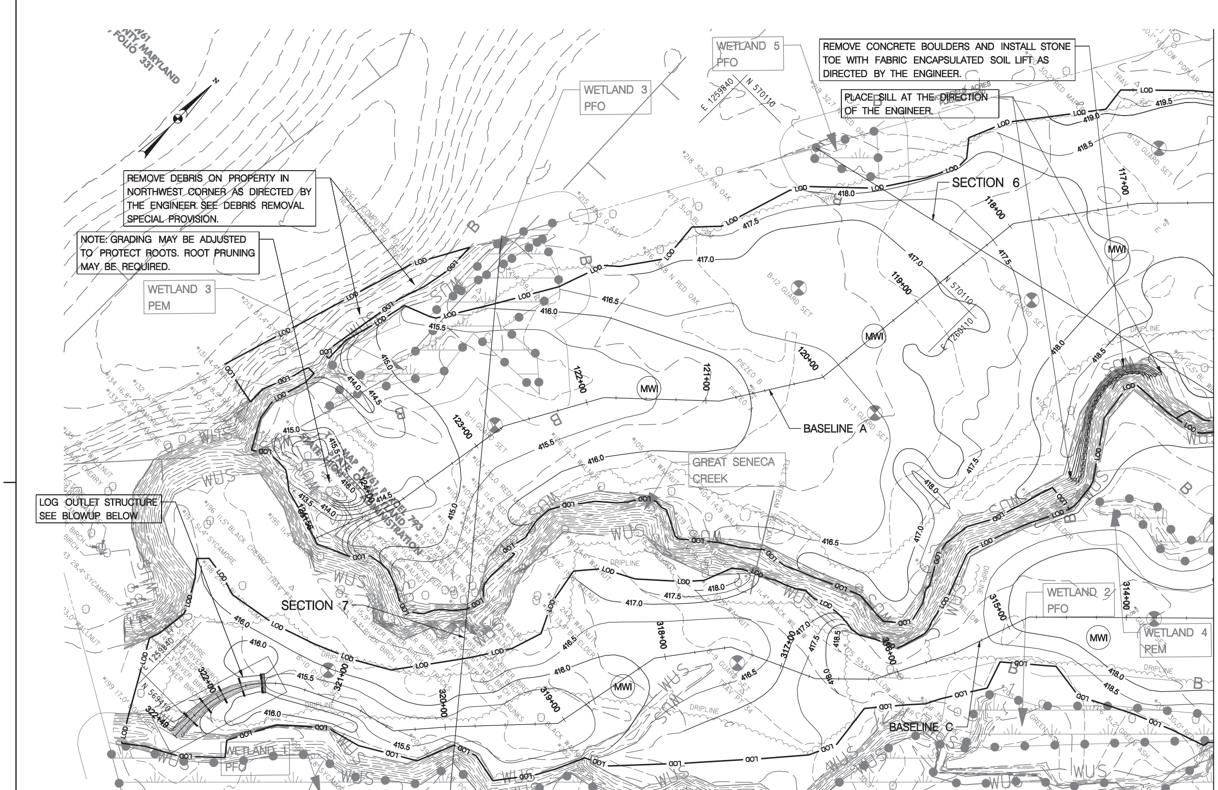
COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-02 OF 04 SHEET NO. 14 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:45 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pWT-P002_sc-19.dgn

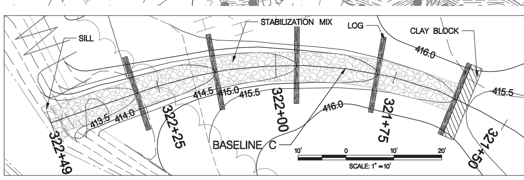
COASTAL RESOURCES INC.

BY: sumanthap -



LEGEND

- LOG STEP OUTLET
- SOIL BORING LOCATION
- (MWI) PROPOSED MONITORING WELL
- 100.00 SPOT ELEVATION PIT
- STONE TOE STRUCTURE



SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

QUANTITY NOTES

SCHEDULE OF MATERIALS		
ITEM	LOCATION	QUANTITY
MONITORING WELL INSTALLATION	BASELINE A: 121+48 9R	40 LF
	BASELINE A: 119+46 0	
	BASELINE A: 117+15 34L	
	BASELINE C: 314+23 17L	
	BASELINE C: 318+44 5L	
STONE TOE	BASELINE A: 118+73 142L TO BASELINE A: 117+84 217L	88 TONS

GRADING TABLE					
BASELINE	STATION FROM	STATION TO	EXCAVATION CLASS I TOTAL (CY)	TOPSOIL WITH MICROTOPOGRAPH TOTAL (SY)	MICROTOPOGRAPHY TOTAL (SY)
BASELINE A	116+29	124+56	9,096	21,946	1,126
BASELINE C	313+27	322+49	2,542	10,704	1,862

BASELINE	STATION FROM	STATION TO	ORGANIC LEAF COMPOST TOTAL (SY)	FLEXIBLE GROWTH MEDIUM TOTAL (SY)
BASELINE A	100+00	108+15	23,074	23,074
BASELINE C	200+28	205+80	12,686	12,686

GENERAL NOTES:

1. REMOVE ALL SOIL AND GRUBBED ROOTMAT WHEN GRADING IN INVASIVE SPECIES AREA AS DIRECTED BY THE ENGINEER. SEE IV-01 OF 01 (SHEET 60) FOR INVASIVE SPECIES TREATMENT AREAS.
2. FLUSH CUT, GRADE AROUND, OR REMOVE TREES ALONG BANK AS DIRECTED BY THE ENGINEER AND SALVAGE FOR BRUSH PILE CREATION.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

GRADING SHEET

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY AEB
F.A.P. NO. ______
COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. PS-03 OF 04 SHEET NO. 15 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:45 AM
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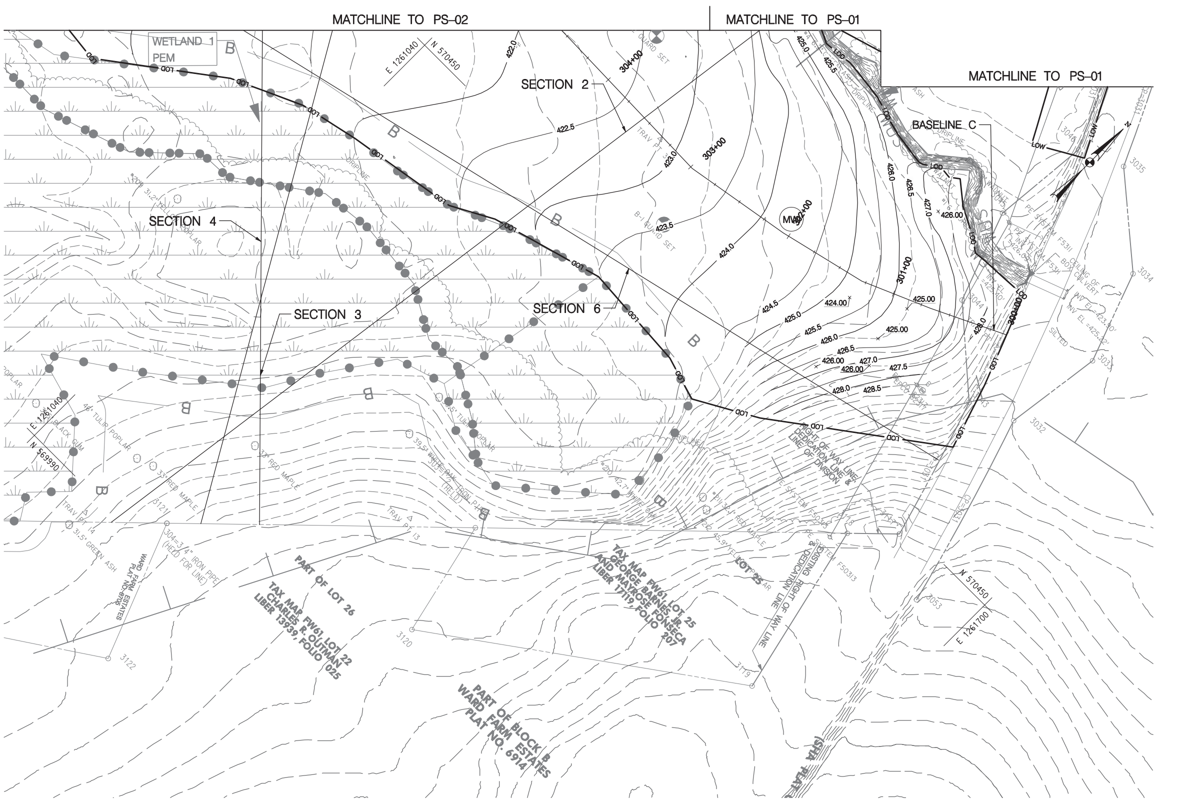
COASTAL RESOURCES INC.

BY: sumanthap -



LEGEND

- LOG STEP OUTLET
- SOIL BORING LOCATION
- (MWI) PROPOSED MONITORING WELL
- 100.00 SPOT ELEVATION PIT
- STONE TOE STRUCTURE

BY: sumanthap –

COASTAL RESOURCES INC.

QUANTITY NOTES

SCHEDULE OF MATERIALS		
ITEM	LOCATION	QUANTITY
MONITORING WELL INSTALLATION	BASELINE C: 302+06 13R	8 LF

GRADING TABLE					
BASELINE	STATION		EXCAVATION CLASS I	TOPSOIL WITH MICROTOPOGRAPH	MICROTOPOGRAPHY
	FROM	TO	TOTAL (CY)	TOTAL (SY)	TOTAL (SY)
BASELINE B	SEE SHEET 7				
BASELINE C	300+00	304+57	2,886	10,606	4,541

BASELINE	STATION		ORGANIC LEAF COMPOST	TOPSOIL WITH MICROTOPOGRAPH
	FROM	TO	TOTAL (SY)	TOTAL (SY)
BASELINE B	SEE SHEET 7			
BASELINE C	300+00	304+57	15,197	15,197

GENERAL NOTES:

1. REMOVE ALL SOIL AND GRUBBED ROOTMAT WHEN GRADING IN INVASIVE SPECIES AREA AS DIRECTED BY THE ENGINEER. SEE IV-01 OF 01 (SHEET 60) FOR INVASIVE SPECIES TREATMENT AREAS.
2. FLUSH CUT, GRADE AROUND, OR REMOVE TREES ALONG BANK AS DIRECTED BY THE ENGINEER AND SALVAGE FOR BRUSH PILE CREATION.

40' 0 40' 80'
SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

GRADING SHEET

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP, AEB
CHECKED BY ______
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. PS-04 OF 04 SHEET NO. 16 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:45 AM
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SHA 73.0-46
8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-01 Station/Offset Coordinates N 570485.3 E 1261285.8

Boring By E2CR, INC Driller Joey Chalk Rig Type CME 450 Rig No.
Surface Elevation 424.0 Date Started 7/14/11 Date Completed 7/14/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
5.2	418.8	0.1	7/14/11
3.2	420.8	24	7/15/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
1.0	423.00	SILT, trace sand, moist, brown (Topsoil/Fill) (ML,A-7-6(15), Silty Clay Loam); Silty SAND with gravel, moist, brown, light gray and tan (SM,A-2-4(0))		3-4 5-7	0.0-2.0	20	NMC=31.0 %, LL=41 PI=10, % Passing #200=95
				3-2 5-5	2.0-4.0	19	
				6-1 7-6	4.0-6.0	15	NMC=13.0%, LL=27 PI=4, % Passing #200=29
6.0	418.00	SILT, with rock fragments, and sand, moist to wet, dark gray and brown (Residual)		6-10 17-17	6.0-8.0	20	Water during drilling: 6 ft
				13-15 19-16	8.0-10.0	20	
10.0	414.00	Bottom of Boring @ 10 feet					End of Drilling Water: 5.2 ft Caved: 5.6 ft; Reading after 24 hr Water: 3.2 ft Caved: 4.3 ft

SHA 73.0-46
8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-02 Station/Offset Coordinates N 570562.2 E 1261171.1

Boring By E2CR, INC Driller Joey Chalk Rig Type CME 450 Rig No.
Surface Elevation 424.3 Date Started 7/14/11 Date Completed 7/14/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
5.0	419.3	0.1	7/14/11
4.0	420.3	24	7/15/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
		SILT, trace sand, moist/brown, contains organic (Topsoil/Fill) (ML, A-4(7), Silt Loam)		2-2 3-6	0.0-2.0	16	NMC=26.0%, LL=31 PI=7, % Passing #200=97
3.0	421.30	Silty Clayey SAND, trace gravel, moist, brown (SC-SM, A-4(0) Sandy Loam)		2-4 5-7	2.0-4.0	16	NMC=16.1%, LL=23 PI=6, % Passing #200=38
5.0	419.30	Silty GRAVEL, with sand, moist to wet, brown and dark gray (GM,A-1-b)		7-6 5-8	4.0-6.0	22	NMC=11.6%, LL=30 PI=6, % Passing #200 =15
				5-6 5-5	6.0-8.0	20	Water during drilling: 7 ft
				3-11 6-13	8.0-10.0	16	
9.5	414.80	Sandy LEAN CLAY, with rock fragments, wet, dark gray (Residual)					
10.0	414.30	Bottom of Boring @ 10 feet					End of Drilling Water: 5.0 ft Caved: 8.2 ft; Reading after 24 hr Water: 4.0 ft Caved: 5.4 ft

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8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-03 Station/Offset Coordinates N 570473.8 E 1260772.8

Boring By E2CR, INC Driller Eddie Hill Rig Type CME 450 Rig No.
Surface Elevation 422.0 Date Started 7/12/11 Date Completed 7/12/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
4.3	417.7	0.1	7/12/11
4.3	417.7	48	7/14/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
		SILT, trace sand, dry, brown, contains roots and organic (Topsoil/Fill)		3-3 4-5	0.0-2.0	21	
2.0	420.00	Silty SAND, trace gravel, moist, gray and brown		2-6 5-5	2.0-4.0	24	
4.0	418.00	Silty Clayey SAND, trace to with gravel, moist, brown, dark gray, tan and tan		2-1 3-8	4.0-6.0	19	
6.0	416.00	Silty Sand, trace rock fragments, moist to wet, gray (Residual)		8-6 5-5	6.0-8.0	18	Water during drilling: 7.5 ft
				5-8 11-20	8.0-10.0	24	
10.0	412.00	Bottom of Boring @ 10 feet					End of Drilling Water: 4.3 ft Caved: 7.0 ft; Reading after 24 hr Water: 4.3 ft Caved: 6.3 ft

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8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-04 Station/Offset Coordinates N 570378.5 E 1260674.5

Boring By E2CR, INC Driller Joey Chalk Rig Type CME 450 Rig No.
Surface Elevation 421.3 Date Started 7/14/11 Date Completed 7/14/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
		0.1	7/14/11
4.3	417.0	24	7/15/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
		SILT, trace sand, moist, brown (Topsoil/Fill) (ML,A-7-5(21))		1-2 4-4	0.0-2.0	16	NMC=25.0 %, LL=46 PI=16, % Passing #200=98
2.5	418.80	SILT, trace to with sand, moist, light gray (ML,A-7-5(13))		2-4 5-6	2.0-4.0	18	NMC=16.6%, LL=42 PI=14, % Passing #200=63
5.0	416.30	SILT, with gravel, moist to wet, tan and light gray		3-5 4-6	4.0-6.0	22	
				4-6 6-12	6.0-8.0	16	
				11-13 12-12	8.0-10.0	6	Water during drilling: Dry
10.0	411.30	Bottom of Boring @ 10 feet					End of Drilling Water: Dry Caved: 3.5 ft; Reading after 24 hr Water: 4.3 ft Caved: 5.1 ft

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8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-05 Station/Offset Coordinates N 570259.9 E 1260648.5

Boring By E2CR, INC Driller Joey Chalk Rig Type CME 450 Rig No.
Surface Elevation 420.7 Date Started 7/14/11 Date Completed 7/14/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
5.0	415.7	0.1	7/14/11
3.7	417.0	24	7/15/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
1.0	419.70	SILT, trace sand, moist, brown (Topsoil/Fill) (ML,A-4(11))		3-4 4-6	0.0-2.0	14	NMC=27.0%, LL=36 PI=11, % Passing #200=93
		LEAN CLAY, trace sand, moist, tan and orange-brown (Fill) (CL,A-6(11))					NMC=22.2%, LL=37 PI=12, % Passing #200=86
3.0	417.70	Sandy SILT, with gravel, tan and gray (ML,A-7-5(6))		2-3 4-6	2.0-4.0	16	NMC=22.3%, LL=46 PI=16, % Passing #200=54
4.0	416.70	Silty SAND, with gravel, moist to wet, brown gray and light gray (SM, A-1-b)		5-8 7-6	4.0-6.0	22	NMC=14.8%, LL=26 PI=6, % Passing #200 =17
				5-5 5-6	6.0-8.0	16	Water during drilling: 7 ft
		Hum colored, contains mica at 7.0 ft					
9.0	411.70	Silty Rock fragments, with sand, moist to wet, dark gray (Residual)		3-7 10-22	8.0-10.0	17	
10.0	410.70	Bottom of Boring @ 10 feet					End of Drilling Water: 5.0 ft Caved: 5.3 ft; Reading after 24 hr Water: 3.7 ft Caved: 4.7 ft

SHA 73.0-46
8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-06 Station/Offset Coordinates N 570523.6 E 1260509.9

Boring By E2CR, INC Driller Eddie Hill Rig Type CME 450 Rig No.
Surface Elevation 421.7 Date Started 7/12/11 Date Completed 7/12/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
4.0	416.5	0.1	7/12/11
4.3	416.8	48	7/14/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
		LEAN CLAY, trace sand, contains roots and organic, moist to wet, brown (Topsoil/Fill) (CL,A-6(14))		2-2 5-6	0.0-2.0	16	NMC=22.7%, LL=34 PI=13, % Passing #200=94
2.0	419.70	SILT, trace sand, trace gravel, wet, gray (ML, A-7-6(18))		2-3 3-5	2.0-4.0	19	NMC=28.3%, LL=48 PI=15, % Passing #200=92
4.0	417.70	Silty GRAVEL, with sand, moist, brown (GM,A-2-4(0))		5-3 4-4	4.0-6.0	10	NMC=10.4%, LL=32 PI=6, % Passing #200 =23
6.0	415.70	Poorly graded SAND with gravel, wet, brown		7-5 8-9	6.0-8.0	10	Water during drilling: 7 ft
				5-5 5-6	8.0-10.0	3	
10.0	411.70	Bottom of Boring @ 10 feet					End of Drilling Water: 4.0 ft Caved: 5.0 ft; Reading after 24 hr Water: 4.3 ft Caved: 5.0 ft

SHA 73.0-46
8-25-2008

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-07 Station/Offset Coordinates N 570193.7 E 1260449.2

Boring By E2CR, INC Driller Eddie Hill Rig Type CME 450 Rig No.
Surface Elevation 419.9 Date Started 7/12/11 Date Completed 7/12/11
Drive Hammer 140 LB. Casing Auger Size 3.25 IN. Size of Core ___ IN. Size of Bit OD ___ IN. Core Barrel Type ___ Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
5.5	414.4	0.1	7/12/11
3.3	416.6	48	7/14/11

Boring and Sampling Conforms to AASHTO T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON: SAMPLE NO.	SPOON: BLOWS	SPOON: DEPTH	RECOVERY	REMARKS
		SILT, trace sand, contains organic, wet, brown (Topsoil/Fill) (ML, A-7-6(16), Silty Clay Loam)		2-2 3-3	0.0-2.0	20	NMC=32.2%, LL=42 PI=13, % Passing #200=92
2.0	417.90	SILT, with sand, contains rock, moist to wet, red-brown and gray (ML, A-7-5(11))		2-3 3-3	2.0-4.0	20	NMC=31.7%, LL=44 PI=16, % Passing #200=75
4.0	415.90	Silty SAND, with gravel, moist, orange-brown and gray (SM, A-2-4(0))		4-3 4-5	4.0-6.0	12	NMC=23.4 %, LL=34 PI=8, % Passing #200 =17
6.0	413.90	Poorly graded GRAVEL, with sand, wet, brown		7-15 10-13	6.0-8.0	10	Water during drilling: 7 ft
8.0	411.90	Clayey SAND, with rock fragments, wet, brown (Residual)		16-12 14-14	8.0-10.0	21	
10.0	409.90	Bottom of Boring @ 10 feet					End of Drilling Water: 5.5 ft Caved: 6.2 ft; Reading after 24 hr Water: 3.3 ft Caved: 4.0 ft

NOTE: THE CONTRACTOR IS ADVISED THAT THE GREAT SENECA CREEK AND TRIBUTARIES ARE A DYNAMIC STREAM SYSTEM THAT EXPERIENCES INCREASED WATER VOLUME AND VELOCITY DURING STORM EVENTS. GROUNDWATER LEVELS WITHIN THE WETLAND FLUCTUATE SEASONALLY AND IN RESPONSE TO PRECIPITATION EVENTS. GROUNDWATER LEVELS MAY RISE TO WITHIN THE GRADING LIMITS DURING CONSTRUCTION. ALL WORK IN PROGRESS MUST BE MAINTAINED ACCORDINGLY TO PROTECT DOWNSTREAM RESOURCES. SOIL BORINGS AND GROUNDWATER TABLE REPRESENT A SINGLE POINT IN TIME. WATER LEVELS ADJUST SEASONALLY AND ACCORDING TO PRECIPITATION. THIS IS A WETLAND CREATION PROJECT AND GROUNDWATER MAY FLUCTUATE INTO GRADING. WATER ELEVATIONS ARE NOT WARRANTIED.

COASTAL RESOURCES INC.

BY: sumanthap –

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

REVISIONS

SOIL BORING LOGS

SCALE NTS ADVERTISED DATE ___ CONTRACT NO. AX3765P60

DESIGNED BY ___ COUNTY MONTGOMERY COUNTY
DRAWN BY ___ LOGMILE ___
CHECKED BY ___ HORIZONTAL SCALE ___
F.A.P. NO. ___ VERTICAL SCALE ___

DRAWING NO. SO-01 OF 03 SHEET NO. 17 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:46 AM
FILE: g:\active\2005-03 icc geo\es cm cs\so-b\cad\2011\pSO-0001_so-19.dgn

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

SHA 73.0-46

Sheet 1 of 1 · Boring of 368

Contract No. AX3765P60 · Project Description: ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek

Boring No. SC-19 B-08 · Station/Offset · Coordinates N 570037.7 E 1260160.7

Boring By: E2CR, INC · Driller: Eddie Hill · Rig Type: CME 450 · Drive Hammer: 140 LB. · Casing Auger Size: 3.25 IN. · Auger Depth: 8

Surface Elevation: 419.0 · Date Started: 7/12/11 · Date Completed: 7/12/11

Boring and Sampling Conforms to AASHTO: T-206, T-207

WATER TABLE

Depth	Elev.	Time (Hours)	Date
4.8	414.2	0.1	7/12/11
3.5	415.5	48	7/14/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
2.0	417.00	LEAN CLAY, with sand, contains roots and organic, moist, brown (Topsoil?) (CL, A-4(10))
4.0	415.00	Clayey GRAVEL, with sand, contains organic, moist, orange-brown and brown (GC, A-4(1))
6.0	413.00	Silty SAND with gravel, moist, brown and gray (SM, A-1-b)
8.0	411.00	Sandy SILT, with gravel, moist, gray
10.0	409.00	Poorly graded GRAVEL, with sand, wet, brown
		Bottom of Boring @ 10 feet

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Boring No. SC-19 B-09 · Coordinates N 569766.3 E 1259943.9 · Surface Elevation 417.4 · Date Started 7/12/11 · Date Completed 7/12/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
2.0	415.40	SILT, trace sand, contains roots and organic matter, moist, brown (Topsoil?) (ML, A-7-6(15))
4.0	413.40	Silty SAND with gravel, moist, tan and gray (SM, A-2-4(0))
6.0	411.40	Silty to Clayey GRAVEL, with sand, wet, gray and brown (GC-GM, A-1-b)
8.0	409.40	Sandy LEAN CLAY, with gravel, wet, brown
10.0	407.40	LEAN CLAY, trace sand, moist, red-brown (Residual)
		Bottom of Boring @ 10 feet

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Boring No. SC-19 B-10 · Coordinates N 569520.8 E 1259807.7 · Surface Elevation 416.1 · Date Started 7/12/11 · Date Completed 7/12/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
2.0	414.10	SILT, trace sand, trace roots, moist to wet, brown (Topsoil?) (ML, A-7-6(20), Silty Clay Loam)
4.0	412.10	LEAN CLAY with sand, moist, gray and brown (CL, A-6(11))
6.0	410.10	Sandy SILT, trace gravel, moist, gray and dark gray (ML, A-7-5(5))
8.0	408.10	Silty SAND with gravel, wet, brown
10.0	406.10	Poorly graded SAND with gravel, wet, brown
		Bottom of Boring @ 10 feet

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Boring No. SC-19 B-11 · Coordinates N 569763.5 E 1259995.9 · Surface Elevation 416.9 · Date Started 7/11/11 · Date Completed 7/11/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
2.0	414.90	Silty CLAY with sand, moist to wet, brown (Topsoil?) (CL-ML, A-4(0))
5.5	411.40	SILT, with sand, moist to wet, brown and gray (ML, A-4(1))
6.0	410.90	Silty GRAVEL, with sand, contains organic, moist to wet, brown, gray and dark gray (GM, A-1-a)
8.0	408.90	Silty SAND, with gravel, wet, brown
10.0	406.90	Poorly graded SAND with gravel, wet, brown
		Bottom of Boring @ 10 feet

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Boring No. SC-19 B-12 · Coordinates N 570023.3 E 1260114.3 · Surface Elevation 417.8 · Date Started 7/5/11 · Date Completed 7/5/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
1.0	416.80	SILT, trace sand, moist, brown (Topsoil?) (ML, A-7-6(16))
5.0	412.80	SILT, trace sand, trace gravel, moist, tan and light gray (ML, A-7-6(19))
7.0	410.80	Silty Clayey GRAVEL, with sand, moist to wet, brown and tan (GC-GM, A-2-4(0))
10.0	407.80	SILT, trace sand and rock fragments, moist, brown, tan and gray; with rock fragments, tan and brown at 9.2 ft
		Bottom of Boring @ 10 feet

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Boring No. SC-19 B-13 · Coordinates N 569994.5 E 1260140.3 · Surface Elevation 417.8 · Date Started 7/11/11 · Date Completed 7/11/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
2.0	415.80	SILT, trace sand, trace roots and organic, moist, red-brown (Topsoil?) (ML, A-7-6(20))
4.0	413.80	Sandy SILT, trace gravel, moist, gray (ML, A-4(0))
6.0	411.80	Silty Clayey GRAVEL, with sand, moist, red-brown and tan (GC-GM, A-1-b)
8.0	409.80	SILT, trace sand, micaceous, moist, gray and dark gray
10.0	407.80	SILT, with rock fragments, moist, red-brown and gray
		Bottom of Boring @ 10 feet

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Boring No. SC-19 B-14 · Coordinates N 570153.3 E 1260125.8 · Surface Elevation 420.1 · Date Started 7/5/11 · Date Completed 7/5/11

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION
		SILT, trace sand, moist, brown (Topsoil?) (ML, A-7-6(19))
		SILT, trace gravel, moist, tan and light gray
		Silty SAND, with gravel, moist to wet, brown (SM, A-2-4(0))
10.0		
		Bottom of Boring @ 10 feet

COASTAL RESOURCES INC.

BY: sumanthap

NOTE: THE CONTRACTOR IS ADVISED THAT THE GREAT SENECA CREEK AND TRIBUTARIES ARE A DYNAMIC STREAM SYSTEM THAT EXPERIENCES INCREASED WATER VOLUME AND VELOCITY DURING STORM EVENTS. GROUNDWATER LEVELS WITHIN THE WETLAND FLUCTUATE SEASONALLY AND IN RESPONSE TO PRECIPITATION EVENTS. GROUNDWATER LEVELS MAY RISE TO WITHIN THE GRADING LIMITS DURING CONSTRUCTION. ALL WORK IN PROGRESS MUST BE MAINTAINED ACCORDINGLY TO PROTECT DOWNSTREAM RESOURCES. SOIL BORINGS AND GROUNDWATER TABLE REPRESENT A SINGLE POINT IN TIME. WATER LEVELS ADJUST SEASONALLY AND ACCORDING TO PRECIPITATION. THIS IS A WETLAND CREATION PROJECT AND GROUNDWATER MAY FLUCTUATE INTO GRADING. WATER ELEVATIONS ARE NOT WARRANTIED.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

REVISIONS

SOIL BORING LOGS

SCALE NTS · ADVERTISED DATE · CONTRACT NO. AX3765P60

DESIGNED BY · COUNTY MONTGOMERY COUNTY
DRAWN BY · LOGMILE
CHECKED BY · HORIZONTAL SCALE
F.A.P. NO. · VERTICAL SCALE

DRAWING NO. SO-02 OF 03 · SHEET NO. 18 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:47 AM
FILE: g:\active\2005-03 icc geo\es cm cs\sc-b\cad\2011\pSO-0002_sc-19.dgn

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

SHA 73.0-46 8-25-2000

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description: ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek
Boring No. SC-19 B-15 Station/Offset Coordinates N 570317.8 E 1280284.7
Boring By E2CR, INC
Surface Elevation 419.8 Date Started 7/11/11 Date Completed 7/11/11
Driller Eddie Hill; Rig Type CME 450; Rig No.; Drive Hammer 140 LB.; Casing Auger Size 3.25 IN.; Size of Core IN.; Size of Bit OD IN.; Core Barrel Type; Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
3.4	416.4	0.1	7/11/11

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SAMPLE NO.	BLOWS	DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		SILT, trace sand, contains roots and organics, moist, brown to red brown (Topsoil/Fill) (ML, A-7-5(20))		3-3 3-3	0.0-2.0	6	NMC=40.5%, LL=47 PI=11, % Passing #200=[illegible]
2.0	417.80	Silty SAND, with gravel, moist, brown and orange-brown (SM, A-2-4(0))		3-3 7-6	2.0-4.0	21	NMC=11.8%, LL=29 PI=8, % Passing #200=[illegible]
		(SM, A-1-b)		4-5 4-5	4.0-6.0	21	NMC=15.3%, LL=[illegible] PI=[illegible], % Passing #200=[illegible]
6.0	413.80	Silty GRAVEL, with sand, wet, red-brown and brown		5-6 8-7	6.0-8.0	10	Water during drilling: [illegible] ft
8.0	411.80	Silty SAND, with gravel, wet, red-brown		5-4 4-7	8.0-10.0	10	
10.0	409.80	Bottom of Boring @ 10 feet					End of Drilling: Water: 3.4 ft, Caved: 3.5 ft

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

SHA 73.0-46 8-25-2000

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description: ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek
Boring No. SC-19 B-16 Station/Offset Coordinates N 570384.3 E 1280460.8
Boring By E2CR, INC
Surface Elevation 420.3 Date Started 7/7/11 Date Completed 7/7/11
Driller Eddie Hill; Rig Type CME 450; Rig No.; Drive Hammer 140 LB.; Casing Auger Size 3.25 IN.; Size of Core IN.; Size of Bit OD IN.; Core Barrel Type; Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
7.2	413.1	0.1	7/7/11
3.4	416.9	24	7/8/11

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SAMPLE NO.	BLOWS	DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		LEAN CLAY, trace sand, moist, brown, red-brown and dark gray (Topsoil/Fill) (CL, A-4(5), Silty Clay)		2-3 4-4	0.0-2.0	24	NMC=13.4%, LL=[illegible] PI=[illegible], % Passing #200=[illegible]
2.0	418.30	Silty Clayey SAND, with gravel, moist, tan and light gray (SC-SM, A-2-4(0))		2-2 4-4	2.0-4.0	20	NMC=[illegible], LL=28 PI=7, % Passing #200=[illegible]
5.0	415.30	Silty CLAY, with sand and gravel, moist to wet, tan and dark gray (CL-ML, A-4(2))		2-4 7-9	4.0-6.0	10	NMC=28.1%, LL=[illegible] PI=[illegible], % Passing #200=[illegible]
7.5	412.80	SILT, trace sand, moist brown and tan		5-5 8-9	6.0-8.0	12	Water during drilling: [illegible] ft
		dark gray and brown at 9.5 ft		12-9 10-10	8.0-10.0	10	
10.0	410.30	Bottom of Boring @ 10 feet					End of Drilling: Water: 7.2 ft, Caved: 8.1 ft. Reading after 24 hr: Water: 3.4 ft, Caved: 5.2 ft

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

SHA 73.0-46 8-25-2000

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description: ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek
Boring No. SC-19 B-17 Station/Offset Coordinates N 570526.7 E 1280738
Boring By E2CR, INC
Surface Elevation 421.7 Date Started 7/7/11 Date Completed 7/7/11
Driller Eddie Hill; Rig Type CME 450; Rig No.; Drive Hammer 140 LB.; Casing Auger Size 3.25 IN.; Size of Core IN.; Size of Bit OD IN.; Core Barrel Type; Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
5.5	416.2	0.1	7/7/11
4.0	417.7	24	7/8/11

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SAMPLE NO.	BLOWS	DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		SILT, trace sand, moist, brown (Topsoil/Fill) (ML, A-7-6(16))		2-2 3-3	0.0-2.0	16	NMC=32.3%, LL=[illegible] PI=[illegible], % Passing #200=[illegible]
2.0	419.70	Sandy LEAN CLAY, moist, brown (Fill) (ML, A-7-6(12))		1-1 1-2	2.0-4.0	16	NMC=[illegible], LL=[illegible] PI=[illegible], % Passing #200=[illegible]
3.5	418.20	SILT, trace sand, moist, dark gray (SC-SM, A-1-b)		2-2 3-3	4.0-6.0	14	NMC=15.1%, LL=[illegible] PI=[illegible], % Passing #200=[illegible]
5.0	416.70	Silty Clayey SAND, with gravel, wet, dark gray		5-7 7-5	6.0-8.0	8	Water during drilling: 4.5 ft
				4-5 8-4	8.0-10.0	20	
9.5	412.20	Sandy SILT, with rock fragments, moist, dark gray and brown					
10.0	411.70	Bottom of Boring @ 10 feet					End of Drilling: Water: 5.5 ft, Caved: 7.3 ft. Reading after 24 hr: Water: 4.0 ft, Caved: 4.6 ft

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

SHA 73.0-46 8-25-2000

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description: ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek
Boring No. SC-19 B-18 Station/Offset Coordinates N 570727.9 E 1280738
Boring By E2CR, INC
Surface Elevation 422.5 Date Started 7/7/11 Date Completed 7/7/11
Driller Eddie Hill; Rig Type CME 450; Rig No.; Drive Hammer 140 LB.; Casing Auger Size 3.25 IN.; Size of Core IN.; Size of Bit OD IN.; Core Barrel Type; Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
4.5	418.0	0.1	7/7/11
4.4	418.1	24	7/8/11

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SAMPLE NO.	BLOWS	DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		LEAN CLAY, with sand, moist, brown (Topsoil/Fill) (CL, A-6(10), Silty Clay Loam)		2-2 3-4	0.0-2.0	24	NMC=22.1%, LL=[illegible] PI=12, % Passing #200=[illegible]
3.0	419.50	Silty GRAVEL, with sand, moist, orange-brown and tan (GM, A-2-4(0))		2-3 5-7	2.0-4.0	16	NMC=[illegible], LL=[illegible] PI=12, % Passing #200=[illegible]
4.0	418.50	Silty GRAVEL, trace sand, moist, tan, brown and gray		4-3 3-3	4.0-6.0	16	
				5-5 2-3	6.0-8.0	2	
8.0	414.50	Silty SAND, moist to wet, dark gray and brown (Residual)		1-2 3-4	8.0-10.0	24	Water during drilling: [illegible]
10.0	412.50	Bottom of Boring @ 10 feet					End of Drilling: Water: 4.5 ft, Caved: 5.5 ft. Reading after 24 hr: Water: 4.4 ft, Caved: 4.6 ft

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

SHA 73.0-46 8-25-2000

Sheet 1 of 1
Boring ___ of 368

Contract No. AX3765P60 Project Description: ICC ES-CM Wetland Creation: SC-B Site SC-19 Seneca Creek
Boring No. SC-19 B-19 Station/Offset Coordinates N 571106.2 E 1281015.2
Boring By E2CR, INC
Surface Elevation 424.8 Date Started 7/11/11 Date Completed 7/11/11
Driller Eddie Hill; Rig Type CME 450; Rig No.; Drive Hammer 140 LB.; Casing Auger Size 3.25 IN.; Size of Core IN.; Size of Bit OD IN.; Core Barrel Type; Auger Depth 8

WATER TABLE

Depth Below Surface: Depth	Elev.	Time (Hours)	Date
6.7	417.8	0.1	7/11/11

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SAMPLE NO.	BLOWS	DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		LEAN CLAY, trace sand, moist, brown (Topsoil/Fill) (CL, A-6(13), Silty Clay Loam)		2-3 4-5	0.0-2.0	16	NMC=28.1%, LL=38 PI=12, % Passing #200=[illegible]
2.0	422.80	Sandy Silty CLAY, with gravel, contains organic, moist, Gray and orange-brown (CL-ML, A-4(1))		3-3 4-5	2.0-4.0	21	NMC=11.0%, LL=24 PI=6, % Passing #200=[illegible]
4.0	420.80	Silty SAND, trace gravel, moist to wet, gray and dark gray micaceous from 4 to 8 ft (SM, A-4(0))		2-5 5-7	4.0-6.0	16	NMC=20.8%, LL=[illegible] PI=[illegible], % Passing #200=[illegible]
		contain rocks, moist, light gray at 6 ft		2-5 11-15	6.0-8.0	20	
8.0	416.80	Silty SAND, with rock fragments, moist, brown and gray		7-9 21-44	8.0-10.0	20	Water during drilling: [illegible] ft
10.0	414.80	Bottom of Boring @ 10 feet					End of Drilling: Water: 6.7 ft, Caved: 5.5 ft

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NOTE: THE CONTRACTOR IS ADVISED THAT THE GREAT SENECA CREEK AND TRIBUTARIES ARE A DYNAMIC STREAM SYSTEM THAT EXPERIENCES INCREASED WATER VOLUME AND VELOCITY DURING STORM EVENTS. GROUNDWATER LEVELS WITHIN THE WETLAND FLUCTUATE SEASONALLY AND IN RESPONSE TO PRECIPITATION EVENTS. GROUNDWATER LEVELS MAY RISE TO WITHIN THE GRADING LIMITS DURING CONSTRUCTION. ALL WORK IN PROGRESS MUST BE MAINTAINED ACCORDINGLY TO PROTECT DOWNSTREAM RESOURCES. SOIL BORINGS AND GROUNDWATER TABLE REPRESENT A SINGLE POINT IN TIME. WATER LEVELS ADJUST SEASONALLY AND ACCORDING TO PRECIPITATION. THIS IS A WETLAND CREATION PROJECT AND GROUNDWATER MAY FLUCTUATE INTO GRADING. WATER ELEVATIONS ARE NOT WARRANTIED.

COASTAL RESOURCES INC.

BY: sumanthap –

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

REVISIONS

SOIL BORING LOGS

SCALE NTS ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY ______ COUNTY MONTGOMERY COUNTY
DRAWN BY ______ LOGMILE ______
CHECKED BY ______ HORIZONTAL SCALE ______
F.A.P. NO. ______ VERTICAL SCALE ______

DRAWING NO. SO-03 OF 03 SHEET NO. 19 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
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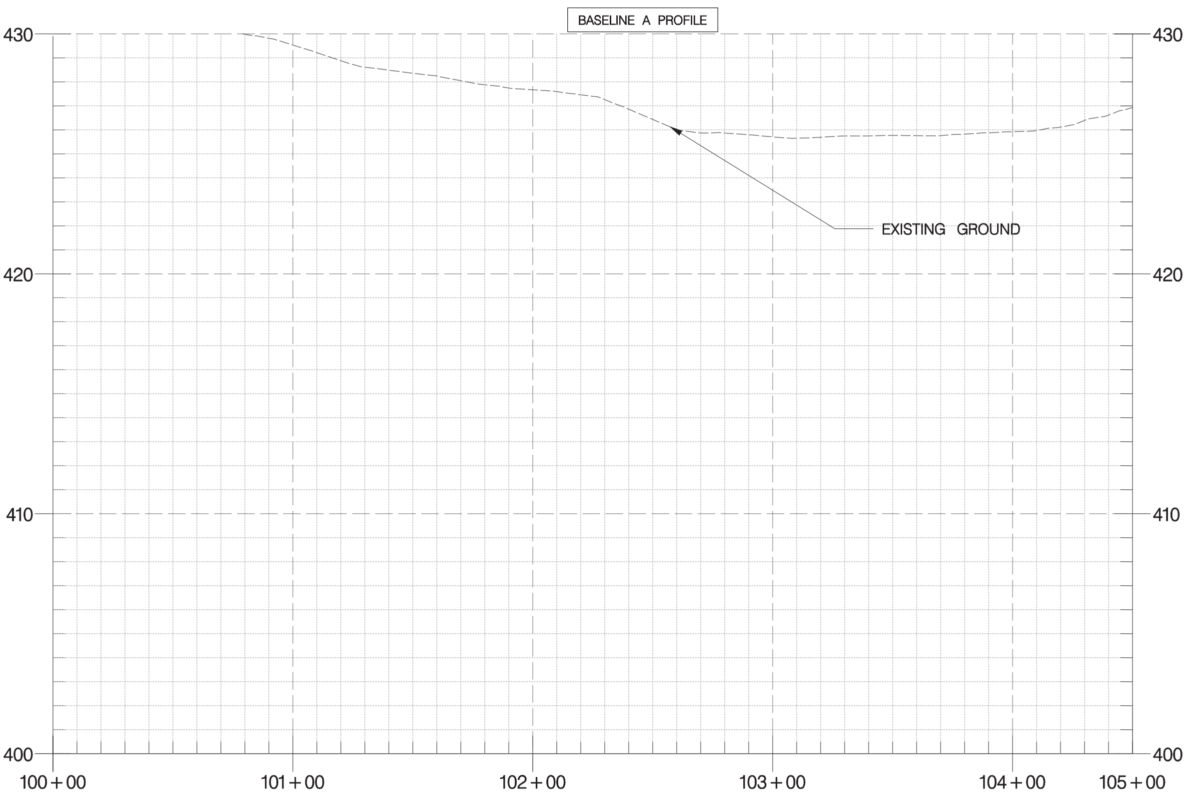

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

SCALE ____ ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-01 OF 11 | SHEET NO. 20 OF 67

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-59
INVASIVE SPECIES TREATMENT	60
LANDSCAPING PLAN	61
WETLAND CROSS SECTIONS	62-75

R/W PLAT NUMBER

REVISIONS

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
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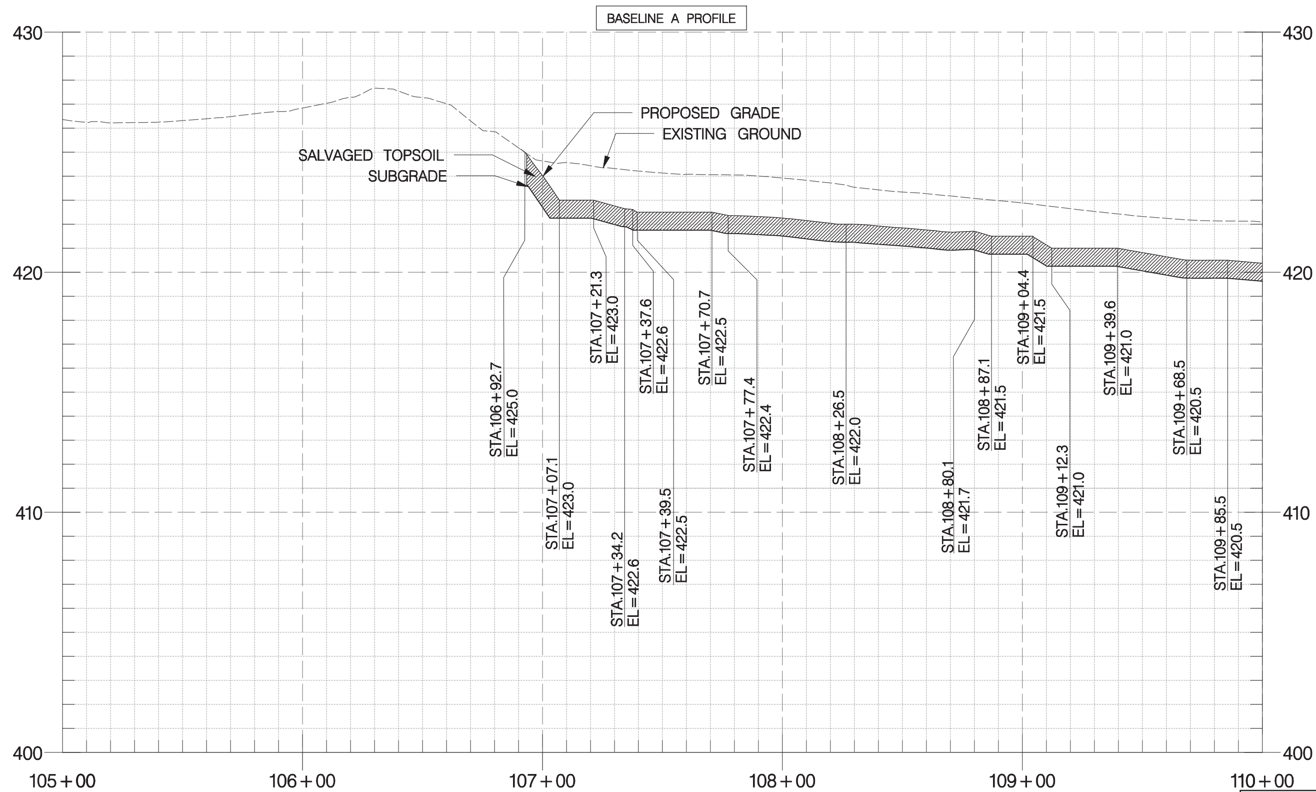
BY: sumanthap -

COASTAL RESOURCES INC.



BY: sumanthap –

COASTAL RESOURCES INC.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19

WETLAND MITIGATION PROJECT

CROSS REFERENCE		R / W PLAT NUMBER	REVISIONS
ITEM	SHEET NOs.		
WETLAND DETAILS	03–05		
EROSION & SEDIMENT CONTROL NOTES	06–09		
GEOMETRIC LAYOUT	10–11		
GRADING SHEETS	12–16		
SOIL BORING LOGS	17–19		
WETLAND PROFILES	20–30		
EROSION & SEDIMENT CONTROL	31–59		
INVASIVE SPECIES TREATMENT	60		
LANDSCAPING PLAN	61		
WETLAND CROSS SECTIONS	62–75		

WETLAND PROFILE SHEET

SCALE ______ ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR – 02 OF 11 SHEET NO. 21 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
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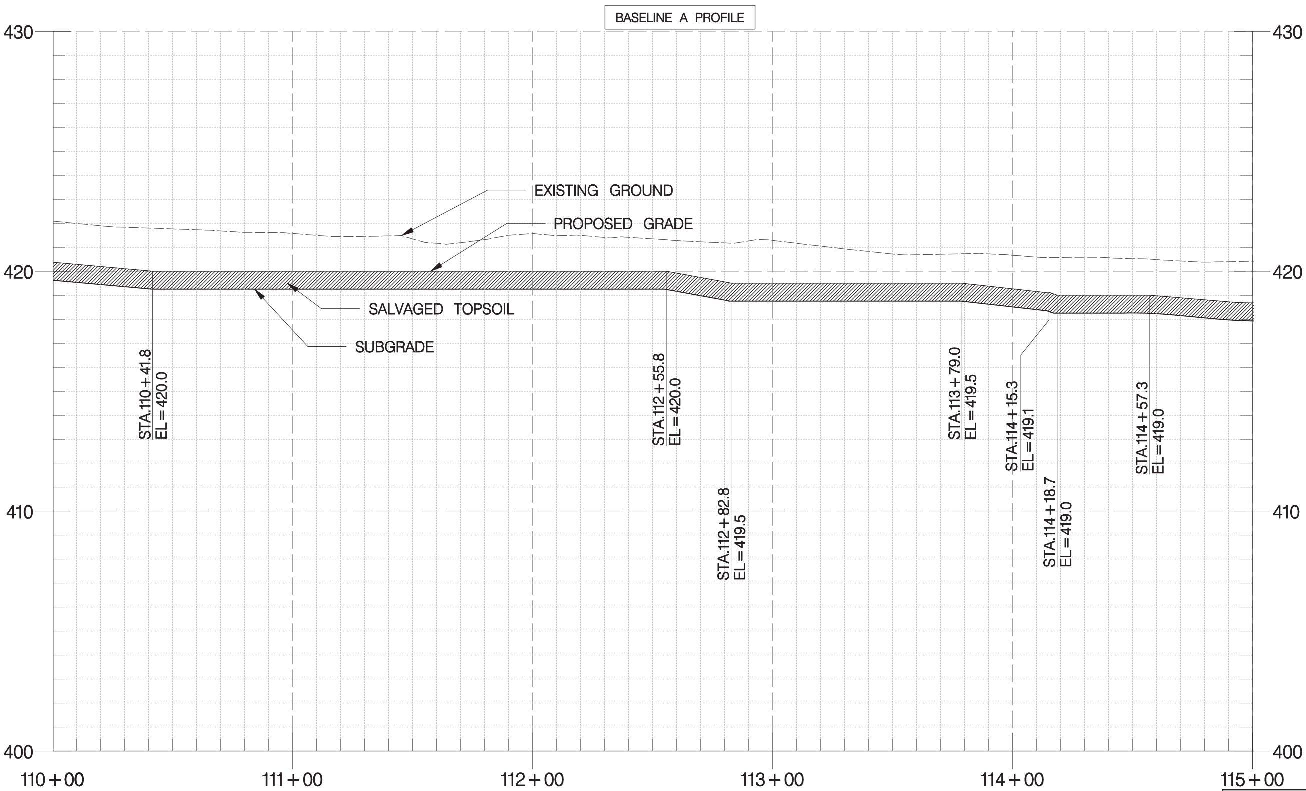

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

SCALE ______ ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. **PR-03** OF **11**

SHEET NO. **22** OF **67**

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-59
INVASIVE SPECIES TREATMENT	60
LANDSCAPING PLAN	61
WETLAND CROSS SECTIONS	62-75

R/W PLAT NUMBER

REVISIONS

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
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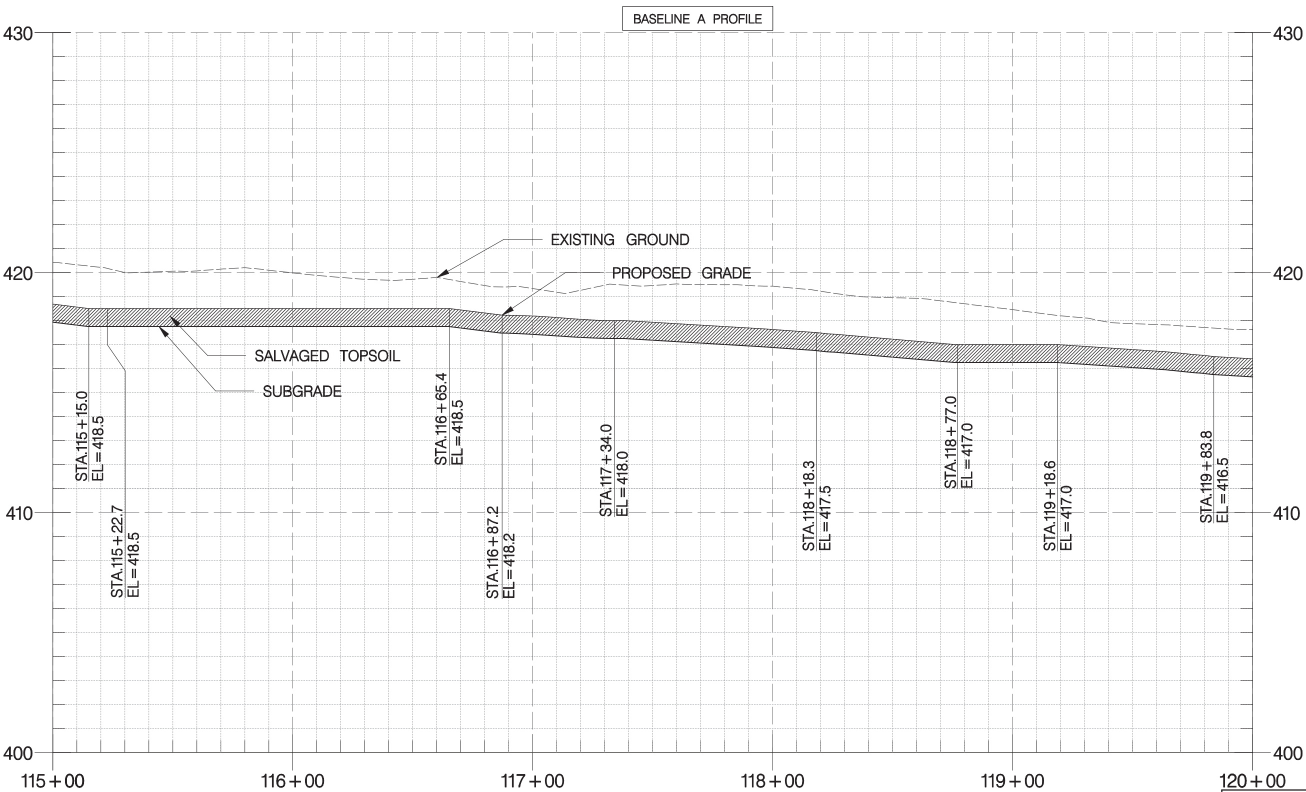

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-59
INVASIVE SPECIES TREATMENT	60
LANDSCAPING PLAN	61
WETLAND CROSS SECTIONS	62-75

R / W PLAT NUMBER

REVISIONS

WETLAND PROFILE SHEET

SCALE ______ ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-04 OF 11 SHEET NO. 23 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pHP-V004_sc-19.dgn

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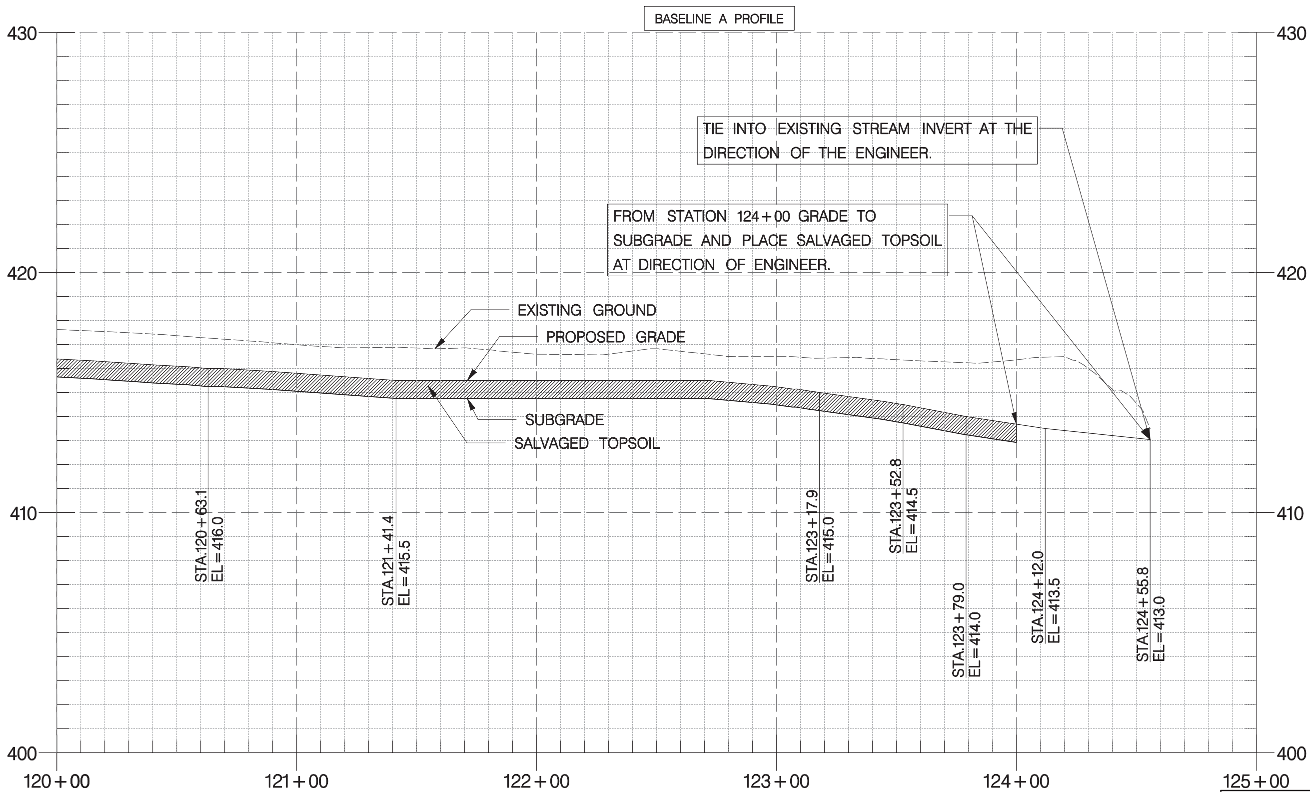

BY: sumanthap -

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE		R/W PLAT NUMBER	REVISIONS
ITEM	SHEET NOs.		
WETLAND DETAILS	03-05		
EROSION & SEDIMENT CONTROL NOTES	06-09		
GEOMETRIC LAYOUT	10-11		
GRADING SHEETS	12-16		
SOIL BORING LOGS	17-19		
WETLAND PROFILES	20-30		
EROSION & SEDIMENT CONTROL	31-59		
INVASIVE SPECIES TREATMENT	60		
LANDSCAPING PLAN	61		
WETLAND CROSS SECTIONS	62-75		

WETLAND PROFILE SHEET

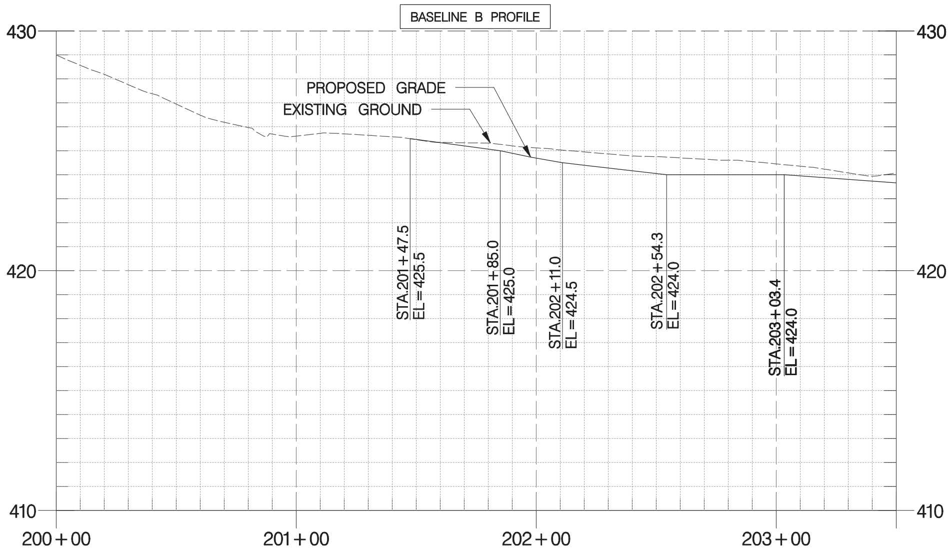
SCALE ____ ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ____
COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-05 OF 11 | SHEET NO. 24 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pHP-V005_sc-19.dgn

BASELINE B PROFILE



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

CROSS REFERENCE		R /W PLAT NUMBER	REVISIONS
ITEM	SHEET NOs.		
WETLAND DETAILS	03-05		
EROSION & SEDIMENT CONTROL NOTES	06-09		
GEOMETRIC LAYOUT	10-11		
GRADING SHEETS	12-16		
SOIL BORING LOGS	17-19		
WETLAND PROFILES	20-30		
EROSION & SEDIMENT CONTROL	31-59		
INVASIVE SPECIES TREATMENT	60		
LANDSCAPING PLAN	61		
WETLAND CROSS SECTIONS	62-75		

SCALE ______ ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-06 OF 11 SHEET NO. 25 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pHP-V006_sc-19.dgn

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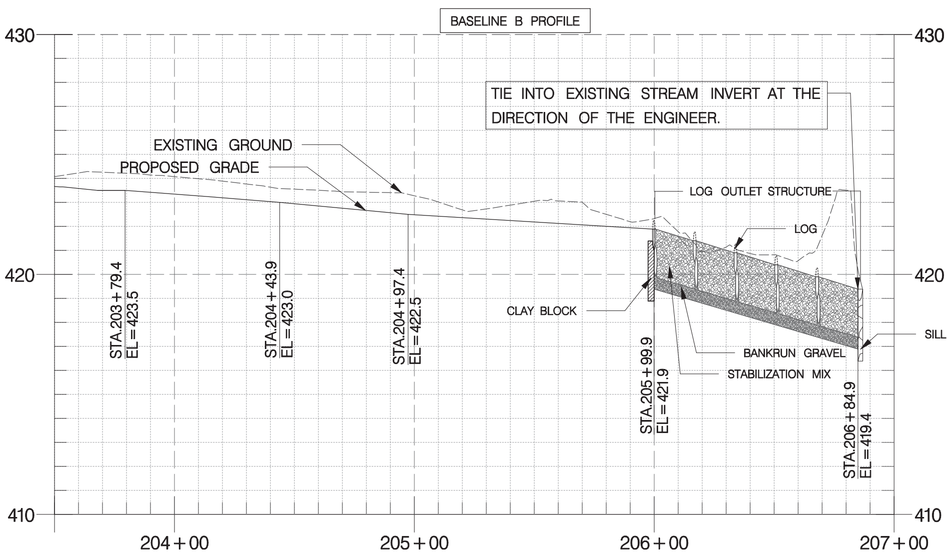

NOTE: SEE DE–02 (SHEET 4) FOR STATIONS AND ELEVATIONS ASSOCIATED WITH THE LOG OUTLET STRUCTURE.

BY: sumanthap –

COASTAL RESOURCES INC.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19
WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03–05
EROSION & SEDIMENT CONTROL NOTES	06–09
GEOMETRIC LAYOUT	10–11
GRADING SHEETS	12–16
SOIL BORING LOGS	17–19
WETLAND PROFILES	20–30
EROSION & SEDIMENT CONTROL	31–59
INVASIVE SPECIES TREATMENT	60
LANDSCAPING PLAN	61
WETLAND CROSS SECTIONS	62–75

R /W PLAT NUMBER

REVISIONS

SCALE ______ ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______
COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR–07 OF 11 SHEET NO. 26 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
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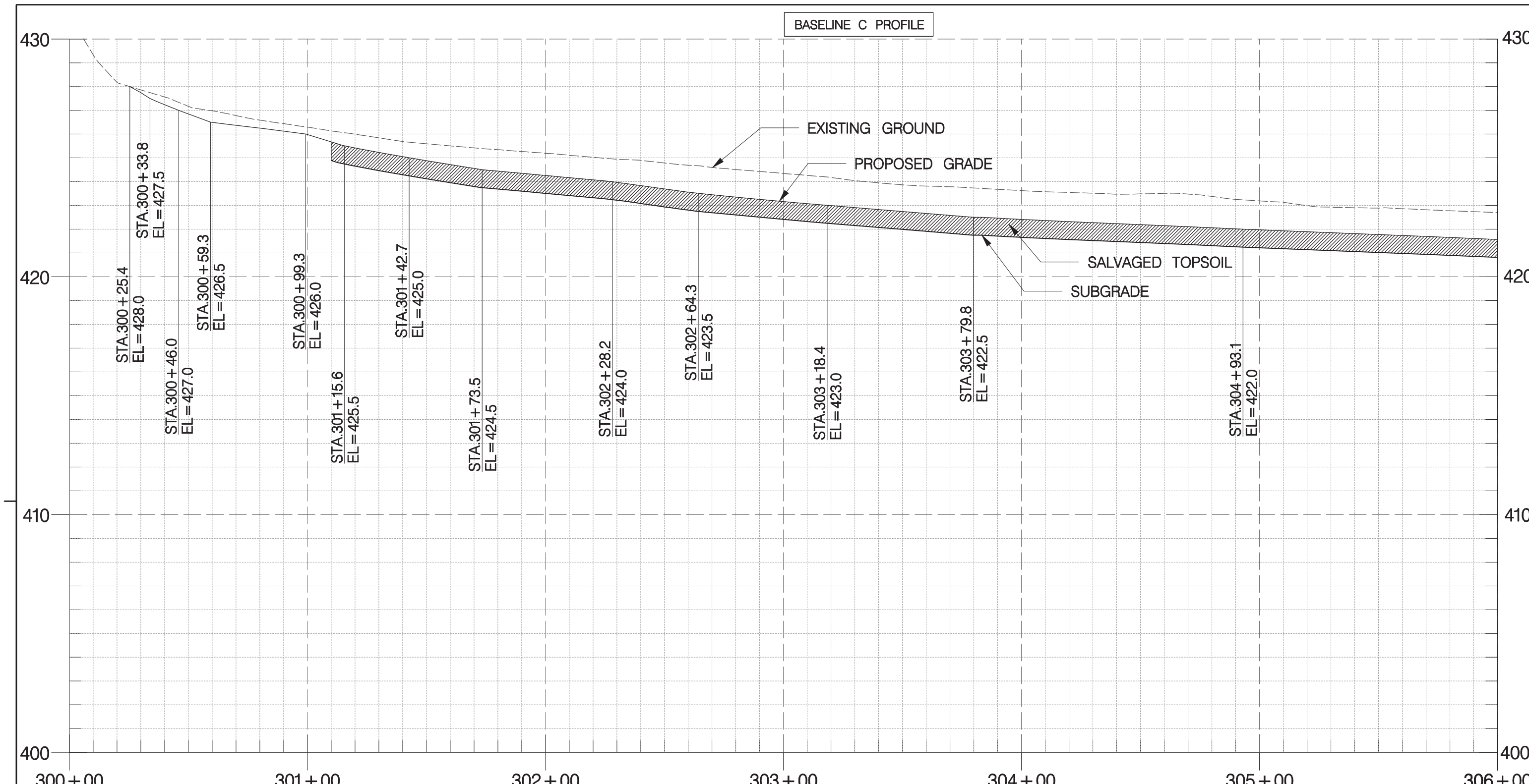

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-59
INVASIVE SPECIES TREATMENT	60
LANDSCAPING PLAN	61
WETLAND CROSS SECTIONS	62-75

R / W PLAT NUMBER

REVISIONS

SCALE ____ ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-08 OF 11 SHEET NO. 27 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:48 AM
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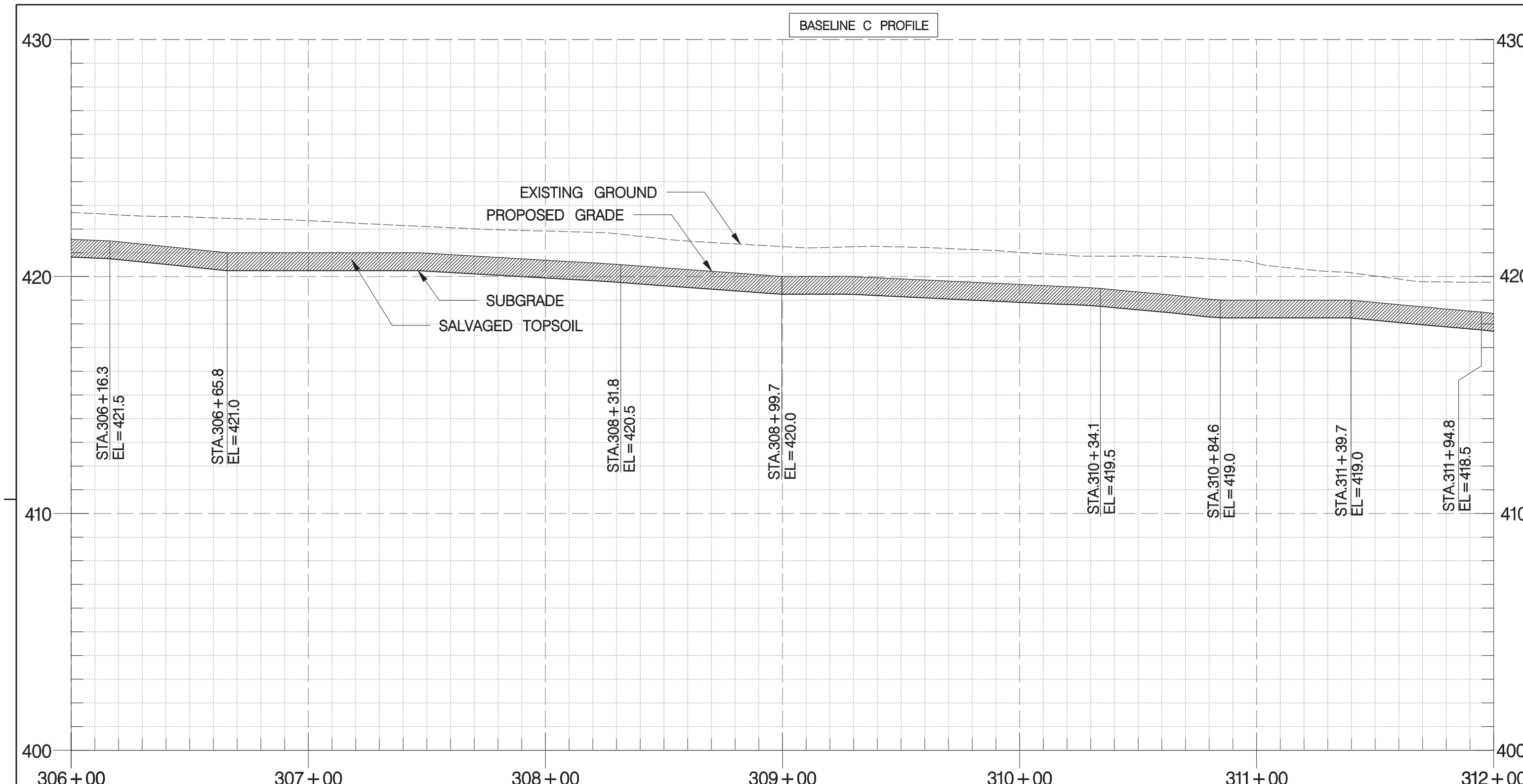

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

SCALE ____ ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-09 OF 11
SHEET NO. 28 OF 67

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-59
INVASIVE SPECIES TREATMENT	60
LANDSCAPING PLAN	61
WETLAND CROSS SECTIONS	62-75

R / W PLAT NUMBER

REVISIONS

PLOTTED: Friday, March 02, 2012 AT 11:49 AM
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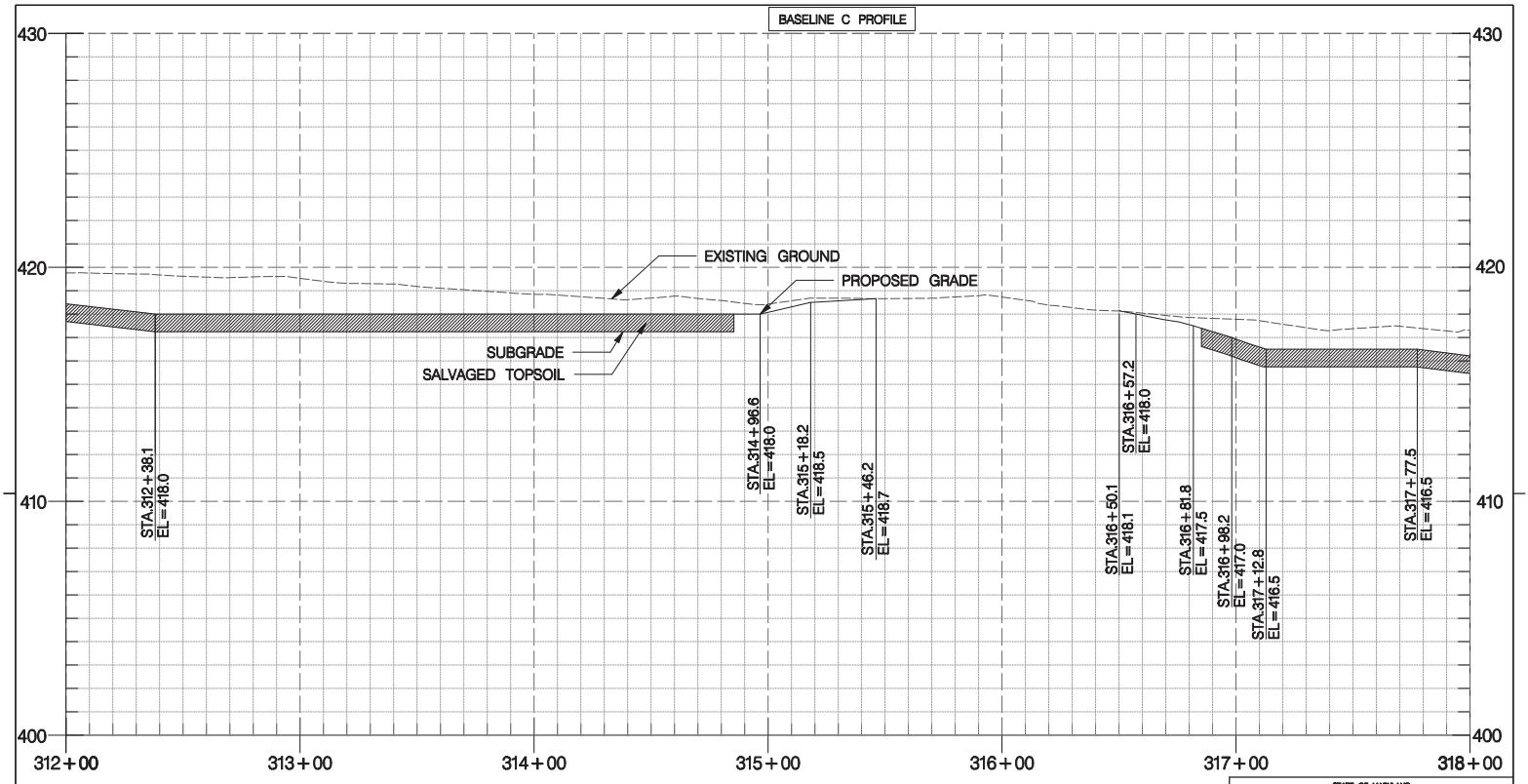
BY: sumanthap -

COASTAL RESOURCES INC.



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

WETLAND PROFILE SHEET

SCALE _____ ADVERTISED DATE _____ CONTRACT NO. AW2166PRD

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. _____
COUNTY MONTGOMERY COUNTY
LOGMILE _____
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 5'

DRAWING NO. PR-10 OF 11 SHEET NO. 29 OF 67

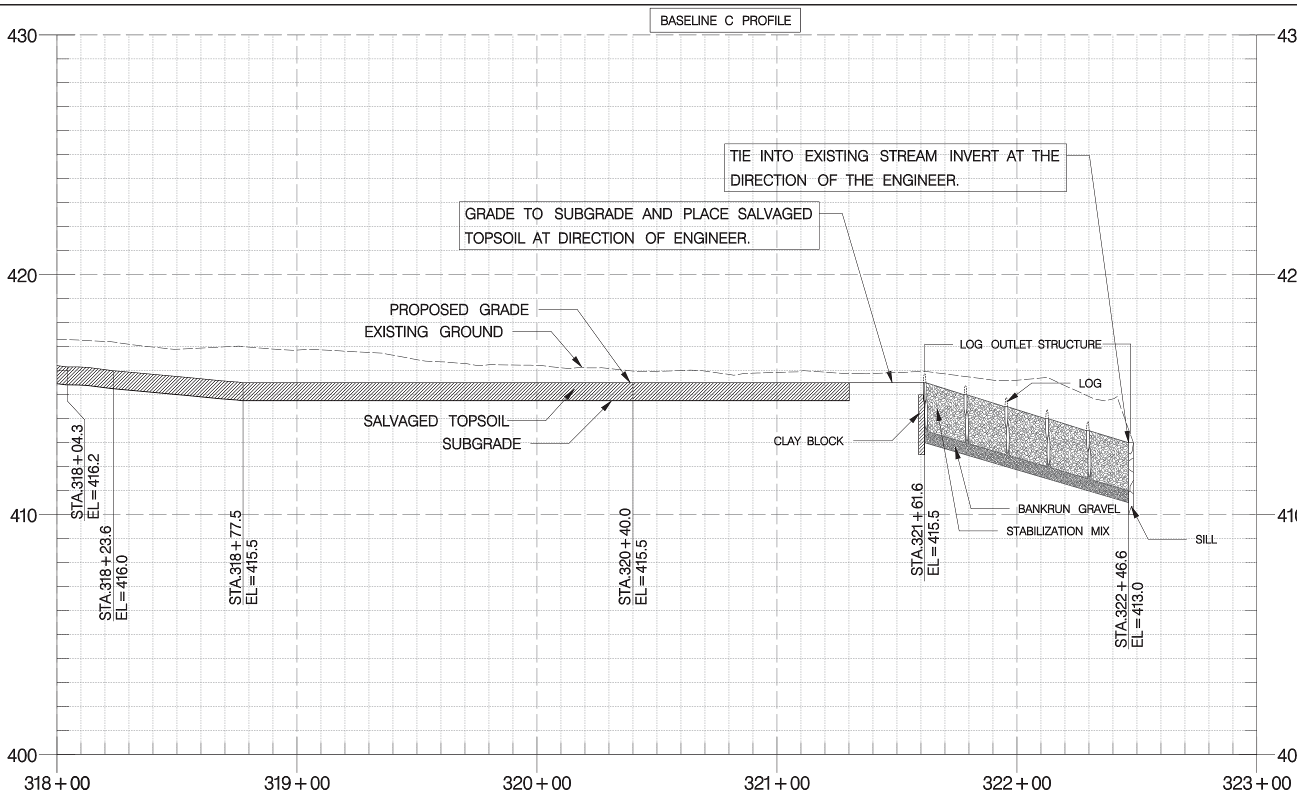
CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	09-09
EROSION & SEDIMENT CONTROL NOTES	09-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-18
WETLAND PROFILES	20-20
EROSION & SEDIMENT CONTROL	21-27
PAVING SPECS TREATMENT	28
LANDSCAPING PLAN	31
WETLAND CROSS SECTIONS	68-76

R /W PLAT NUMBER

REVISIONS

COASTAL RESOURCES INC.

BY: sumarthep -



NOTE: SEE DE-02 (SHEET 4) FOR STATIONS AND ELEVATIONS ASSOCIATED WITH THE LOG OUTLET STRUCTURE.

BY: sumanthap -

COASTAL RESOURCES INC.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE		R / W PLAT NUMBER	REVISIONS
ITEM	SHEET NOs.		
WETLAND DETAILS	03-05		
EROSION & SEDIMENT CONTROL NOTES	06-09		
GEOMETRIC LAYOUT	10-11		
GRADING SHEETS	12-16		
SOIL BORING LOGS	17-19		
WETLAND PROFILES	20-30		
EROSION & SEDIMENT CONTROL	31-59		
INVASIVE SPECIES TREATMENT	60		
LANDSCAPING PLAN	61		
WETLAND CROSS SECTIONS	62-75		

WETLAND PROFILE SHEET

SCALE ____ ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO.
COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. PR-11 OF 11 SHEET NO. 30 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:49 AM
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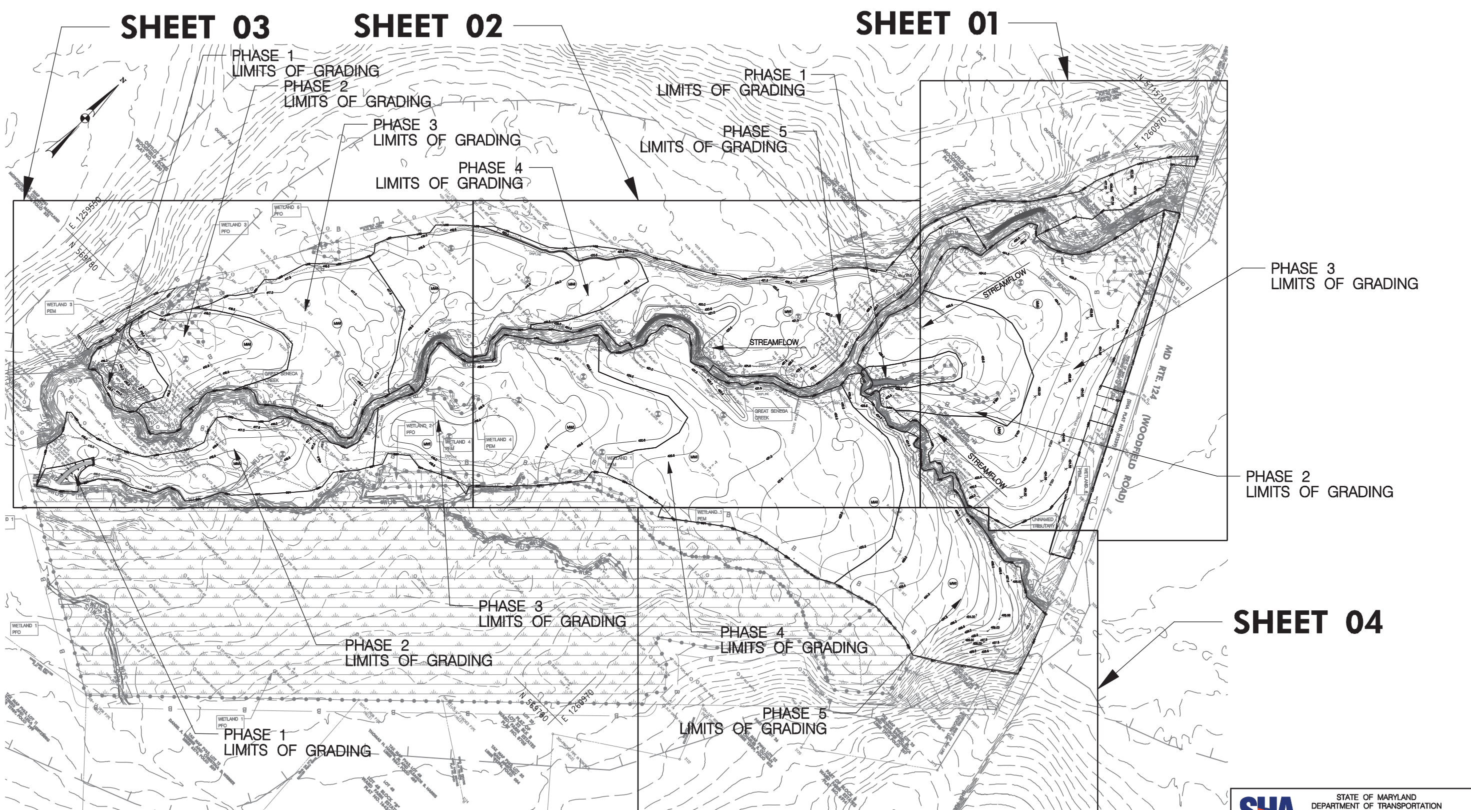

100' 0 100' 200'

SCALE: 1" = 100'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E&S PHASE LAYOUT PLAN

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

SCALE 1" = 100' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. ES-OV-01 OF 01 SHEET NO. 31 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:49 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pGM-ES00_sc-19.dgn

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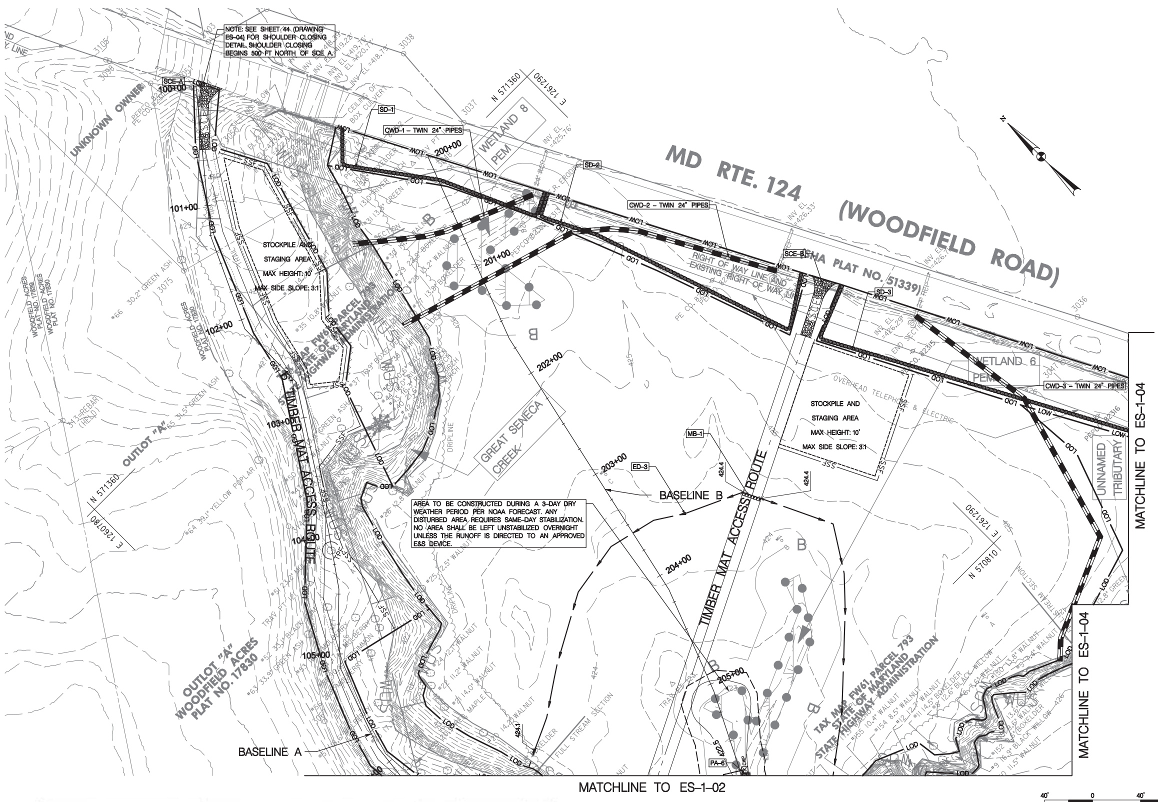
COASTAL RESOURCES INC.



SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STRUCTURE		LOCATION	QUANTITY	DRAINAGE AREA	SLOPE	Q
EARTH DIKE	ED-3	BASELINE B: 205+18 166' R TO BASELINE B: 206+32 58' L	646 L.F.	4.3 Ac	0.1%	
MOUNTABLE BERM	MB-1	BASELINE B: 202+90 205' L TO BASELINE B: 203+03 215' L	16 L.F.			
SANDBAG DIVERSION	SD-1	BASELINE A: 100+47 118' L TO BASELINE B: 200+66 77' L	221 L.F.			
	SD-2	BASELINE B: 200+68 79' L TO BASELINE B: 202+51 235' L	298 L.F.			
	SD-3	BASELINE B: 202+77 258' L TO BASELINE B: 204+47 465' L	403 L.F.			
SUPER SILT FENCE		BASELINE A: 100+57 14' L TO BASELINE A: 100+81 17' L	457 L.F.	1.5 Ac	2.0%	
		BASELINE A: 102+60 37' L TO BASELINE A: 104+81 46' L	238 L.F.			
		BASELINE B: 203+63 141' L TO BASELINE B: 203+72 288' L	185 L.F.	4.3 Ac	2.0%	
STABILIZED CONSTRUCTION ENTRANCE	SCE-A	BASELINE A: 100+00 12' L TO BASELINE A: 100+53 2' L	20 TONS			
	SCE-B	BASELINE B: 202+97 210' L TO BASELINE B: 202+65 248' L	20 TONS			
TWIN 24" CLEAR WATER DIVERSION PIPE	CWD-1	BASELINE B: 200+41 87' R TO BASELINE B: 200+64 67' L	157 L.F.	3.0 Ac	0.6%	4.2 CFS
	CWD-2	BASELINE B: 201+20 76' R TO BASELINE B: 202+38 218' L	337 L.F.	17.9 Ac	0.3%	32.1 CFS
	CWD-3	BASELINE B: 203+32 296' L TO BASELINE B: 205+73 282' L	356 L.F.	7.4 Ac	0.4%	14.5 CFS

Note: Slopes listed for super silt fence are average steepness of contributing area. Slopes listed for earth dikes are longitudinal slopes for earth dike.

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 1

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

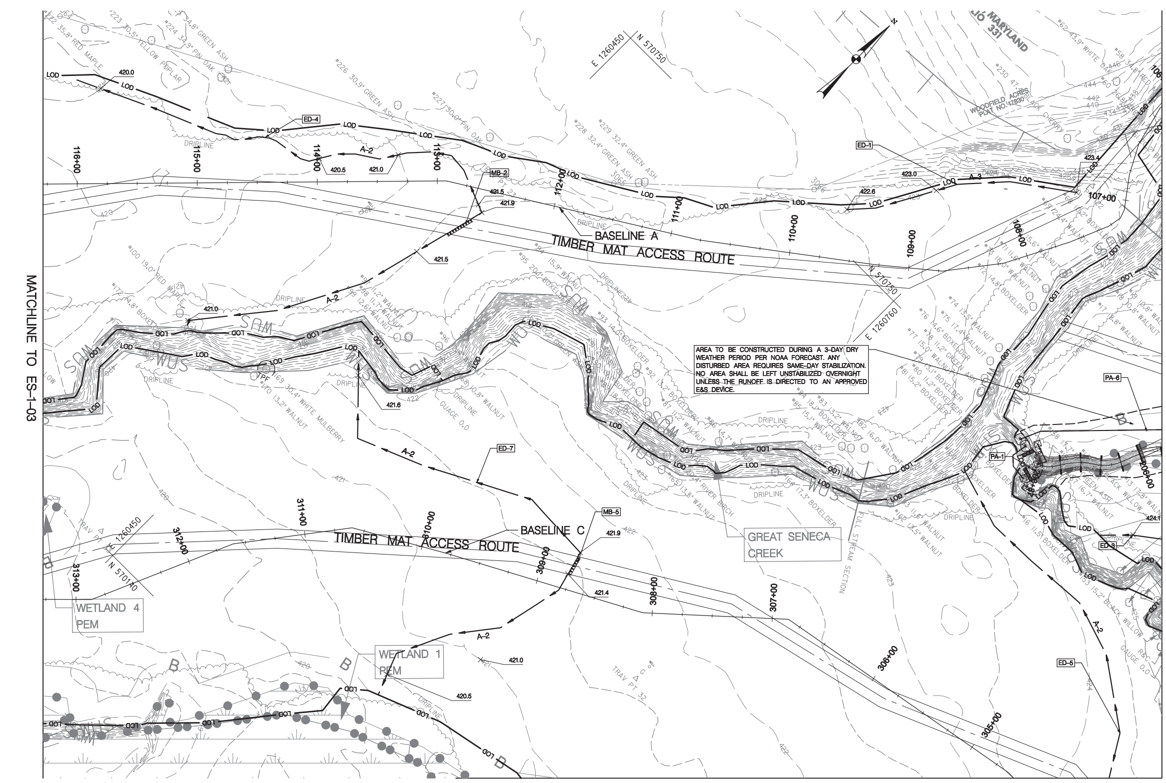
DESIGNED BY SAP
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

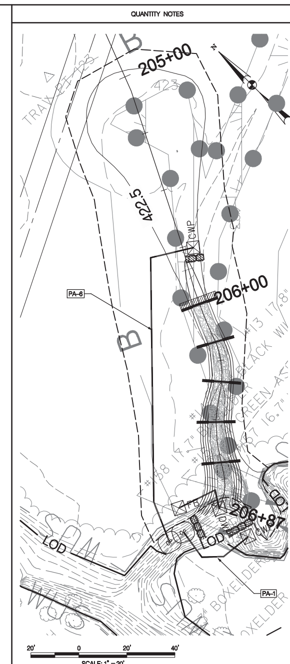
COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. ES-1-01 OF 1-04 | SHEET NO. 32 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:50 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P101_sc-19.dgn

QUANTITY NOTES





STRUCTURE		LOCATION							QUANTITY	DRAINAGE AREA	SLOPE
EARTH DIKE	ED-1	BASELINE A:	107+42	36' R	TO BASELINE A:	109+58	42' R		195 L.F.	2.6 Ac	0.5%
	ED-3	BASELINE B:	SEE ES-1-01 of ES-1-04 (SHEET 32)								
	ED-4	BASELINE A:	115+10	123' L	TO BASELINE A:	116+00	87' R		623 L.F.	3.6 Ac	0.7%
	ED-5	BASELINE C:	SEE ES-1-04 of ES-1-04 (SHEET 35)								
	ED-7	BASELINE C:	310+03	129' L	TO BASELINE A:	113+67	141' L		488 L.F.	4.5 Ac	0.1%

STRUCTURE		LOCATION						QUANTITY	SANDBAG ELEVATION UPSTREAM	SANDBAG ELEVATION DOWNSTREAM
MOUNTABLE BERM	MB-2	BASELINE A:	112+65	26' L	TO BASELINE A:	112+62	43' L	24 L.F.		
	MB-5	BASELINE C:	308+73	29' R	TO BASELINE C:	308+77	13' R	17 L.F.		
PUMP AROUND PRACTICE	PA-1	BASELINE B:	206+87	17' L	TO BASELINE B:	206+87	19' R	1 EA	422.0'	422.0'
	PA-6	BASELINE B:	205+76	4' L	TO BASELINE B:	206+87	26' R	1 EA	422.5'	422.0'

Note: Slopes listed for earth dikes are longitudinal slopes for earth dike.

MATCHLINE TO ES-1-04

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 1

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY SAP
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

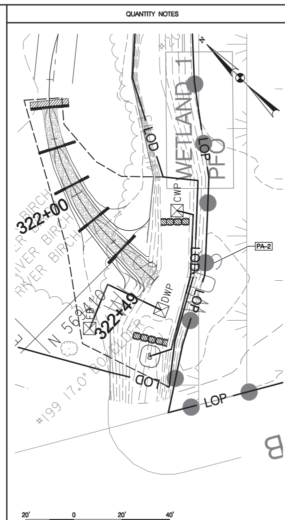
DRAWING NO. ES-1-02 OF 1-04 SHEET NO. 33 OF 67

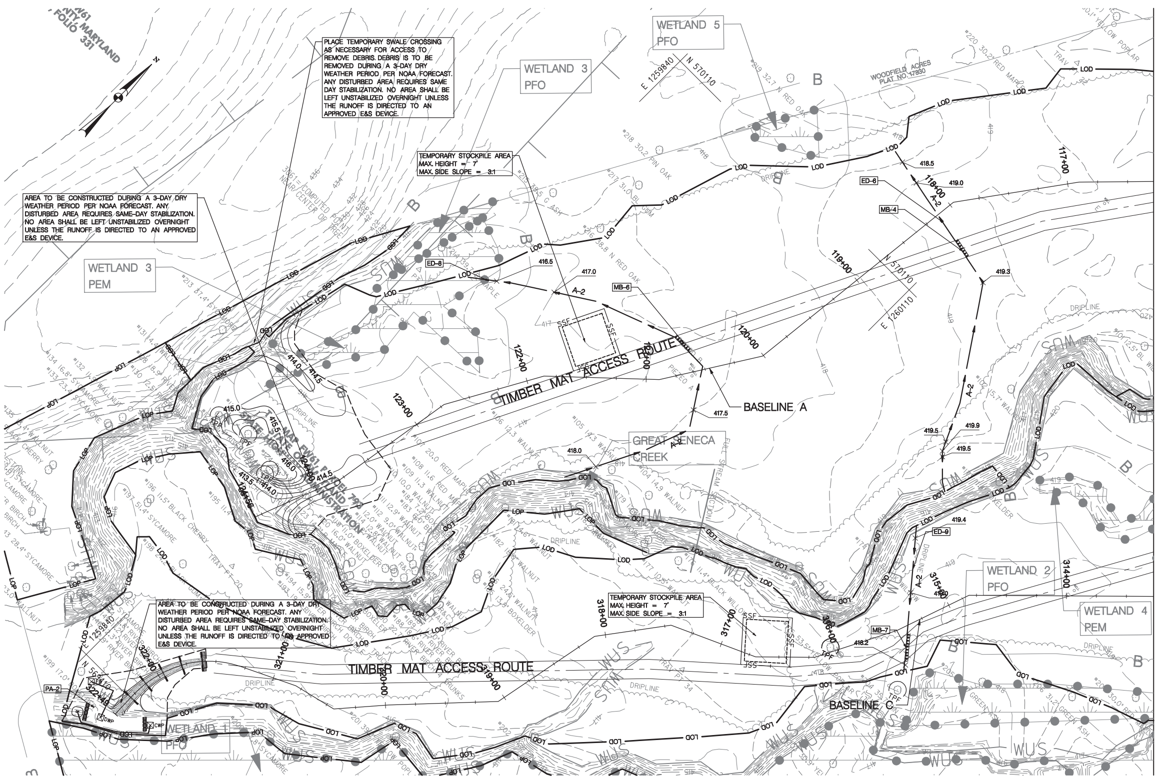
PLOTTED: Friday, March 02, 2012 AT 11:50 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P102_sc-19.dgn

COASTAL RESOURCES INC.

BY: sumanthap -

QUANTITY NOTES





STRUCTURE		LOCATION					QUANTITY	DRAINAGE AREA	SLOPE	SANDBAG ELEVATION	
										UPSTREAM	DOWNSTREAM
EARTH DIKE	ED-6	BASELINE A: 118+08	63' R	TO BASELINE A: 019+54	163' L		294 L.F.	2.7 Ac	0.5%		
	ED-8	BASELINE A: 121+92	86' L	TO BASELINE A: 122+23	97' R		362 L.F.	2.1 Ac	0.5%		
	ED-9	BASELINE C: 314+95	72' R	TO BASELINE C: 315+53	34' L		99 L.F.	3.2 Ac	0.8%		
MOUNTABLE BERM	MB-4	BASELINE A: 118+16	26' L	TO BASELINE A: 118+17	42' L		17 L.F.				
	MB-6	BASELINE A: 120+60	17' R	TO BASELINE A: 120+69	32' R		18 L.F.				
	MB-7	BASELINE C: 315+42	6' L	TO BASELINE C: 315+50	26' L		23 L.F.				
SUPER SILT FENCE		BASELINE A: 121+22	19' R	TO BASELINE A: 121+37	14' R		148 L.F.	1.5 Ac	2.0%		
		BASELINE A: 120+36	258' L	TO BASELINE C: 316+57	8' L		148 L.F.	1.7 Ac	1.6%		
PUMP AROUND PRACTICE	PA-2	BASELINE C: 322+35	28' L	TO BASELINE C: 322+49	32' R		1 EA			413.0'	412.5'

Note: Slopes listed for super silt fence are average steepness of contributing area. Slopes listed for earth dikes are longitudinal slopes for earth dike.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 1

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. ES-1-03 OF 1-04

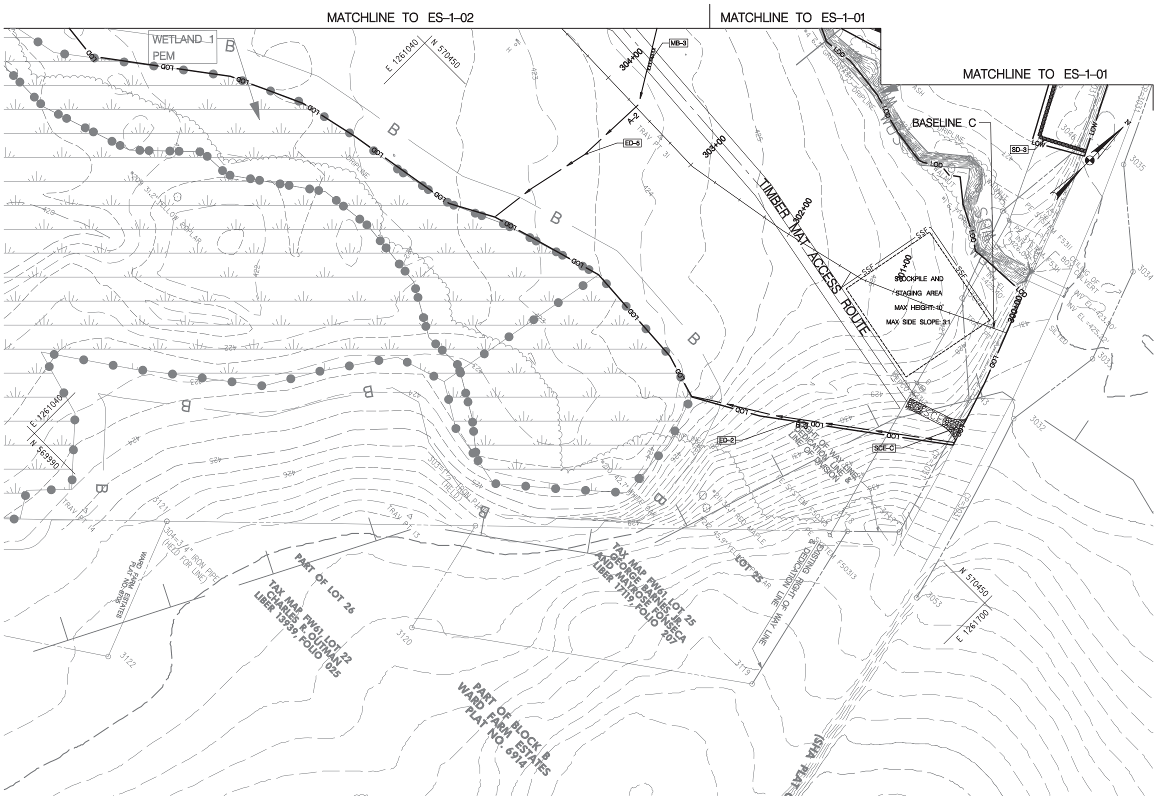
SHEET NO. 34 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:50 AM
FILE: g:\active\2005-03 loc gec\es cm cs\so-b\cad\2011\pES-P103_so-19.dgn

COASTAL RESOURCES INC.

BY: sumanthap -

QUANTITY NOTES



STRUCTURE		LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
EARTH DIKE	ED-2	BASELINE C 300+10 79' L TO BASELINE C 301+98 158' L	444 L.F.	2.5 Ac	2.0%
	ED-5	BASELINE C 303+80 147' L TO BASELINE C 306+38 186' R	223 L.F.	3.1 Ac	1.1%
MOUNTABLE BERM	MB-3	BASELINE C 303+82 28' R TO BASELINE C 303+93 44' R	20 L.F.		
SUPER SILT FENCE		BASELINE C 300+12 6' R TO BASELINE C 301+38 15' L	185 L.F.	3.1 Ac	1.9%
STABILIZED CONSTRUCTION ENTRANCE	SCE-C	BASELINE C 300+09 89' L TO BASELINE C 300+58 82' L	20 TONS		

Note: Slopes listed for super silt fence are average steepness of contributing area. Slopes listed for earth dikes are longitudinal slopes for earth dike.

40' 0 40' 80'
SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 1

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

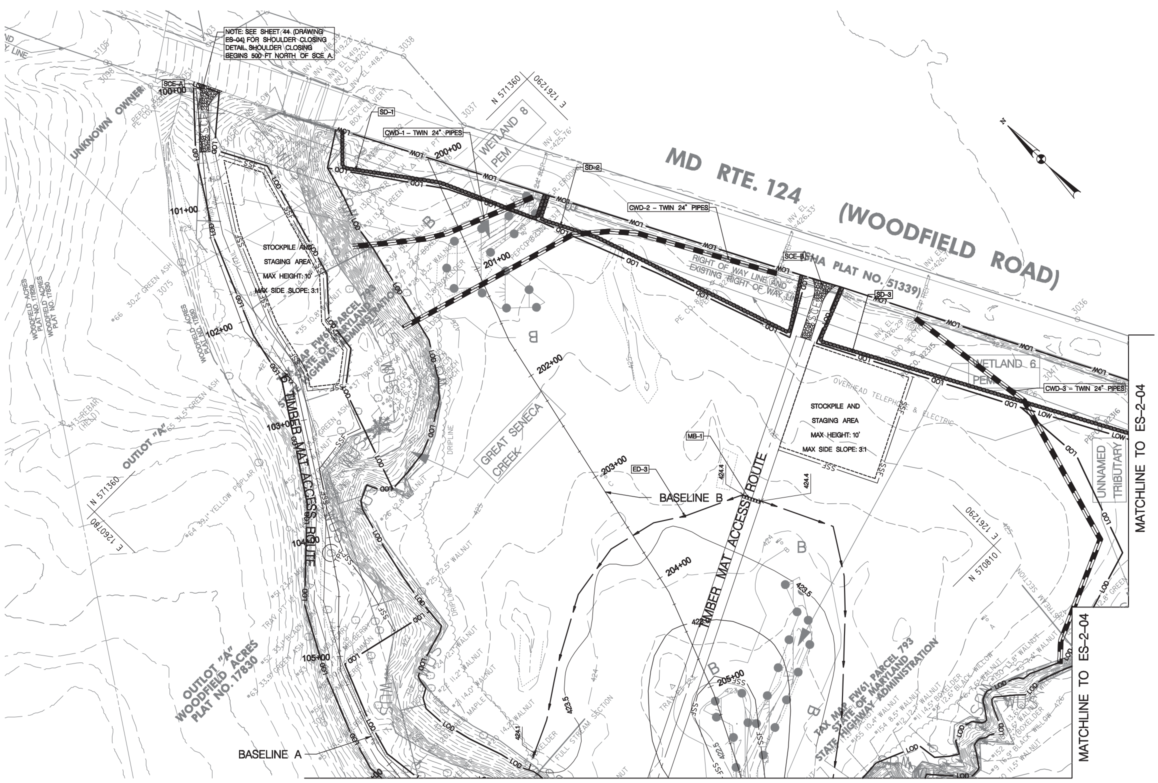
DRAWING NO. ES-1-04 OF 1-04 SHEET NO. 35 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:50 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P104_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



MATCHLINE TO ES-2-02

STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE B SEE ES-2-02 of ES-2-04 (SHEET 37)			

Note: Slopes listed for super silt fence are average steepness of contributing area.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 2

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. ES-2-01 OF 2-04 SHEET NO. 36 OF 67

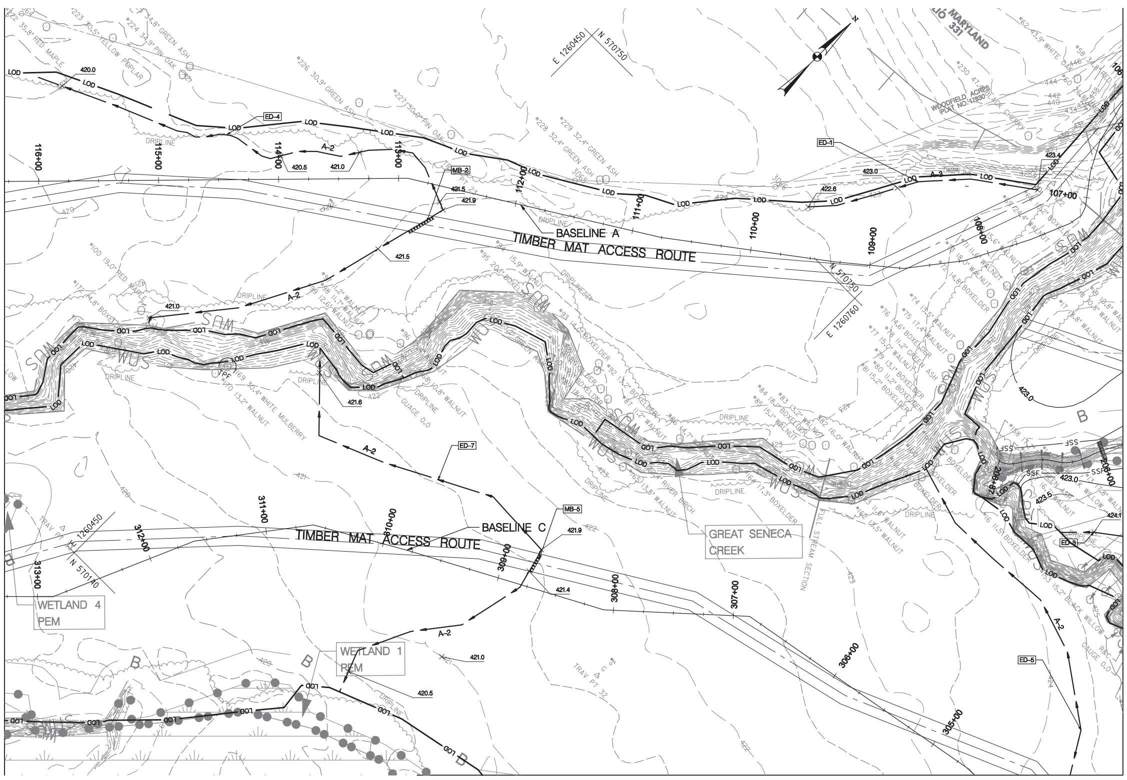
PLOTTED: Friday, March 02, 2012 AT 11:50 AM
FILE: g:\active\2005-03 loc gec\es cm cs\so-b\cad\2011\pES-P201_so-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES

MATCHLINE TO ES-2-03



MATCHLINE TO ES-2-01

MATCHLINE TO ES-2-04

STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE A 108+14 160' L TO BASELINE C 305+66 218' R	406 L.F.	1.5 Ac	2.0%

Note: Slopes listed for super silt fence are average steepness of contributing area.

40' 0 40' 80'

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R/W PLAT NUMBER

REVISIONS

E & S PHASE 2

SCALE 1" = 40' ADVERTISED DATE ________ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. ES-2-02 OF 2-04

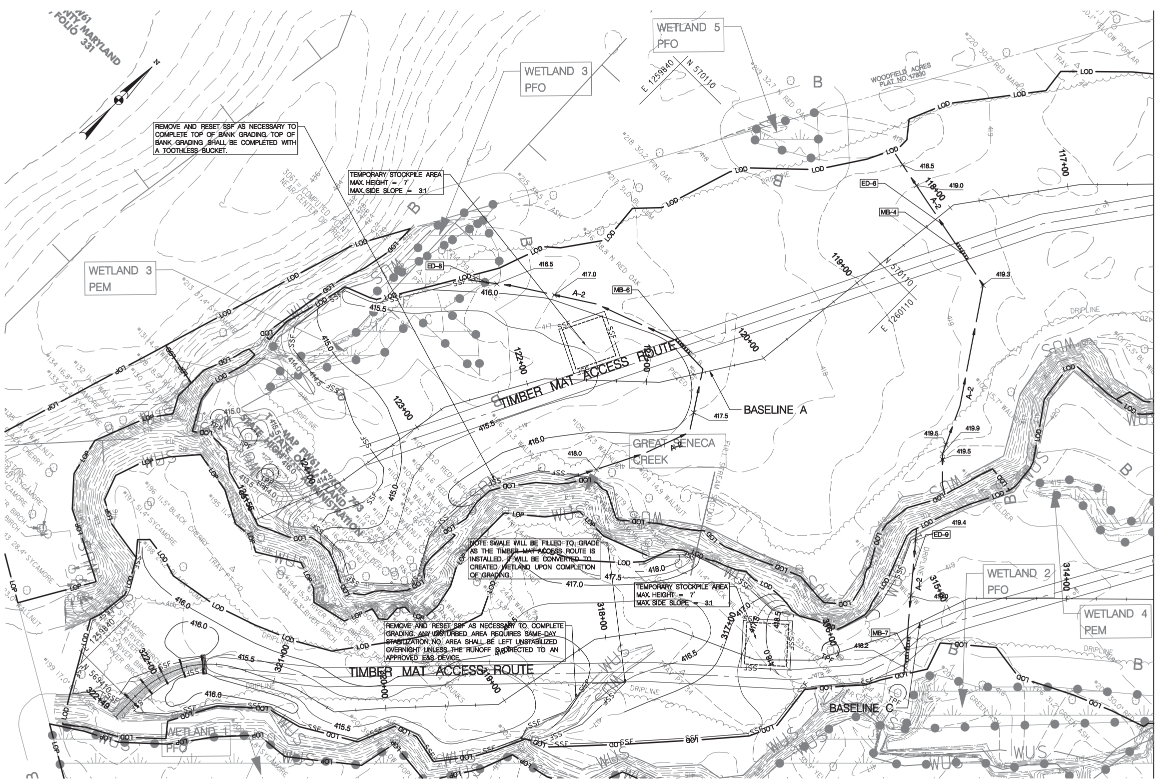
SHEET NO. 37 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:51 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P202_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE A: 121+54 79' L TO BASELINE A: 122+18 96' R	683 L.F	1.5 Ac	2.0%
	BASELINE C: 314+94 65' R TO BASELINE C: 315+69 21' R	85 L.F	1.7 Ac	1.6%
	BASELINE C: 315+52 34' L TO BASELINE C: 318+94 46' L	326 L.F		
	BASELINE C: 316+38 37' R TO BASELINE C: 317+64 57' R	152 L.F		
	BASELINE C: 318+94 46' L TO BASELINE C: 319+06 34' L	17 L.F		
	BASELINE C: 318+94 46' L TO BASELINE C: 319+06 34' L	193 L.F		
	BASELINE C: 319+06 34' L TO BASELINE C: 321+80 111' R	899 L.F		

Note: Slopes listed for super silt fence are average steepness of contributing area.

BY: sumanthap –

COASTAL RESOURCES INC.

40' 0 40' 80'
SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 2

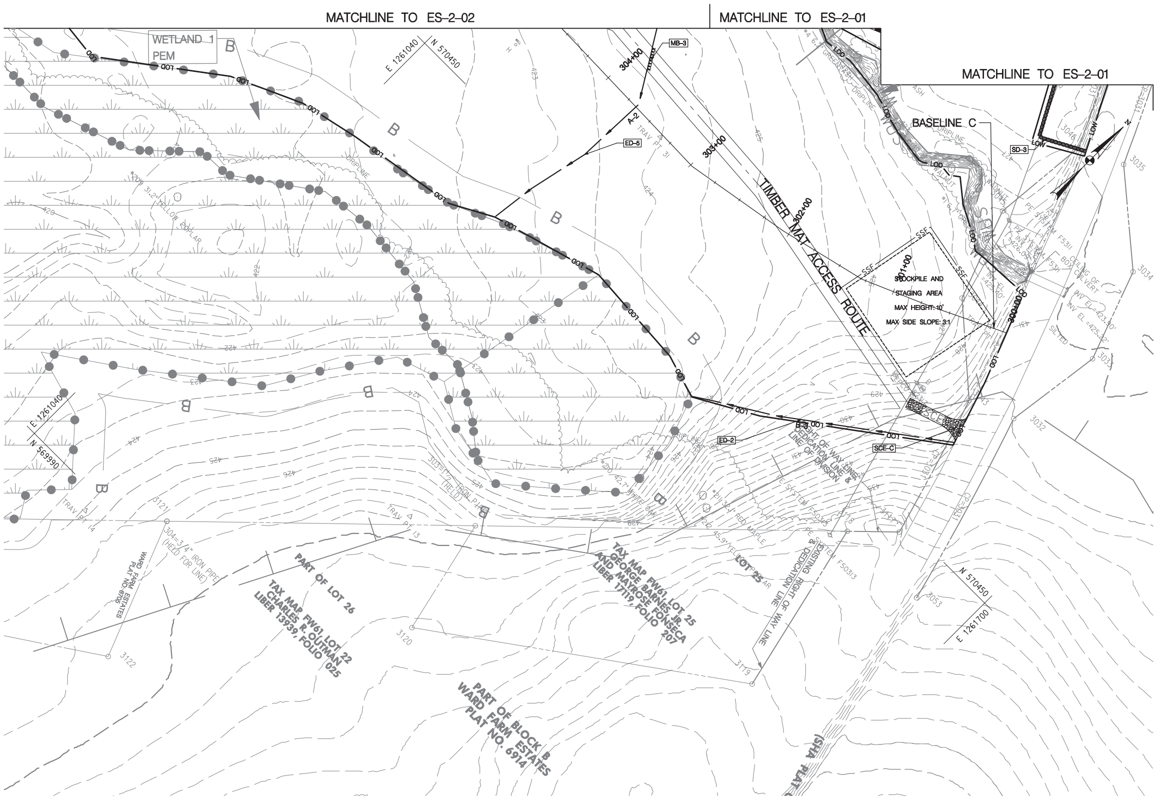
SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. ES-2-03 OF 2-04

PLOTTED: Friday, March 02, 2012 AT 11:51 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P203_sc-19.dgn



SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

QUANTITY NOTES

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 2

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R/W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

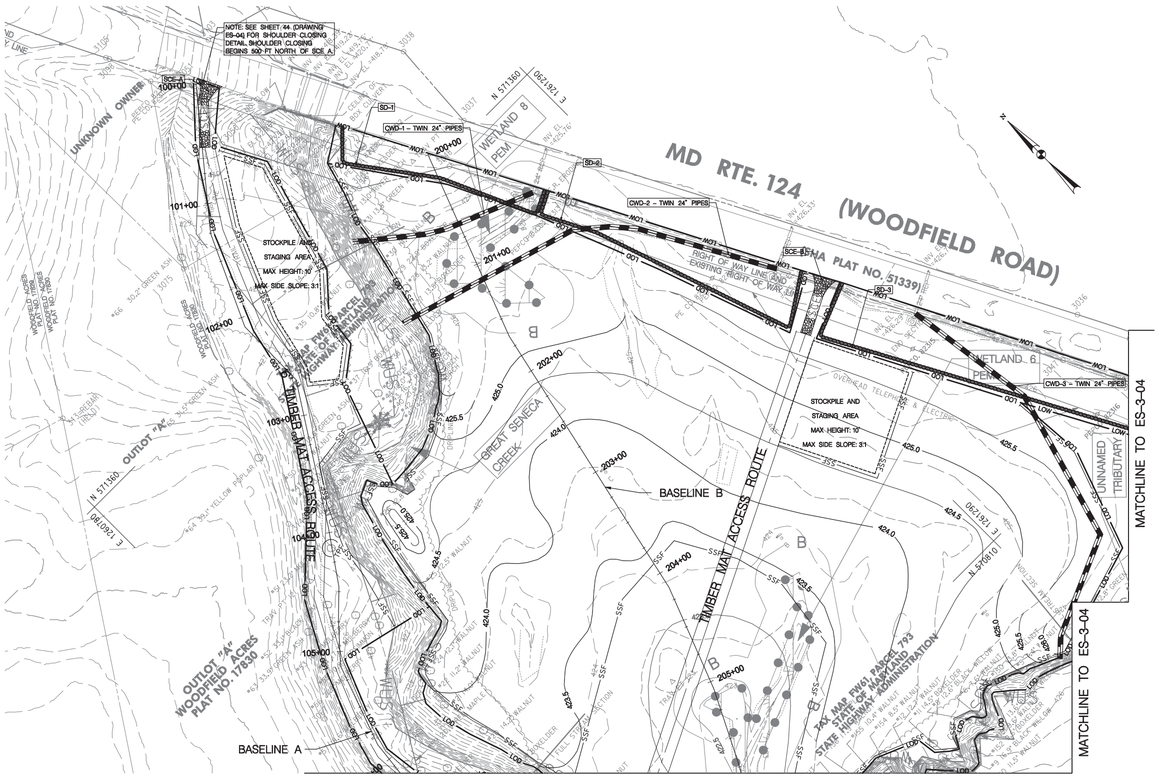
DRAWING NO. ES-2-04 OF 2-04 SHEET NO. 39 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:51 AM
FILE: g:\active\2005-03 loc geo\es cm cs\sc-b\cad\2011\pES-P204_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE A: 200+80 108' L TO BASELINE C: 300+44 300' R	1859 L.F.	4.3 Ac	2.0%

Note: Slopes listed for super silt fence are average steepness of contributing area.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 3

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ________ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ________

COUNTY MONTGOMERY COUNTY
LOGMILE ________
HORIZONTAL SCALE ________
VERTICAL SCALE ________

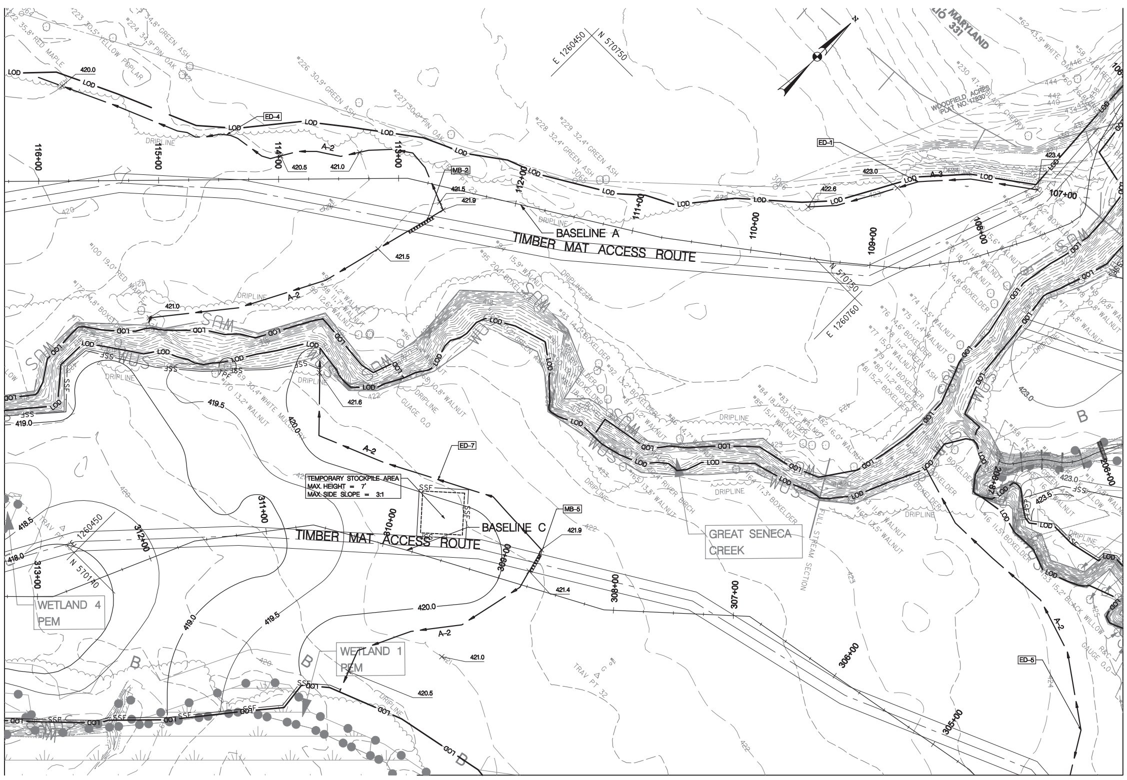
DRAWING NO. ES-3-01 OF 3-04 SHEET NO. 40 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:51 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P301_sc-19.dgn

COASTAL RESOURCES INC.

BY: sumanthap -

QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE B: SEE ES-3-01 of ES-3-04 (SHEET 40)			
	BASELINE A: 113+67 159' L TO BASELINE C: 310+03 129' L	1245 L.F.	3.2 Ac	0.7%
	BASELINE C: 309+35 23' R TO BASELINE C: 309+51 20' R	148 L.F.		

Note: Slopes listed for super silt fence are average steepness of contributing area.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 3

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R/W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. ES-3-02 OF 3-04

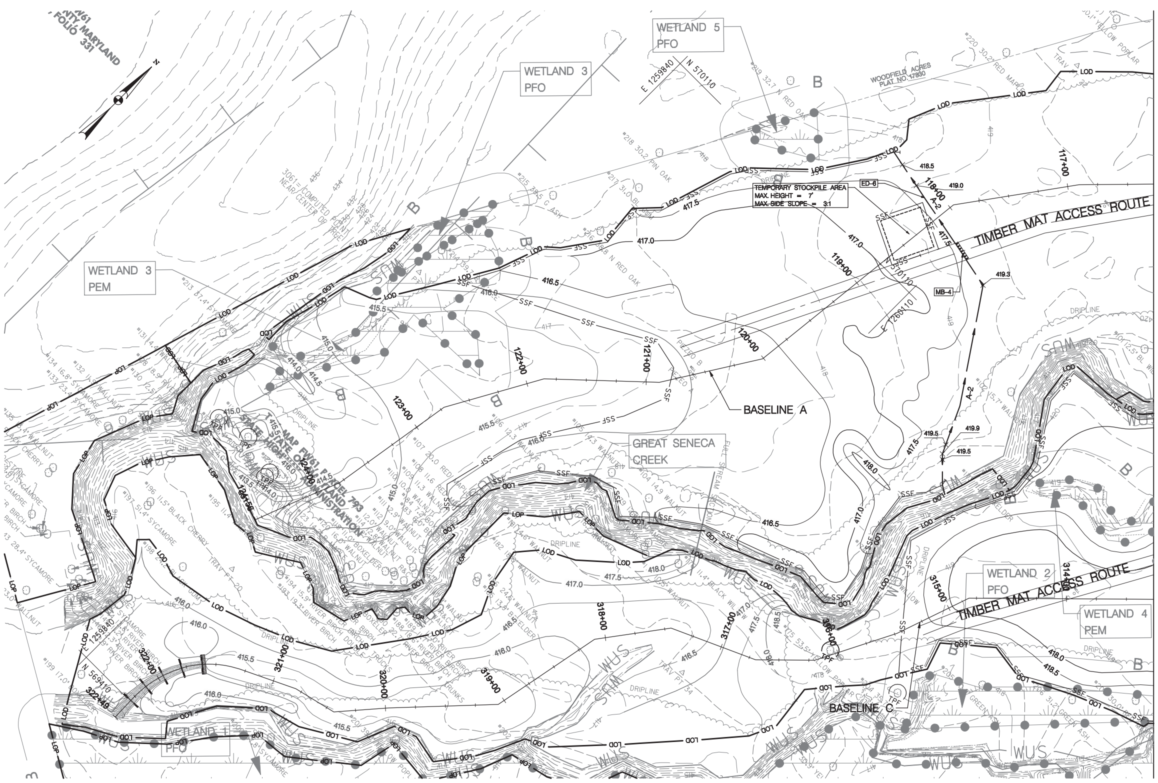
SHEET NO. 41 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:52 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P302_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE A: 118+04 62' R TO BASELINE A: 119+48 174' L	1358 L.F.	2.1 Ac	1.0%
	BASELINE A: 118+29 21' L TO BASELINE A: 118+44 15' L	148 L.F.		
	BASELINE C: SEE ES-3-02 of ES-3-04 (SHEET 41)			

Note: Slopes listed for super silt fence are average steepness of contributing area.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 3

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. ES-3-03 OF 3-04

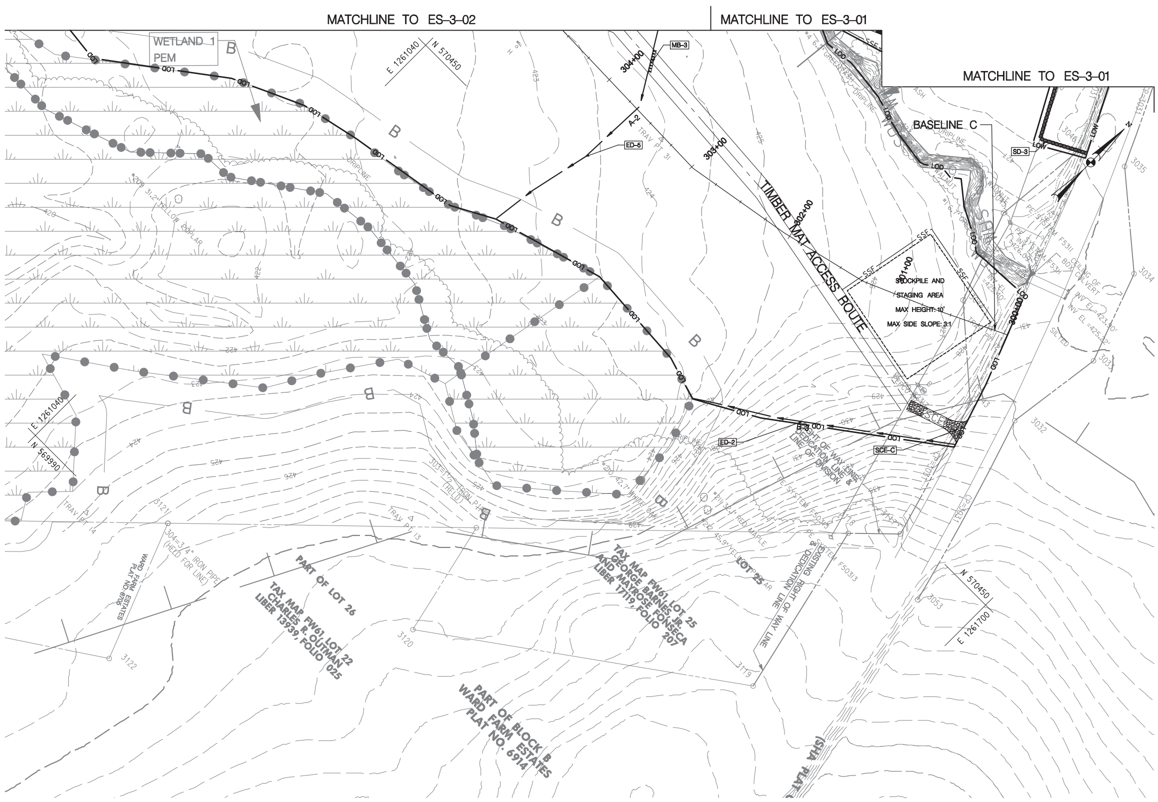
SHEET NO. 42 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:52 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P303_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



40' 0 40' 80'

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

E & S PHASE 3

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. ES-3-04 OF 3-04

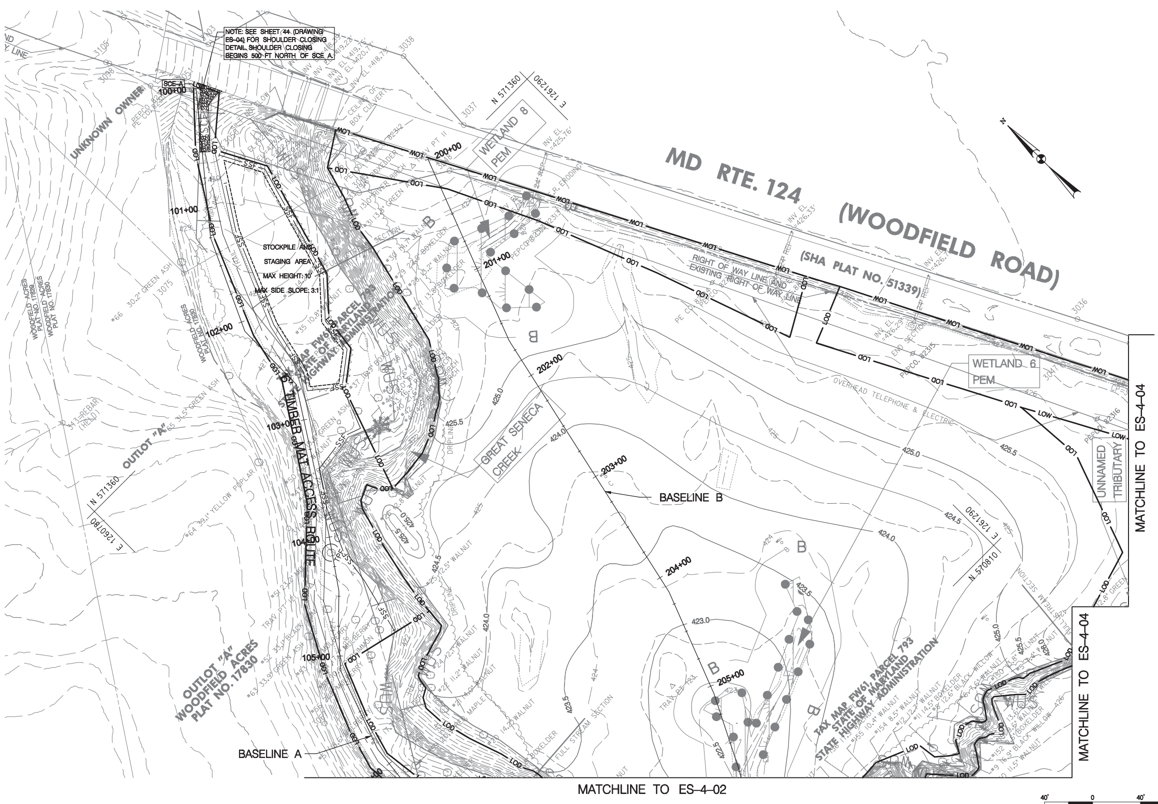
SHEET NO. 43 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:52 AM
FILE: g:\active\2005-03 loc geo\es cm cs\sc-b\cad\2011\pES-P304_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



MATCHLINE TO ES-4-04

MATCHLINE TO ES-4-04

MATCHLINE TO ES-4-02

40' 0 40' 80'

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 4

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH	COUNTY MONTGOMERY COUNTY
DRAWN BY SAP	LOGMILE
CHECKED BY SMC	HORIZONTAL SCALE
F.A.P. NO.	VERTICAL SCALE

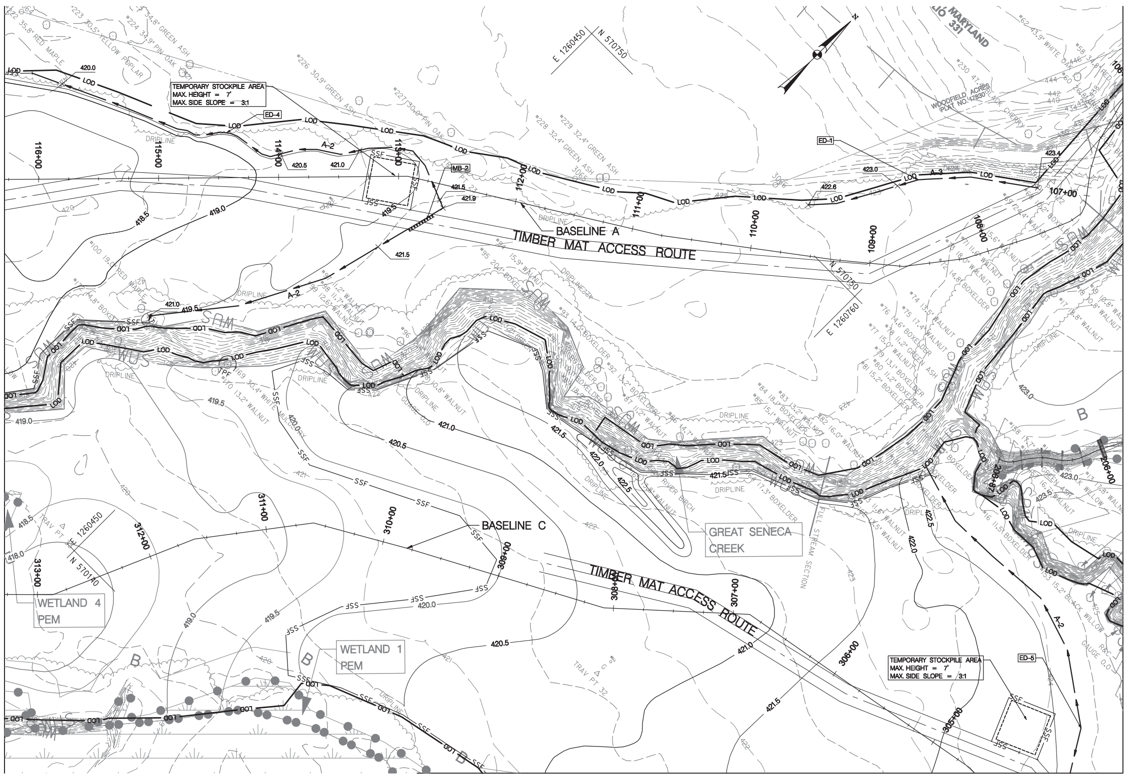
DRAWING NO. ES-4-01 OF 4-04 SHEET NO. 44 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:52 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P401_sc-19.dgn

BY: sumanthap -

COASTAL RESOURCES INC.

QUANTITY NOTES



MATCHLINE TO ES-4-04

STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE A: 112+84 27' L TO BASELINE A: 113+06 25' L	148 L.F.	2.7 Ac	0.8%
	BASELINE A: 115+05 118' L TO BASELINE A: 116+62 161' L	198 L.F.		
	BASELINE C: 303+77 142' L TO BASELINE C: 308+24 183' R	1734 L.F.	4.5 Ac	0.7%
	BASELINE C: 304+29 46' R TO BASELINE C: 304+44 39' R	148 L.F.		

Note: Slopes listed for super silt fence are average steepness of contributing area.

40' 0 40' 80'
SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

COASTAL RESOURCES INC.

BY: sumanthap -

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
INVASIVE SPECIES TREATMENT	52
LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 4

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. ES-4-02 OF 4-04 | SHEET NO. 45 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:52 AM
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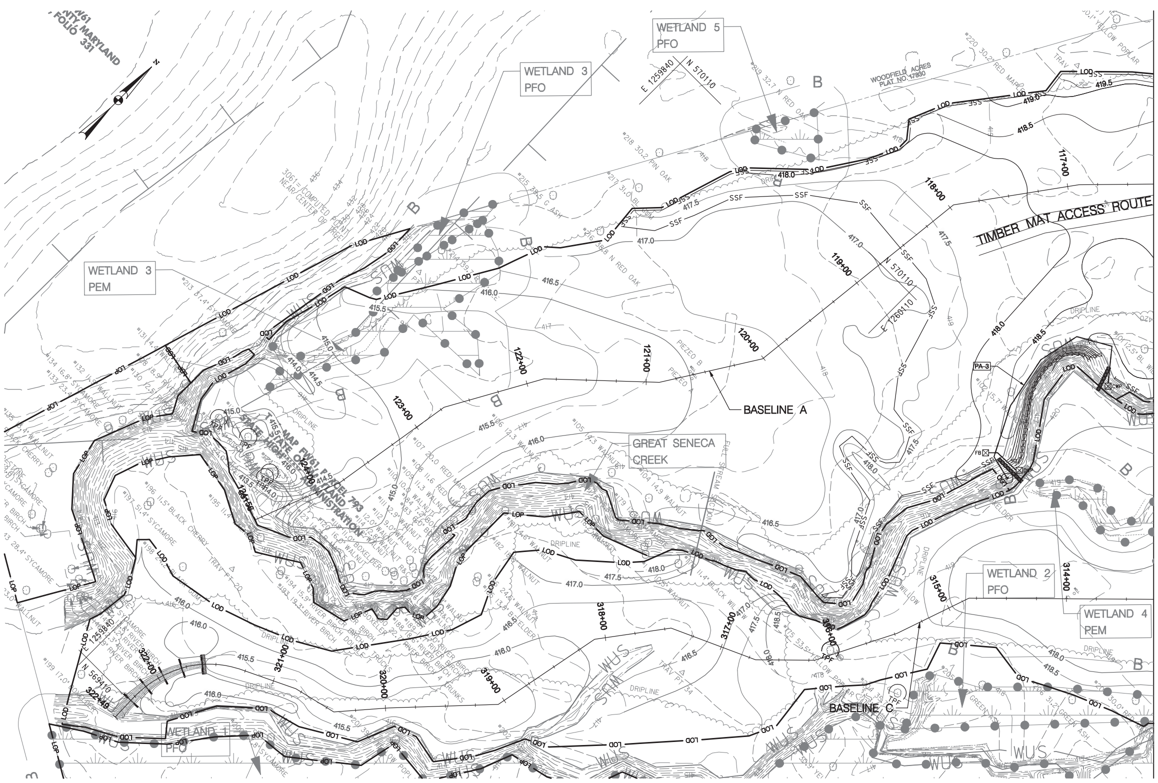
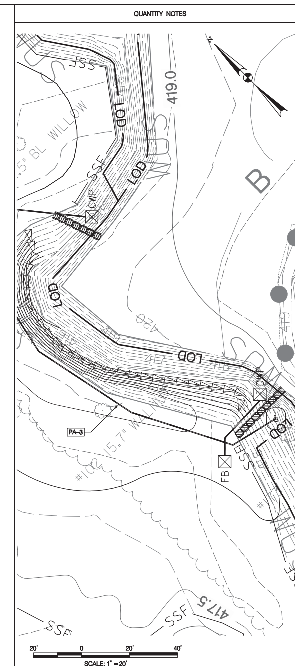


QUANTITY NOTES



STRUCTURE		LOCATION	QUANTITY	DRAINAGE AREA	SLOPE		
SUPER SILT FENCE		BASELINE A: 116+05 89' R TO BASELINE A: 119+04 186' L	1382 L.F.	2.7 Ac	0.8%	SANDBAG ELEVATION	
		BASELINE A: SEE ES-4-02 of ES-4-04 (SHEET 47)				UPSTREAM	DOWNSTREAM
PUMP AROUND PRACTICE	PA-3	BASELINE A: 116+68 168' L TO BASELINE A: 119+05 205' L	1 EA			419.0'	418.0'

Note: Slopes listed for super silt fence are average steepness of contributing area.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

BY: sumanthap –

COASTAL RESOURCES INC.

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
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SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
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LANDSCAPING PLAN	53
WETLAND CROSS SECTIONS	54-67

R /W PLAT NUMBER

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 4

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

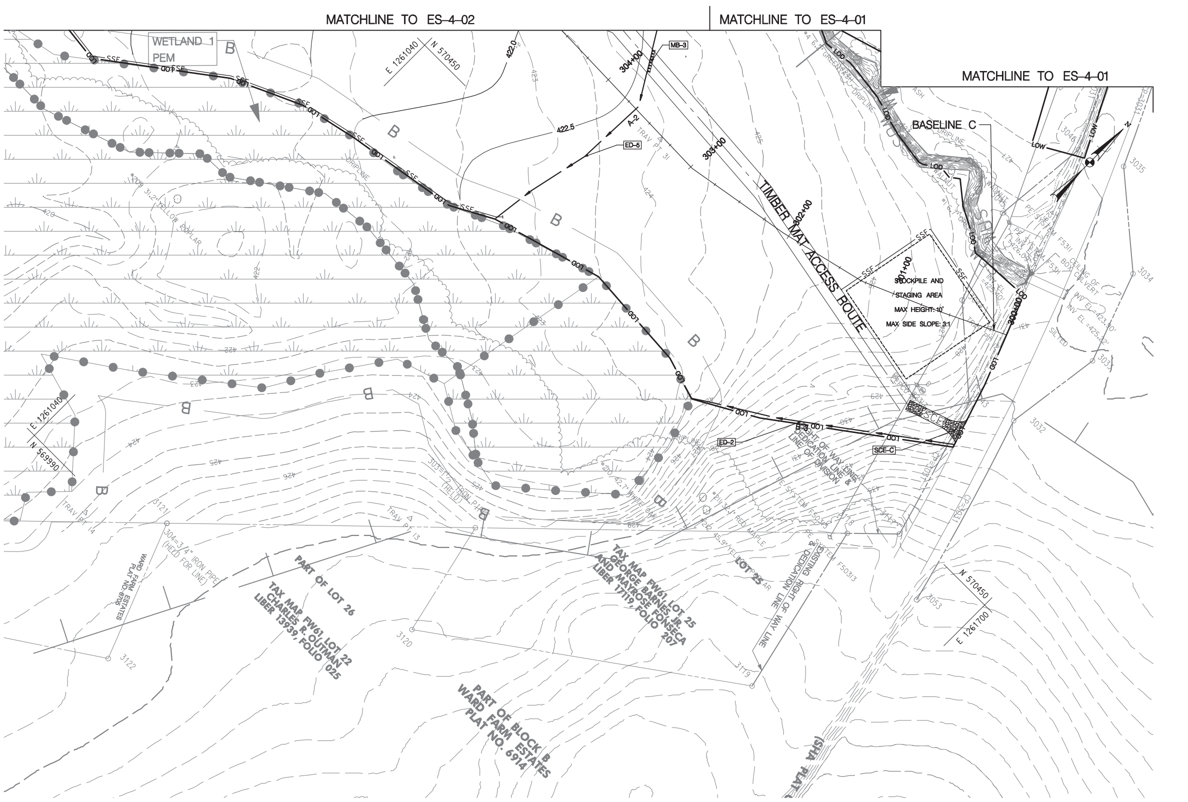
DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. ES-4-03 OF 4-04 SHEET NO. 46 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:52 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P403_sc-19.dgn

QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE C SEE ES-4-02 of ES-4-04 (SHEET 45)			

Note: Slopes listed for super silt fence are average steepness of contributing area.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
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GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
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R / W PLAT NUMBER

REVISIONS

SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

E & S PHASE 4

SCALE 1" = 40' ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. ES-4-04 OF 4-04 SHEET NO. 47 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:53 AM
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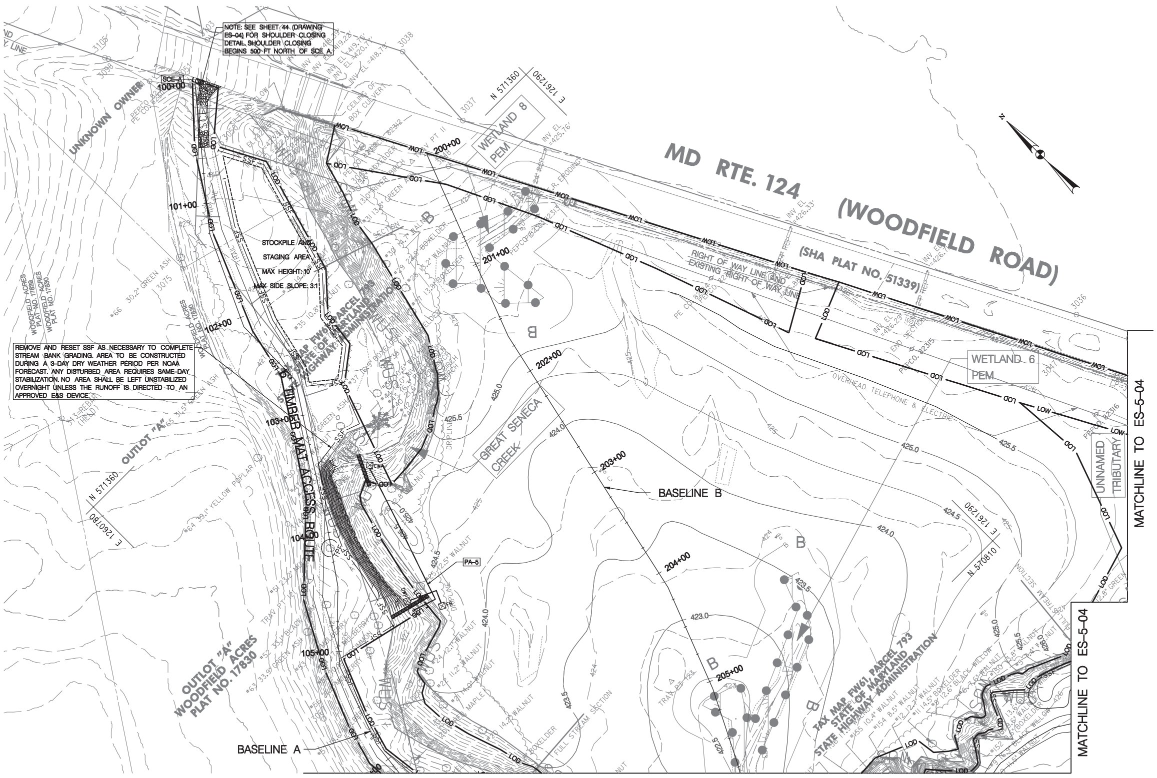
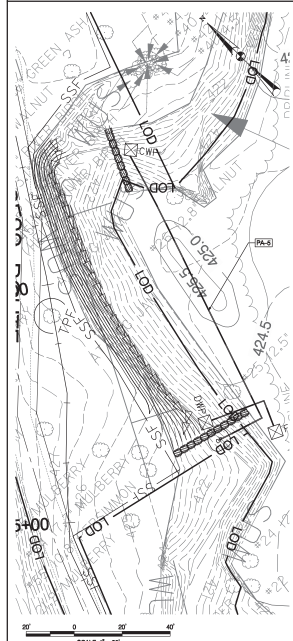
COASTAL RESOURCES INC.

BY: sumanthap -



QUANTITY NOTES



SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STRUCTURE		LOCATION	QUANTITY	DRAINAGE AREA	SLOPE	SANDBAG ELEVATION	
SUPER SILT FENCE		BASELINE A: SEE ES-5-02 of ES-5-04 (SHEET 49)				UPSTREAM	DOWNSTREAM
PUMP AROUND PRACTICE	PA-5	BASELINE A: 103+52 46' L TO BASELINE A: 104+65 64' L	1 EA			420.5'	419.5'

Note: Slopes listed for super silt fence are average steepness of contributing area.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
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GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
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WETLAND CROSS SECTIONS	54-67

R/W PLAT NUMBER

REVISIONS

E & S PHASE 5

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ______
COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. ES-5-01 OF 5-04 SHEET NO. 48 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:53 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P501_sc-19.dgn

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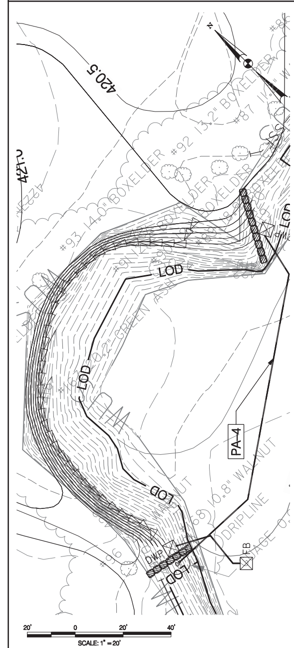
COASTAL RESOURCES INC.

MATCHLINE TO ES-5-04

QUANTITY NOTES



STRUCTURE		LOCATION	QUANTITY	DRAINAGE AREA	SLOPE	SANDBAG ELEVATION UPSTREAM	SANDBAG ELEVATION DOWNSTREAM
SUPER SILT FENCE		BASELINE A: 104+81 46' L TO BASELINE A: 110+67 146' L	792 L.F.	3.6 Ac	0.8%		
		BASELINE A: 112+68 150' L TO BASELINE A: 117+03 81' R	814 L.F.				
		BASELINE C: SEE ES-5-04 of ES-5-04 (SHEET 51)					
PUMP AROUND PRACTICE	PA-4	BASELINE A: 111+16 159' L TO BASELINE A: 112+60 155' L	1 EA			420.5'	419.5'

Note: Slopes listed for super silt fence are average steepness of contributing area. Slopes listed for earth dikes are longitudinal slopes for earth dike.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 5

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
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GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
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WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

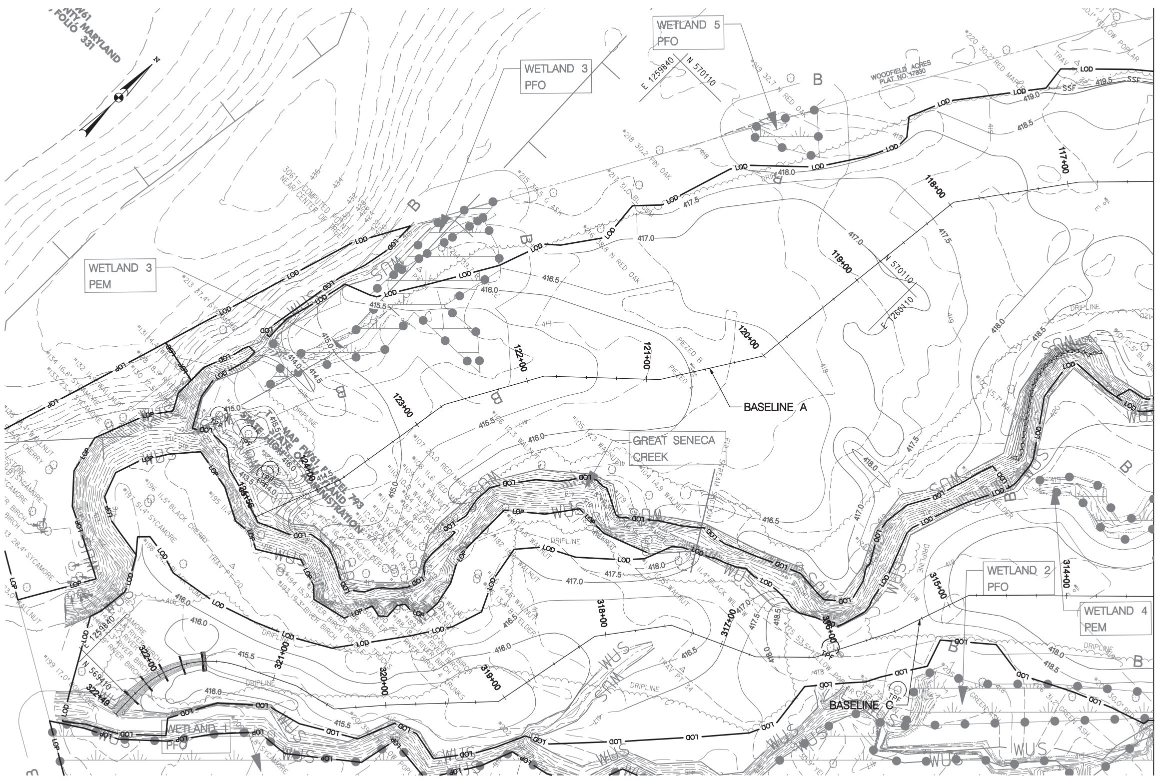
DRAWING NO. ES-5-02 OF 5-04 SHEET NO. 49 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:53 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P502_sc-19.dgn

COASTAL RESOURCES INC.

BY: sumanthap -

QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE A SEE ES-5-02 of ES-5-04 (SHEET 49)			

Note: Slopes listed for super silt fence are average steepness of contributing area. Slopes listed for earth dikes are longitudanal slopes for earth dike.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

BY: sumanthap –

COASTAL RESOURCES INC.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
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GRADING SHEETS	12-16
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WETLAND CROSS SECTIONS	54-67

R / W PLAT NUMBER

REVISIONS

E & S PHASE 5

SCALE 1" = 40' ADVERTISED DATE ________ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO. ________

COUNTY MONTGOMERY COUNTY
LOGMILE ________
HORIZONTAL SCALE ________
VERTICAL SCALE ________

DRAWING NO. ES-5-03 OF 5-04

SHEET NO. 50 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:53 AM
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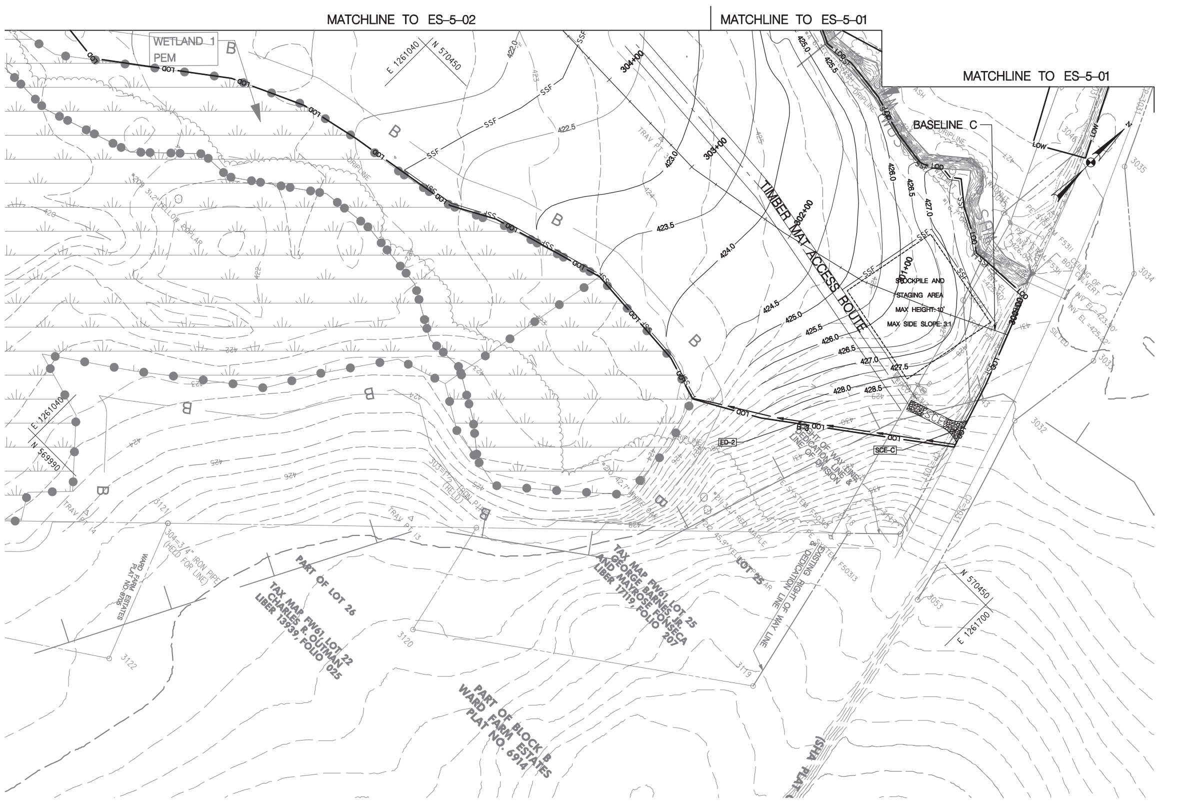
QUANTITY NOTES



STRUCTURE	LOCATION	QUANTITY	DRAINAGE AREA	SLOPE
SUPER SILT FENCE	BASELINE C: 300+10 79' L TO BASELINE C: 301+98 158' L	1696 L.F.	3.1 Ac	1.9%

Note: Slopes listed for super silt fence are average steepness of contributing area. Slopes listed for earth dikes are longitudanal slopes for earth dike.

SCALE: 1" = 40'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

E & S PHASE 5

CROSS REFERENCE	
ITEM	SHEET NOs.
WETLAND DETAILS	03-05
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R/W PLAT NUMBER

REVISIONS

SCALE 1" = 40' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY SAP
CHECKED BY SMC
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. ES-5-04 OF 5-04 SHEET NO. 51 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:54 AM
FILE: g:\active\2005-03 loc gec\es cm cs\sc-b\cad\2011\pES-P504_sc-19.dgn

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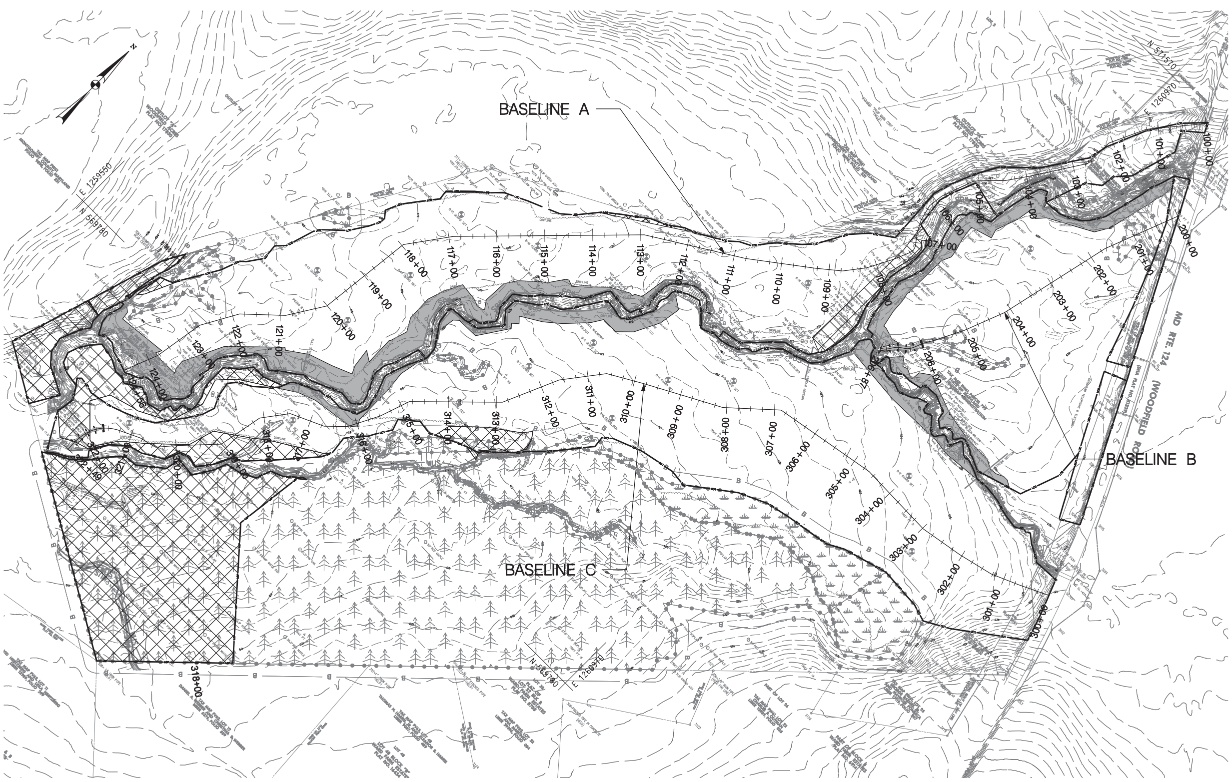
QUANTITY NOTES



GENERAL NOTES:
1. INVASIVE SPECIES MAPPING FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL FLAG AREAS FOR INVASIVE SPECIES REMOVAL AND GET APPROVAL FROM ENGINEER PRIOR TO REMOVAL.
2. REMOVE ALL SOIL AND GRUBBED ROOTMAT AND DISPOSE OF OFFSITE WHEN GRADING IN INVASIVE SPECIES AREA AS DIRECTED BY THE ENGINEER.

LEGEND

TREATMENT 1: MANUAL TREATMENT ONLY (ASIATIC TEARTHUMB DOMINATED)

TREATMENT 2: HERBICIDE, MANUAL TREATMENT, AND MULCH (REED CANARY GRASS DOMINATED)

SCALE: 1" = 100'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19
WETLAND MITIGATION PROJECT

INVASIVE SPECIES TREATMENT PLAN

SCALE 1" = 100' ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY CMW
CHECKED BY MPH
F.A.P. NO.

COUNTY MONTGOMERY COUNTY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. IV– OF 01 SHEET NO. 52 OF 67

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
GEOMETRIC LAYOUT	10-11
GRADING SHEETS	12-16
SOIL BORING LOGS	17-19
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EROSION & SEDIMENT CONTROL	31-51
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R / W PLAT NUMBER

REVISIONS

PLOTTED: Friday, March 02, 2012 AT 11:54 AM
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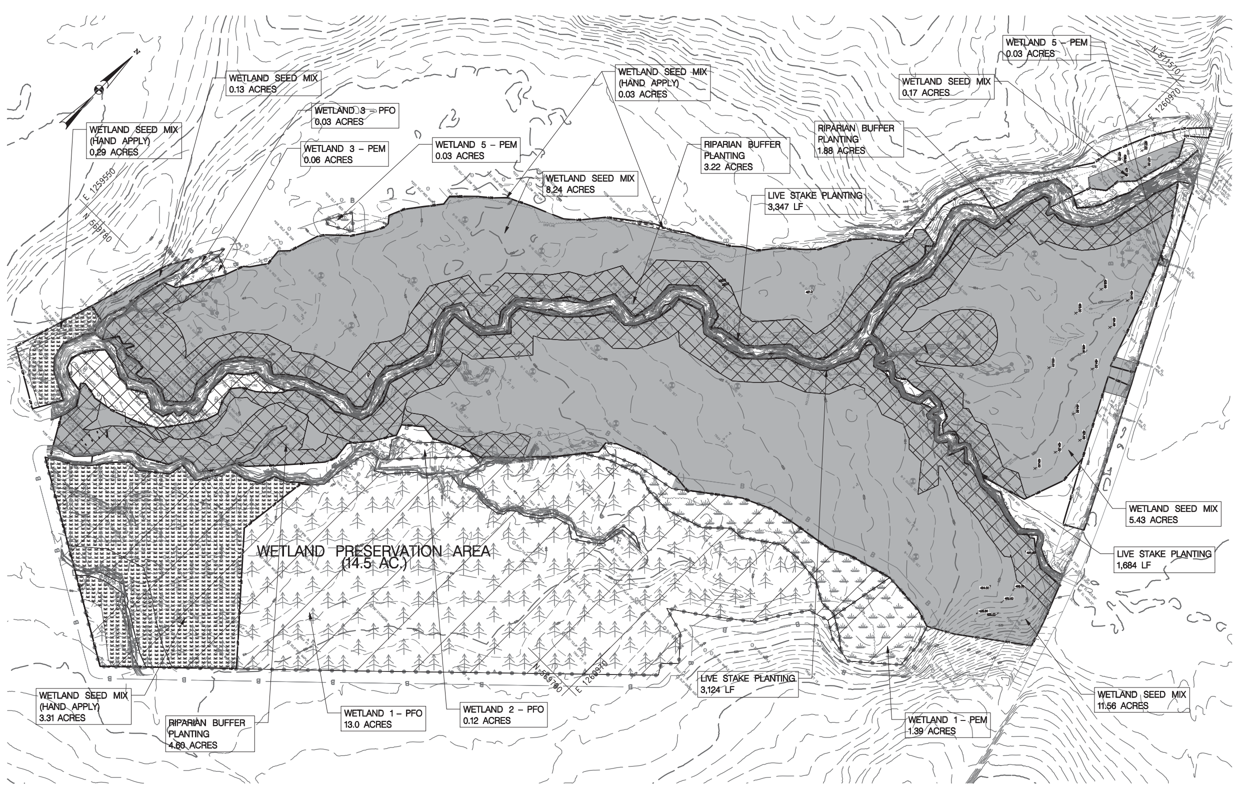
BY: sumanthap –

COASTAL RESOURCES INC.



LEGEND

- RIPARIAN BUFFER PLANTING
- WETLAND SEED MIX
- LIVE STAKE ESTABLISHMENT ZONE
- WETLAND SEED MIX (HAND APPLY)
- PALUSTRINE EMERGENT WETLAND
- PALUSTRINE FORESTED WETLAND

BY: sumanthap –

COASTAL RESOURCES INC.

QUANTITY NOTES

RIPARIAN BUFFER PLANTING - 9.7 Acres

QUANTITY	BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SIZE	ROOT	TYPE A SPACING
500	QUERCUS BICOLOR	SWAMP WHITE OAK	FACW+	5 FT	CONT.	14 FT O.C.
300	QUERCUS PALUSTRIS	PIN OAK	FACW	5 FT	CONT.	14 FT O.C.
600	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	FACW-	5 FT	CONT.	14 FT O.C.
600	BETULA NIGRA	RIVER BIRCH	FACW	5 FT	CONT.	14 FT O.C.
100	NYSSA SYLVATICA	BLACK GUM	FAC	5 FT	CONT.	14 FT O.C.
300	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	FAC	5 FT	CONT.	14 FT O.C.
100	AMELANCHIER ARBOREA	COMMON SERVICEBERRY	FAC-	2 FT	CONT.	14 FT O.C.
200	ALNUS SERRULATA	HAZEL ALDER	OBL	2 FT	CONT.	14 FT O.C.

TUBELINGS - FABRIC ENCAPSULATED SOIL LIFTS

QUANTITY	BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SIZE	ROOT	TYPE A SPACING
500	CORNUS AMOMUM	SILKY DOGWOOD	FACW	4 FT	TUBELING	2 FT O.C.

WETLAND SEED MIX - 29.1 Acres

BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SPACING
CAREX LURIDA	SHALLOW SEDGE	OBL	3 LBS/AC
CAREX VULPINOIDEA	FOX SEDGE	OBL	3 LBS/AC
PANICUM VIRGATUM	SWITCH GRASS	FAC	2 LBS/AC
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	FACW-	2 LBS/AC
ELYMUS RIPARIUS	RIVERBANK WILD RYE	FACW	2 LBS/AC
GLYCERIA STRIATA	FOWL MANNAGRASS	OBL	2 LBS/AC
JUNCUS EFFUSUS	COMMON RUSH	FACW+	3 LBS/AC
IMPATIENS CAPENSIS	JEWELWEED	FACW	2 LBS/AC
LEERSIA ORYZOIDES	RICE CUTGRASS	OBL	2 LBS/AC
EUPATORIADELPHUS FISTULOSUS	TRUMPETWEED	FACW	2 LBS/AC
VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	FACW+	2 LBS/AC
ASCLEPIUS INCARNATA	SWAMP MILKWEED	OBL	2 LBS/AC
EUPATORIUM PERFOLIATUM	COMMON BONESET	FACW+	2 LBS/AC
LOBELIA CARDINALIS	CARDINALFLOWER	FACW+	2 LBS/AC
LUDWIGIA ALTERNIFOLIA	SEEDBOX	FACW+	2 LBS/AC
CORNUS AMOMUM	SILKY DOGWOOD	FACW	3 LBS/AC
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	OBL	3 LBS/AC
BETULA NIGRA	RIVER BIRCH	FACW	3 LBS/AC
ACER SACCHARINUM	SILVER MAPLE	FACW	2 LBS/AC
PLATANUS OCCIDENTALIS	SYCAMORE	FACW-	2 LBS/AC

LIVE STAKES - 8,154 Linear Feet

QUANTITY	BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SIZE	ROOT	TYPE A SPACING
4120	SALIX NIGRA	BLACK WILLOW	FACW+	4 FT	LIVE STAKE	1.5 FT O.C.
4120	CORNUS AMOMUM	SILKY DOGWOOD	FACW	4 FT	LIVE STAKE	1.5 FT O.C.

100' 0 100' 200'
SCALE: 1" =100'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC–19

WETLAND MITIGATION PROJECT

CROSS REFERENCE

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R / W PLAT NUMBER

REVISIONS

LANDSCAPING PLAN

SCALE 1" = 100' ADVERTISED DATE ____ CONTRACT NO. AX3765P60

DESIGNED BY MPH
DRAWN BY CMW
CHECKED BY MPH
F.A.P. NO. ____

COUNTY MONTGOMERY COUNTY
LOGMILE ____
HORIZONTAL SCALE ____
VERTICAL SCALE ____

DRAWING NO. LP – 01 OF 01 SHEET NO. 53 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:54 AM
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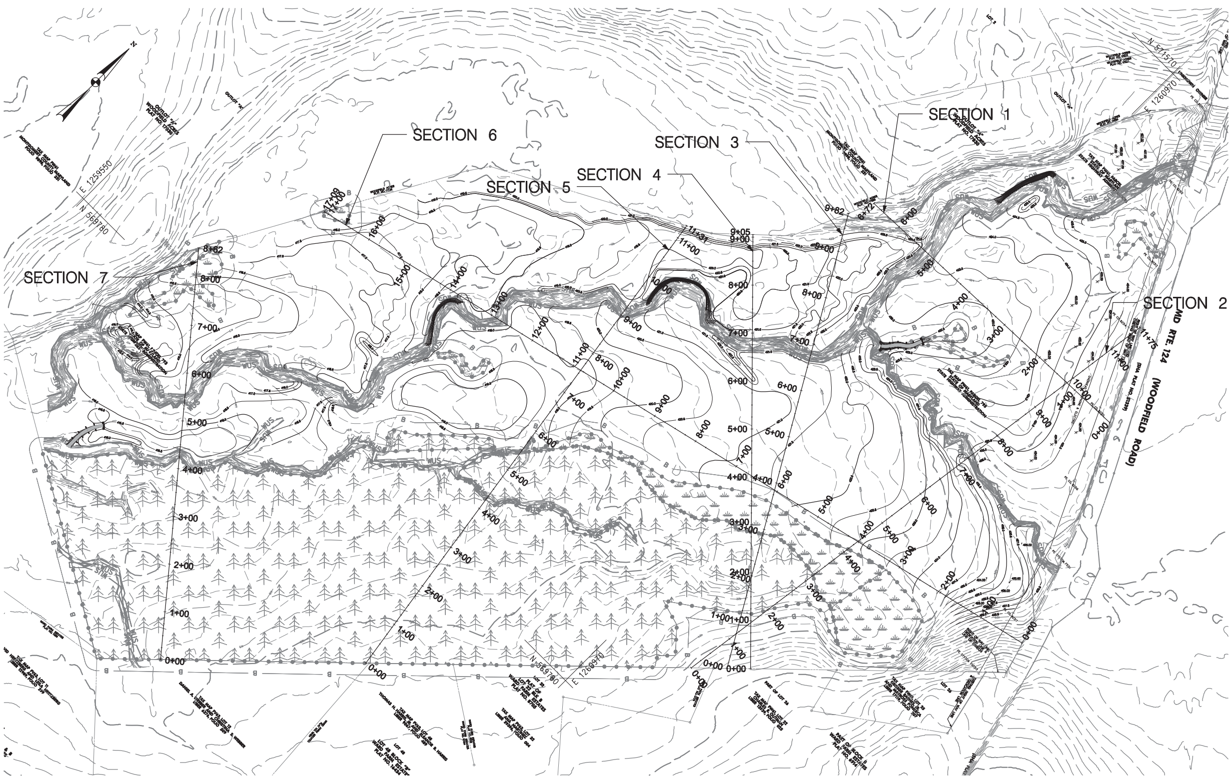
QUANTITY NOTES



DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

CROSS SECTION LOCATION SHEET

SCALE 1" = 100' ADVERTISED DATE ______ CONTRACT NO. AX3765P60

DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
LOGMILE ______
HORIZONTAL SCALE ______
VERTICAL SCALE ______

DRAWING NO. CS-01 OF 14 SHEET NO. 54 OF 67

CROSS REFERENCE

ITEM	SHEET NOs.
WETLAND DETAILS	03-05
EROSION & SEDIMENT CONTROL NOTES	06-09
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SOIL BORING LOGS	17-19
WETLAND PROFILES	20-30
EROSION & SEDIMENT CONTROL	31-51
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LANDSCAPING PLAN	53
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R /W PLAT NUMBER

REVISIONS

PLOTTED: Friday, March 02, 2012 AT 11:55 AM
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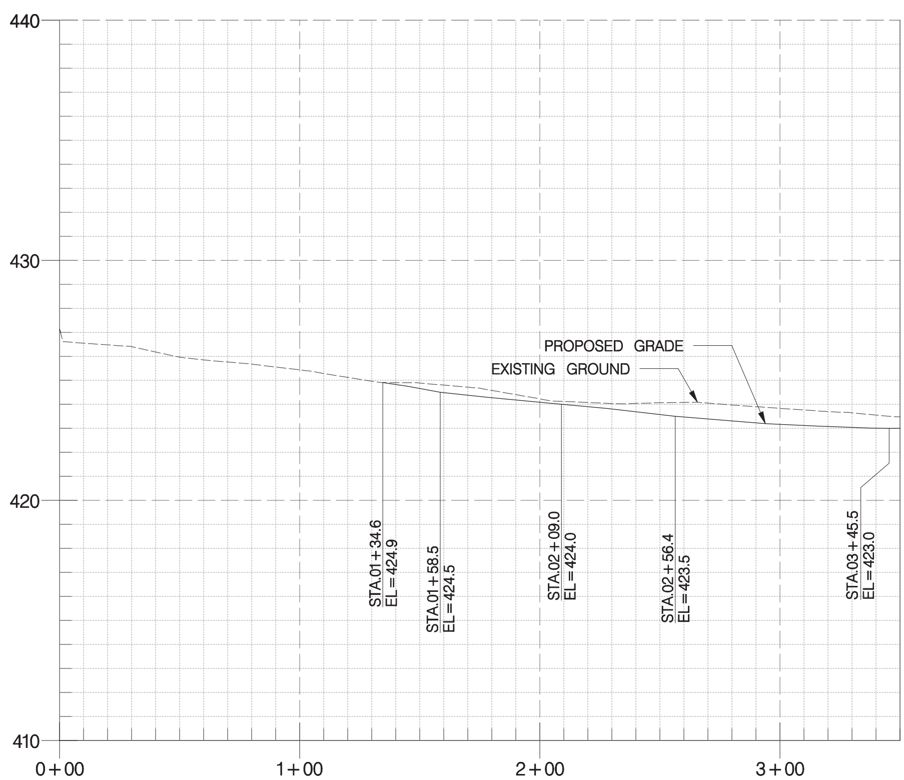
COASTAL RESOURCES INC.

BY: sumanthap -

SECTION 1 THROUGH STREAM VALLEY



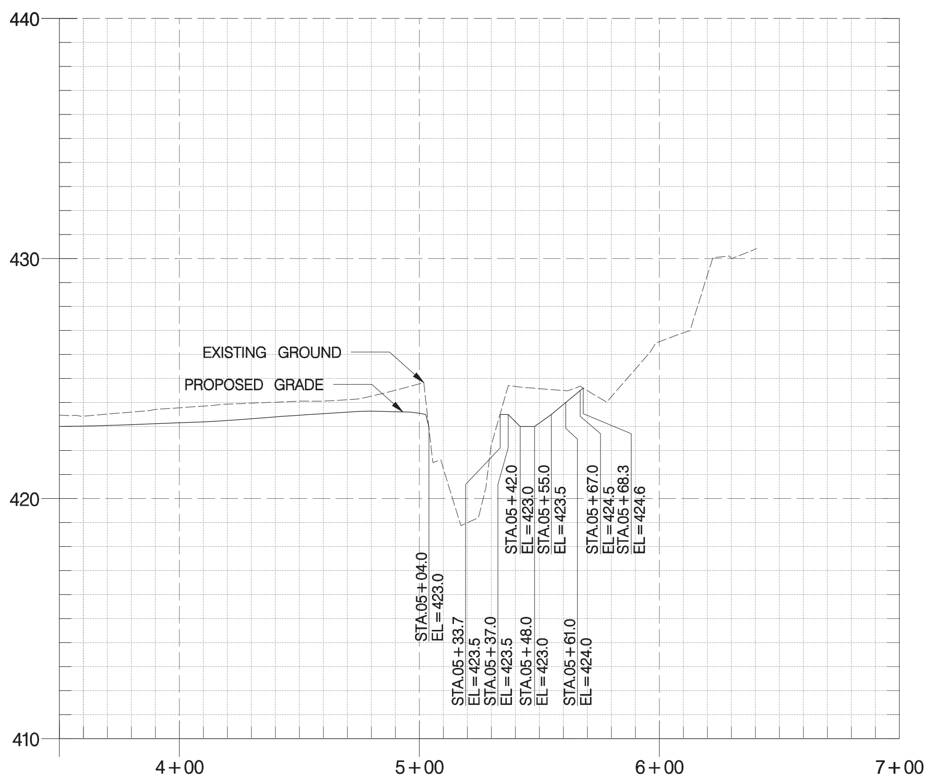
BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ____ STATION ____ TO STATION ____
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO. ____ COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-02 OF 14 — SHEET NO. 55 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:55 AM
FILE: g:\active\2005-03 icc gec\es cm cs\sc-b\cad\2011\pHC-X002_sc-19.dgn

SECTION 1 THROUGH STREAM VALLEY

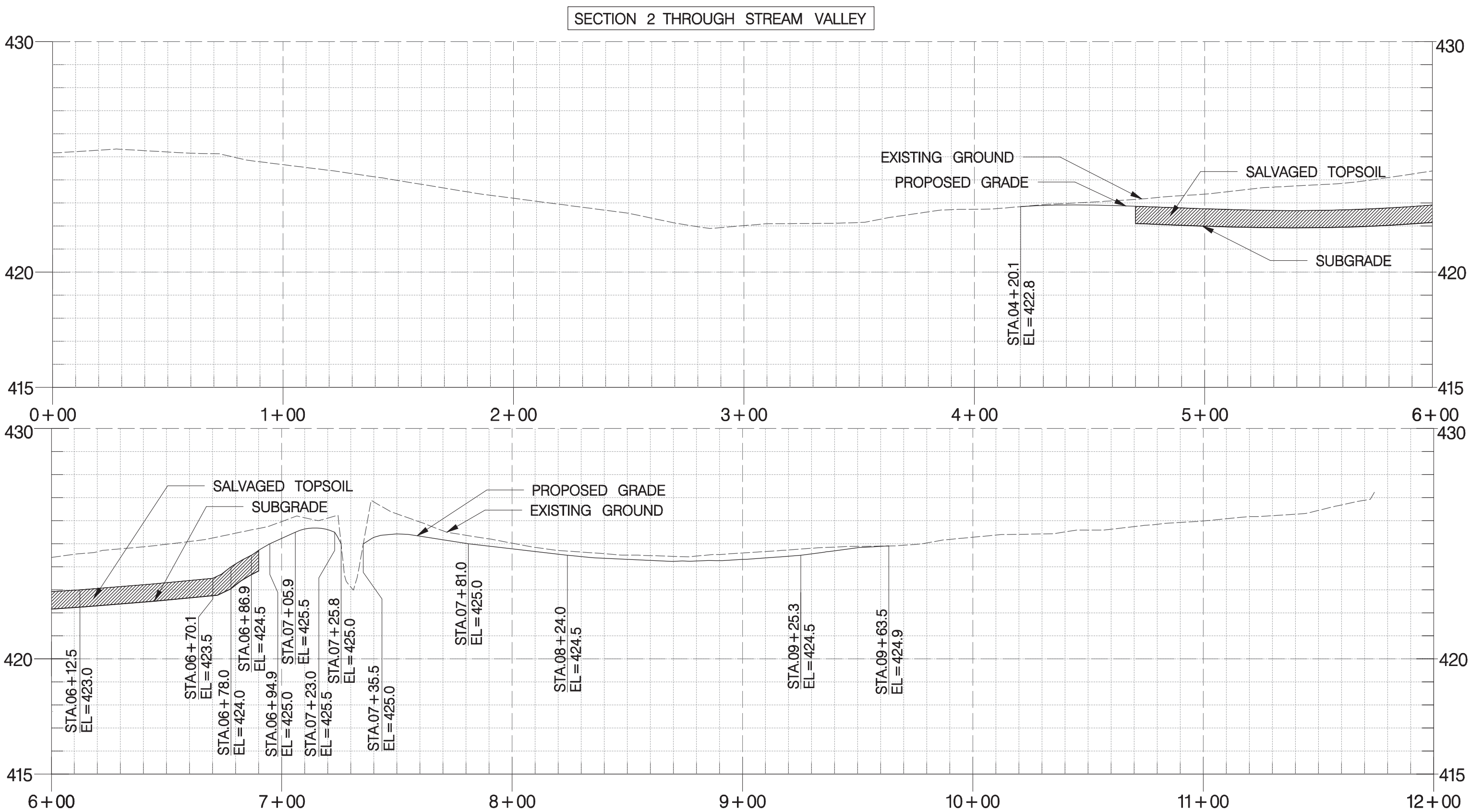


BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ______ STATION ______ TO STATION ______	
SHA STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO.	COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-03 OF 14	SHEET NO. 56 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:55 AM
FILE: g:\active\2005-03 icc geo\es cm cs\sc-b\cad\2011\pHC-X003_sc-19.dgn



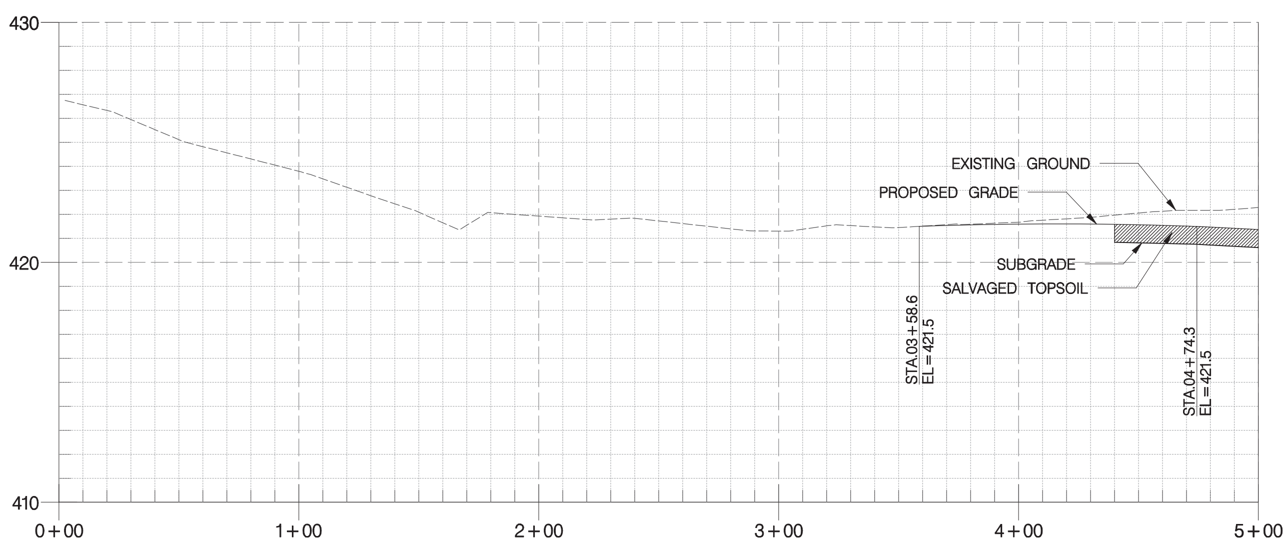
BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ____ STATION ____ TO STATION ____	
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO.	COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-04 OF 14	SHEET NO. 57 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:55 AM
FILE: g:\active\2005-03 icc geo\es cm cs\sc-b\cad\2011\pHC-X004_sc-19.dgn

SECTION 3 THROUGH STREAM VALLEY



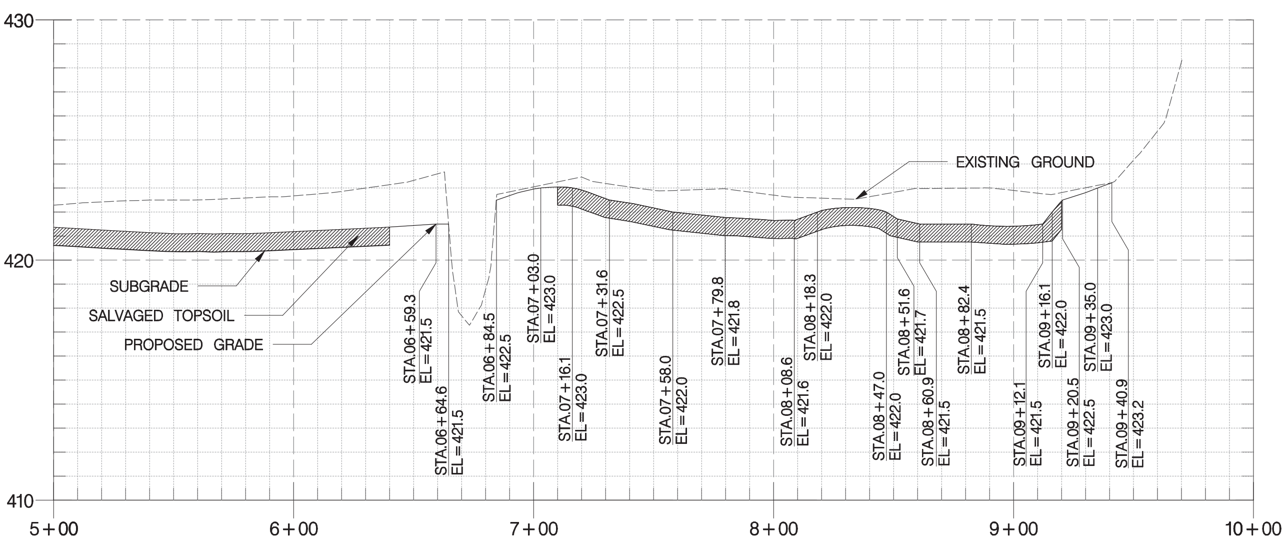
BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ______ STATION ______ TO STATION ______
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC–19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO. COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS–05 OF 14 · SHEET NO. 58 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
FILE: g:\active\2005-03 icc geo\es cm cs\sc-b\cad\2011\pHC-X005_sc-19.dgn

SECTION 3 THROUGH STREAM VALLEY



BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ______ STATION ______ TO STATION ______	
SHA — STATE OF MARYLAND, DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, HIGHWAY DESIGN DIVISION — SC-19 — WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO.	COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-06 OF 14	SHEET NO. 59 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
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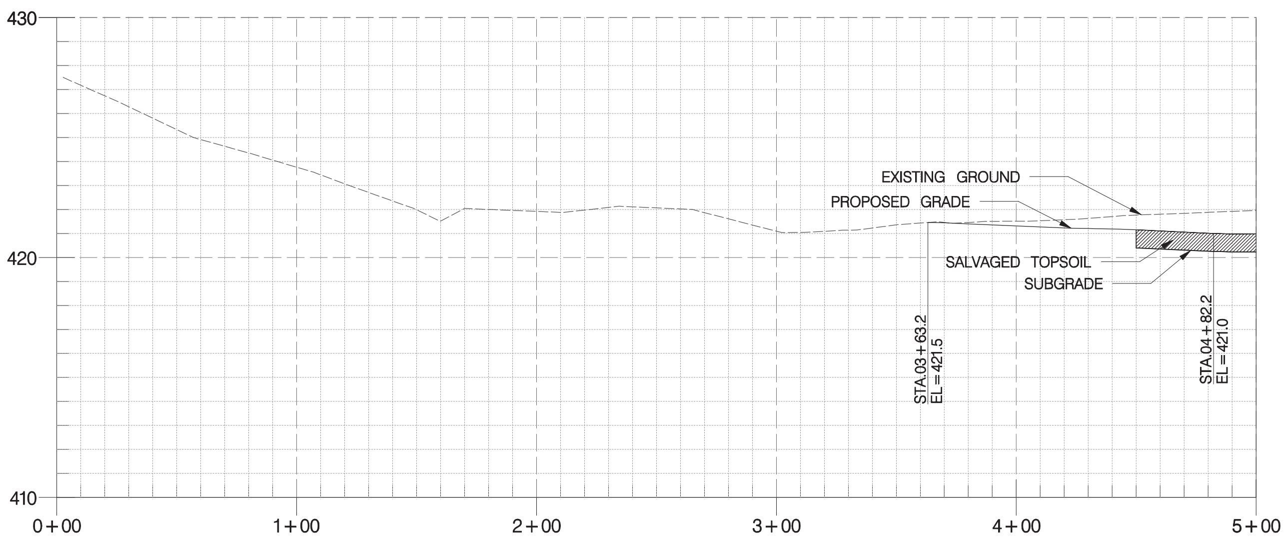
SECTION 4 THROUGH STREAM VALLEY



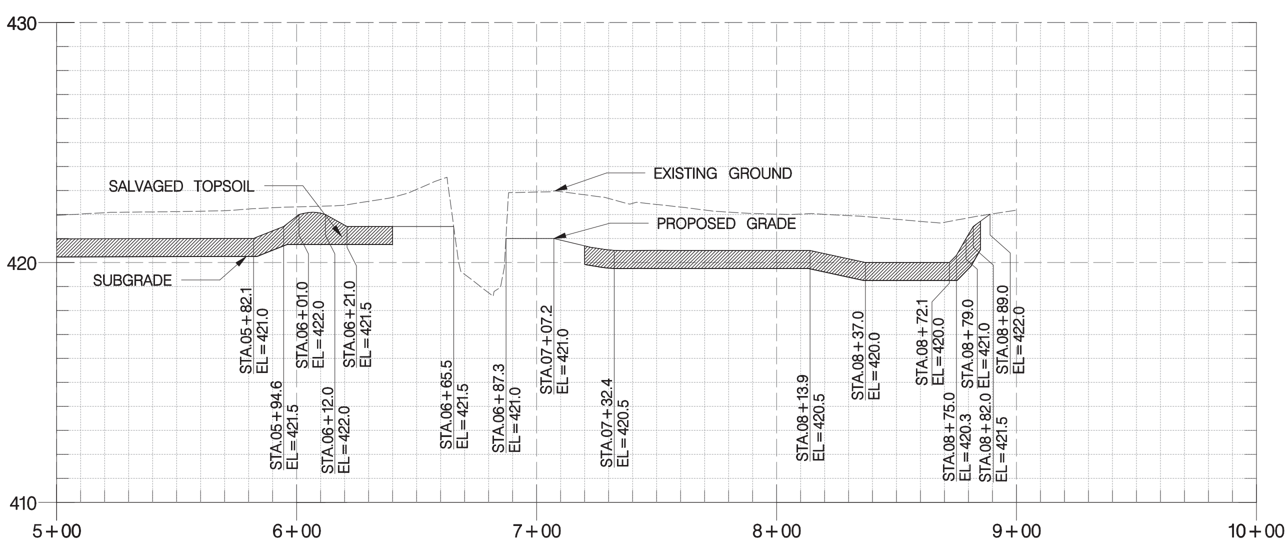
BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ______ STATION ______ TO STATION ______	
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO.	COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-07 OF 14	SHEET NO. 60 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
FILE: g:\active\2006-03 icc geo\es cm cs\sc-b\cad\2011\pHC-X007_sc-19.dgn

SECTION 4 THROUGH STREAM VALLEY



BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

ROAD ______ STATION ______ TO STATION ______

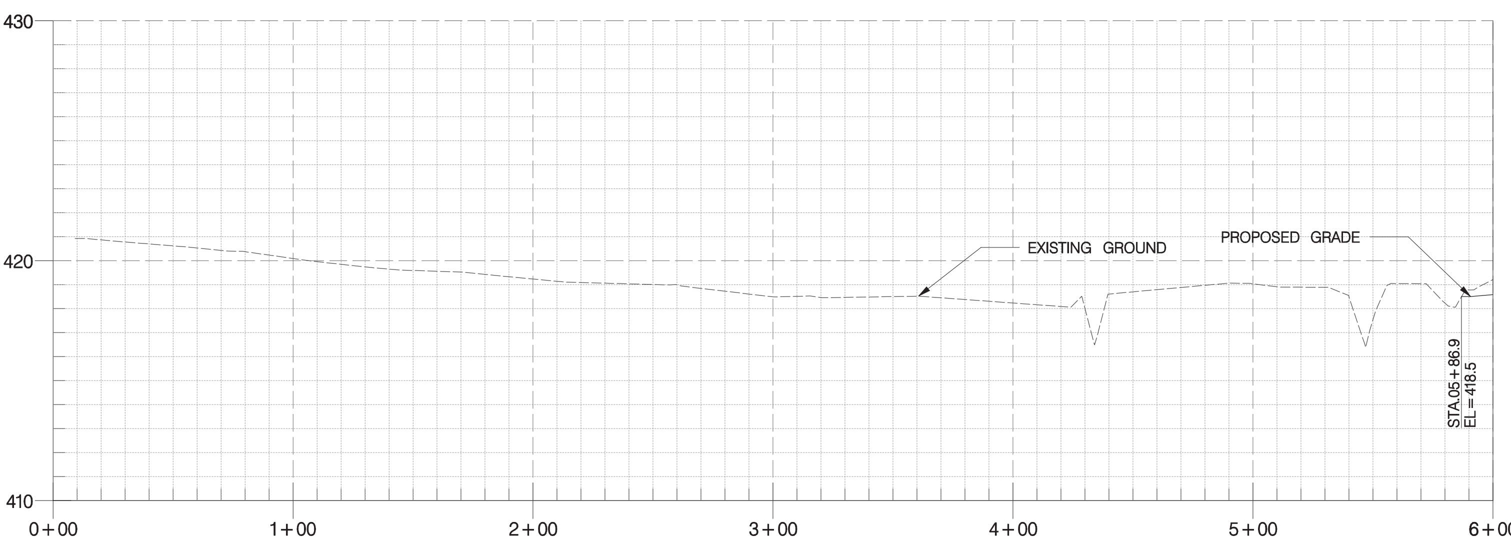
DESIGNED BY MPH, AEB
DRAWN BY CMW
CHECKED BY AEB
F.A.P. NO. ______

COUNTY MONTGOMERY COUNTY
CONTRACT NO. AX3765P60
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

DRAWING NO. CS-08 OF 14
SHEET NO. 61 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
FILE: g:\active\2005-03 icc gec\es cm cs\sc-b\cad\2011\pHC-X008_sc-19.dgn

SECTION 5 THROUGH STREAM VALLEY



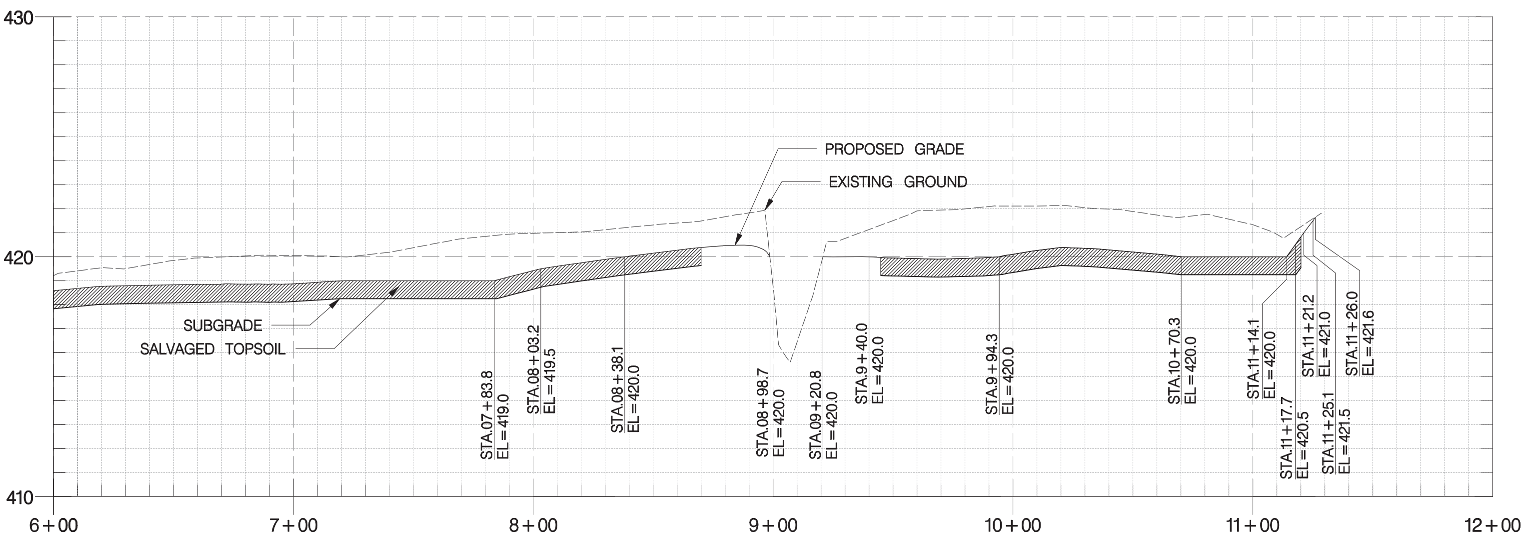
BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ____ STATION ____ TO STATION ____
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO. ____ COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-09 OF 14 — SHEET NO. 62 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
FILE: g:\active\2006-03 icc geo\es cm cs\sc-b\cad\2011\pHC-X009_sc-19.dgn

SECTION 5 THROUGH STREAM VALLEY



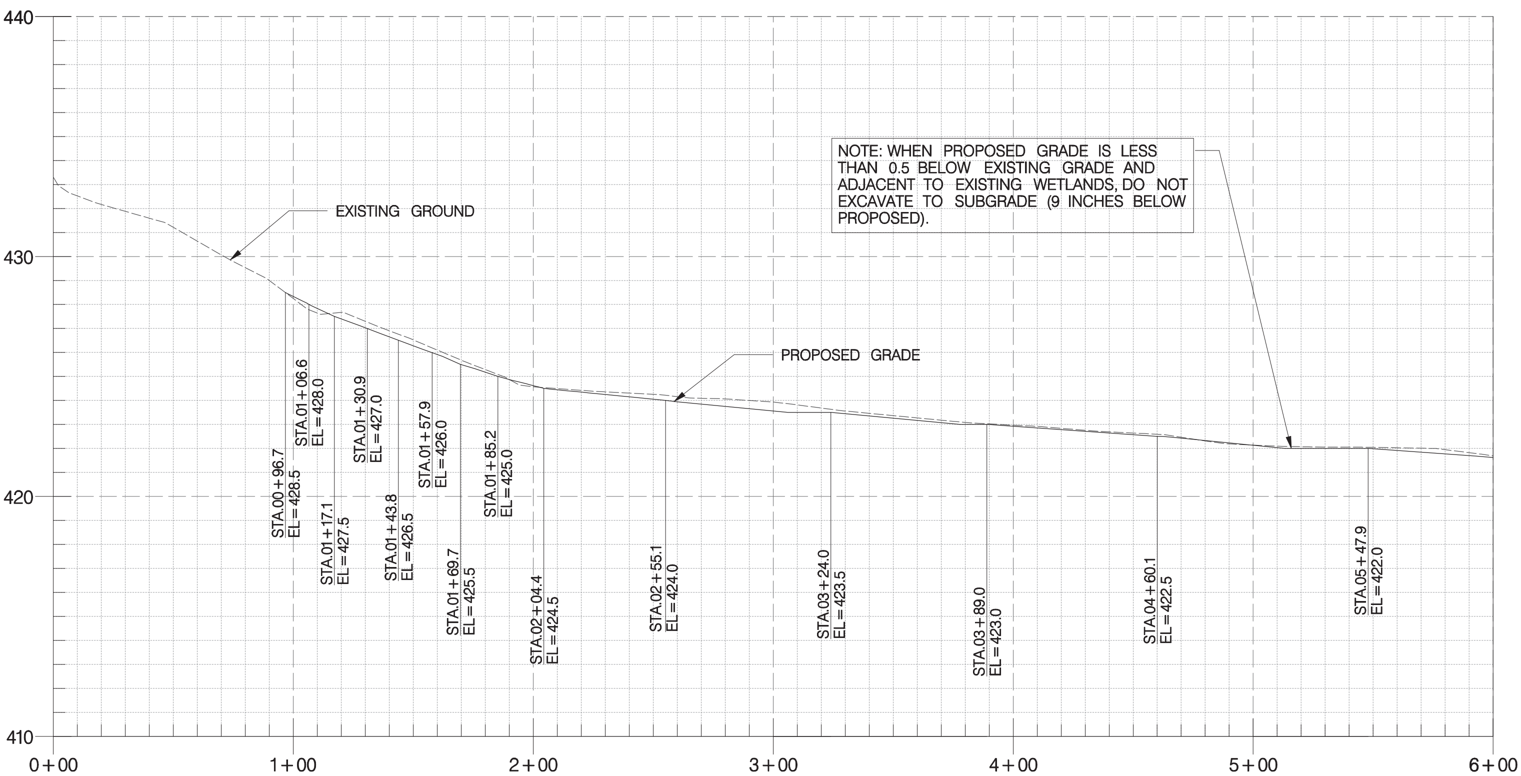
BY: sumanthap –

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ____ STATION ____ TO STATION ____	
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC–19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO.	COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS–10 OF 14	SHEET NO. 63 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
FILE: g:\active\2005-03 icc gec\es cm cs\sc-b\cad\2011\pHC-X010_sc-19.dgn

SECTION 6 THROUGH STREAM VALLEY



BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

ROAD		STATION	TO STATION
DESIGNED BY	MPH, AEB	COUNTY	MONTGOMERY COUNTY
DRAWN BY	CMW	CONTRACT NO.	AX3765P60
CHECKED BY	AEB	HORIZONTAL SCALE	1" = 20'
F.A.P. NO.		VERTICAL SCALE	1" = 2'
DRAWING NO.	CS-11 OF 14	SHEET NO.	64 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
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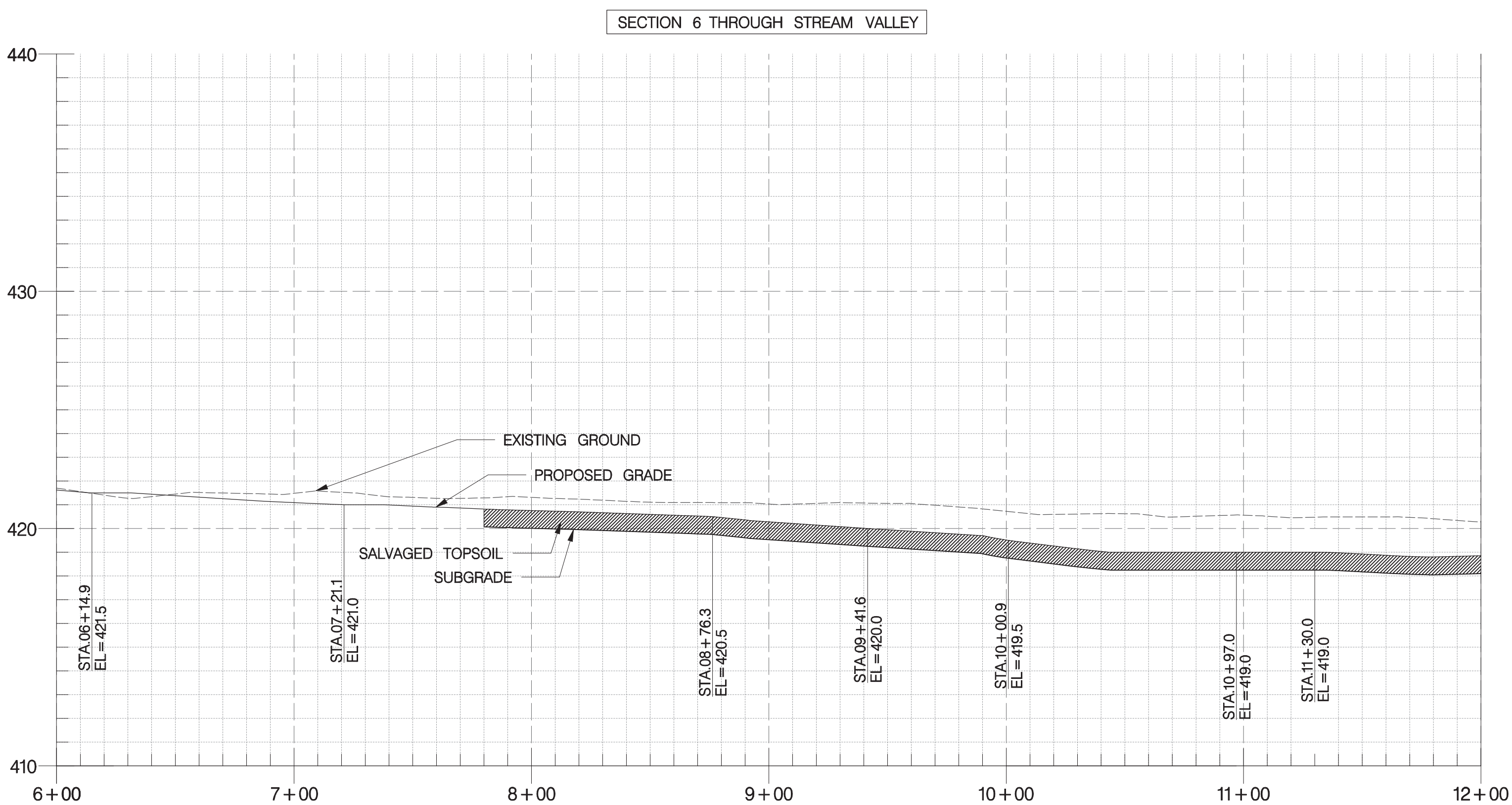

BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

SC-19

WETLAND MITIGATION PROJECT

ROAD ______ STATION ______ TO STATION ______

DESIGNED BY	MPH, AEB	COUNTY	MONTGOMERY COUNTY
DRAWN BY	CMW	CONTRACT NO.	AX3765P60
CHECKED BY	AEB	HORIZONTAL SCALE	1" = 20'
F.A.P. NO.		VERTICAL SCALE	1" = 2'

DRAWING NO. **CS-12** OF **14** SHEET NO. **65** OF **67**

PLOTTED: Friday, March 02, 2012 AT 11:56 AM
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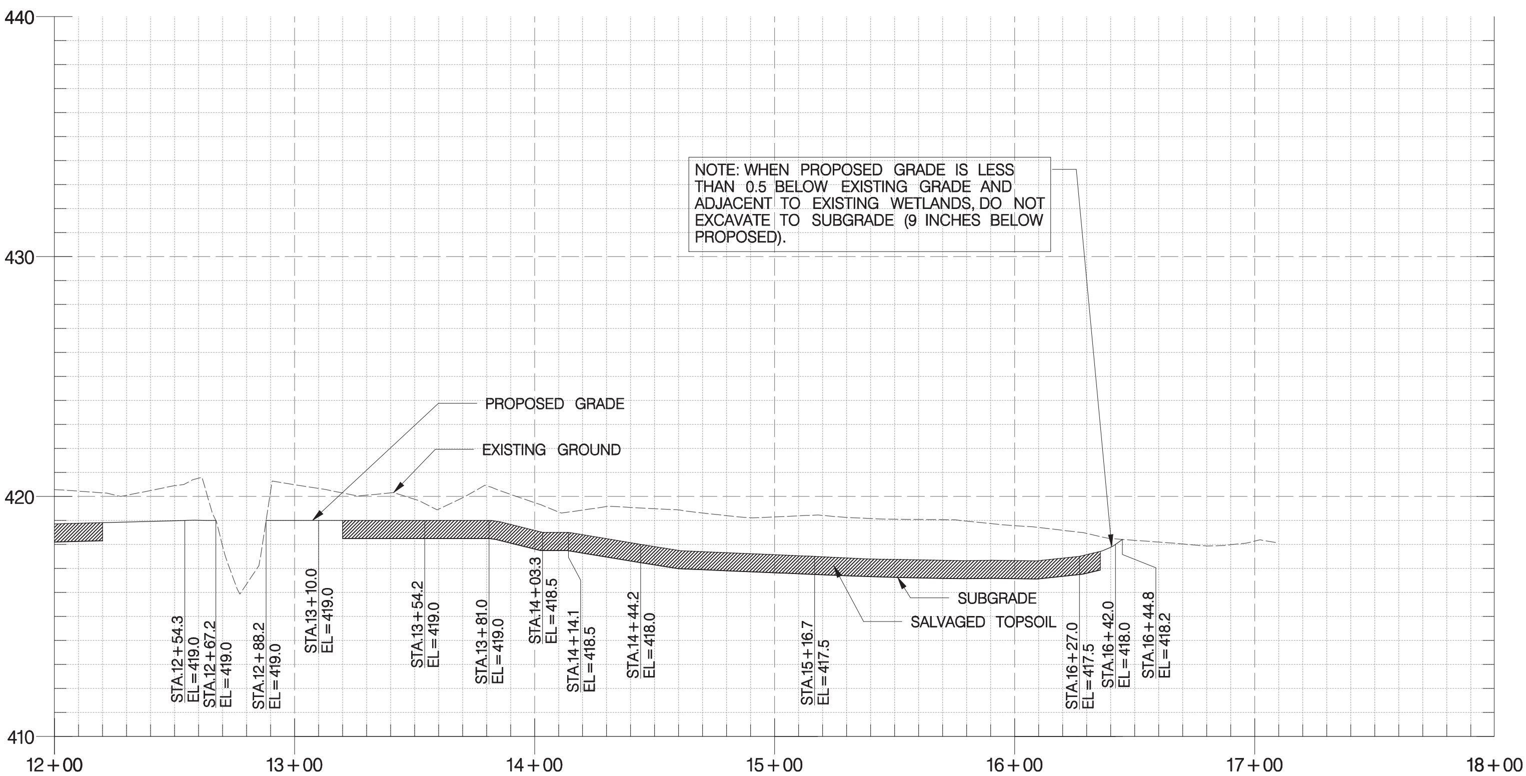
SECTION 6 THROUGH STREAM VALLEY



BY: sumanthap -

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ______ STATION ______ TO STATION ______
SHA — STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO. ______ COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2' DRAWING NO. CS-13 OF 14 SHEET NO. 66 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:57 AM
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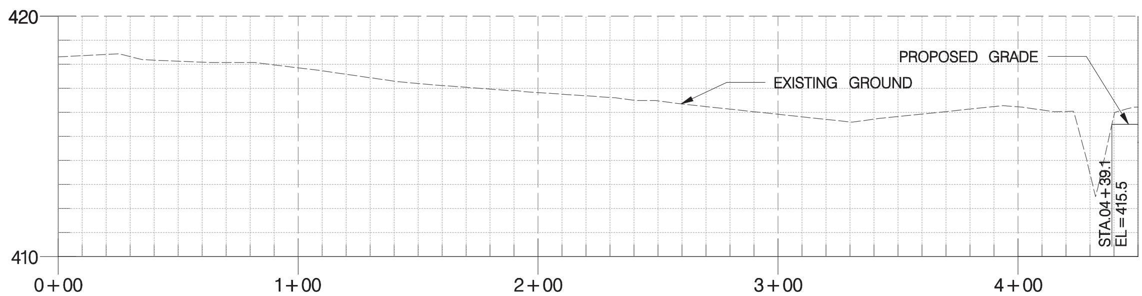
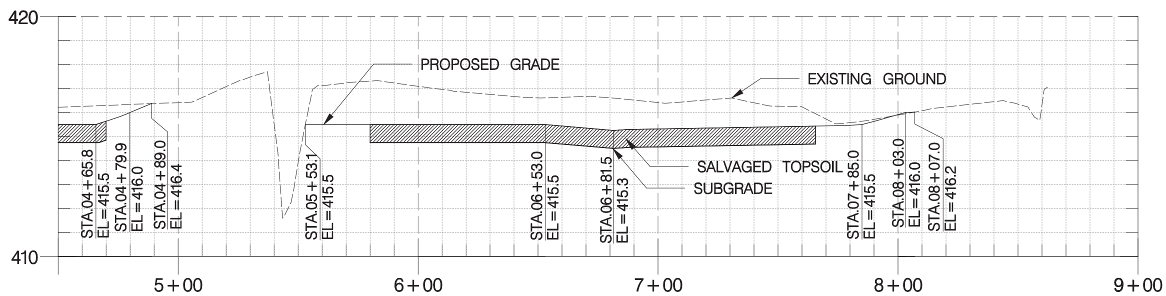
SECTION 7 THROUGH STREAM VALLEY





BY: sumanthap –

COASTAL RESOURCES INC.

WETLAND CROSS SECTION SHEET	ROAD ______ STATION ______ TO STATION ______	
SHA — STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION SC-19 WETLAND MITIGATION PROJECT	DESIGNED BY MPH, AEB DRAWN BY CMW CHECKED BY AEB F.A.P. NO.	COUNTY MONTGOMERY COUNTY CONTRACT NO. AX3765P60 HORIZONTAL SCALE 1" = 20' VERTICAL SCALE 1" = 2'
	DRAWING NO. CS-14 OF 14	SHEET NO. 67 OF 67

PLOTTED: Friday, March 02, 2012 AT 11:57 AM
FILE: g:\active\2005-03 icc gec\es cm cs\sc-b\cad\2011\pHC-X014_sc-19.dgn

INDEX OF SHEETS
SEE SHEET 2

Maryland Department of Transportation
State Highway Administration
Plans of Proposed Highway
S.H.A. CONTRACT NO. AX3785660R
POND RETROFIT, RESTORATION, REMEDIATION & LANDSCAPE IMPROVEMENT PROJECTS

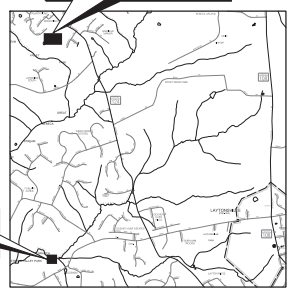
PROJECT LOCATION
AX3785660R
SC–19

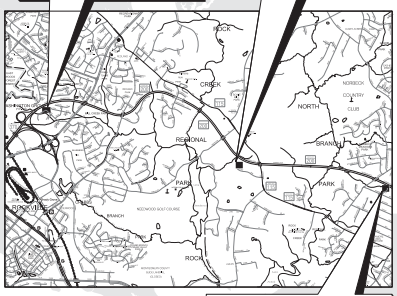
PROJECT LOCATION
AX3785660R
PB–1

PROJECT LOCATION
AX3785660R
RYDAL

PROJECT LOCATION
AX3785660R
AVERY PARK
POND OUTFALL BMP C2G

PROJECT LOCATION
AX3785660R
SC–2



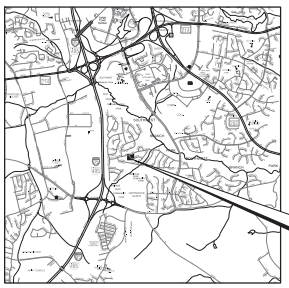


HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88

SCALE: 1" = 3000 '

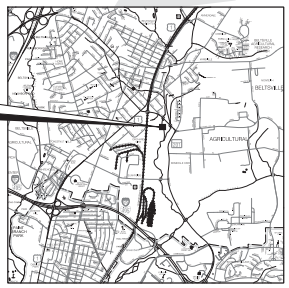
3000 0 3000 6000 feet

PROJECT LOCATION
AX3785660R
SYCAMORE LANE BMP D3E



PROJECT LOCATION
AX3785660R
IC–62

PROJECT LOCATION
AX3785660R
AIR QUALITY
MONITORING STATION



SUSTAINABLE SCIENCE LLC

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18919 EXPIRATION DATE: 11/9/2018.

ESD associates

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 17254 EXPIRATION DATE: 2/16/2018.

COASTAL RESOURCES INC.

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33330 EXPIRATION DATE: 6/29/2018.

*THIS PROFESSIONAL CERTIFICATION IS VALID ONLY FOR IC–62 LANDSCAPE PLANS, NOTES AND DETAILS (SHEETS 42–44 OF 44)

AASHTO DESIGN CRITERIA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2001 PUBLICATION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MUTCD

ALL WORK ON THIS PROJECT SHALL CONFORM TO: THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATIONS SPECIFICATIONS ENTITLED STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2008 REVISIONS THEREOF OR ADDITIONS THERETO THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK THE ADMINISTRATIONS BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES AND THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS, THEY ARE NOT OFFICIAL. FOR OFFICIAL PLAT RIGHT OF WAY AND EASEMENT INFORMATION SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY, NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

COMPLETENESS OF DOCUMENTS:

THE STATE HIGHWAY ADMINISTRATION WILL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS, INCLUDING ALL ADDENDA OBTAINED DIRECTLY FROM POSTING ON eMARYLAND MARKETPLACE BY THE ADMINISTRATION. FAILURE TO COMPLETE AND INCLUDE THE ADDENDUM RECEIPT VERIFICATION FORM MAY CAUSE THE BID TO BE IRREGULAR.

ADA COMPLIANCE

THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES FOR THE ELDERLY AND HANDICAPPED IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION

ENVIRONMENTAL INFORMATION

MDE # 15–SF–0109

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR CONTRACT NO. AX3785660R SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATIONS BEST MANAGEMENT PRACTICES (BMP) INSPECTION AND MAINTENANCE PROGRAM.

SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION.

STANDARD STABILIZATION NOTE :

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDER DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

OWNERS / DEVELOPERS CERTIFICATION :

I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON–SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

REVISIONS
NOTE:
See Sheet No. 2 for List of Revised Sheet Numbers

REVIEWED AND APPROVAL RECOMMENDED

APPROVAL RECOMMENDED

DRILL HOLES

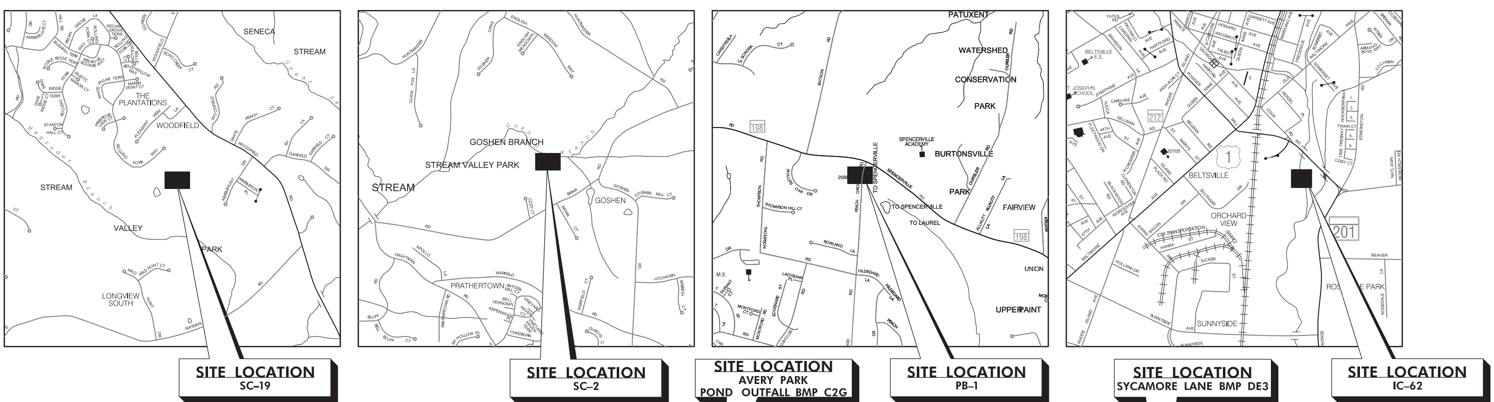
DRILL HOLES

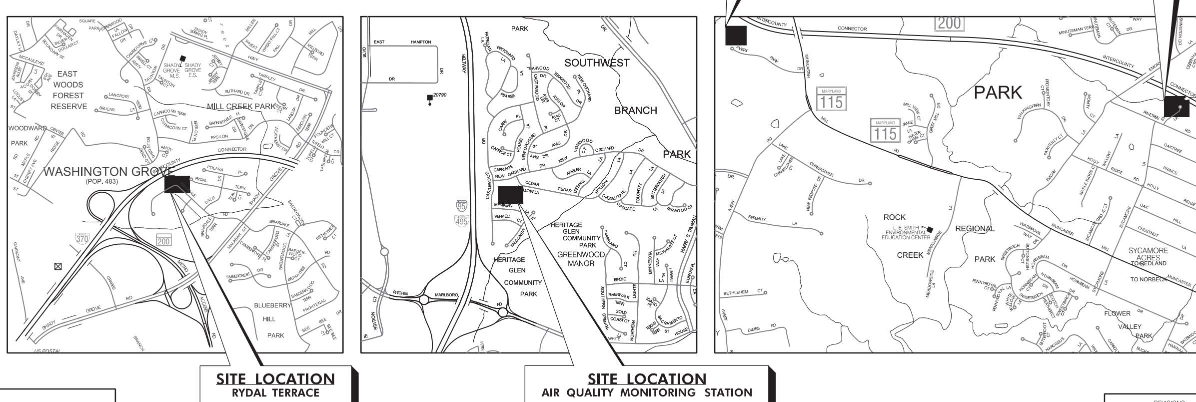
DRILL HOLES

BY: CALN -

SURVEY BOOK NO.

G:\Active\2013-08 BCS 2009-09A Eng n Env Services OPPE, McT\Task 5\MicroStation CADD files _NMP\Coastal
Thursday, December 22, 2016 AT 10:56 AM





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SHEET 1 TITLE SHEET
SHEET 2 LOCATION MAPS AND INDEX OF SHEETS
SHEET 3 GENERAL NOTES AND ABBREVIATIONS
SHEET 4 BMP C2-G TRAFFIC CONTROL PLAN
SHEET 5 BMP C2-G SITE AND E&SC PLAN
SHEET 6 BMP C2-G OUTFALL PROFILE AND DETAILS
SHEET 7 BMP C2-G OUTFALL DETAILS
SHEET 8-10 BMP C2-G DRAFT AS-BUILT PLANS
SHEET 11-12 BMP DE-3 SYCAMORE LANE AS-BUILT PLAN AND DETAIL
SHEET 13 AIR QUALITY MONITORING STATION SITE RESTORATION
SHEET 14 E&SC GENERAL NOTES
SHEET 15 GENERAL LANDSCAPE DETAILS FOR SC-2, SC-19, PB-1, AND IC-62
SHEET 16-17 SC-2 TRAFFIC CONTROL PLANS
SHEET 18-19 SC-2 WETLAND LAYOUT PLANS
SHEET 20 SC-2 WETLAND COORDINATE TABLES
SHEET 21 SC-2 WETLAND FOREST PLANTING SCHEDULES
SHEET 22 SC-19 TRAFFIC CONTROL PLAN
SHEET 23-24 SC-19 LANDSCAPE PLANS
SHEET 25 SC-19 LANDSCAPE NOTES AND DETAILS
SHEET 26 RYDAL TRAFFIC CONTROL AND LANDSCAPE PLAN
SHEET 27 PB-1 GEOMETRY, GRADING, E&SC AND LANDSCAPE LAYOUT PLAN
SHEET 28-30 PB-1 GEOMETRY PLANS
SHEET 31 PB-1 WETLAND COORDINATE TABLES
SHEET 32 PB-1 E&SC NOTES AND DETAILS
SHEET 33-35 PB-1 GRADING AND E&SC PLANS
SHEET 36-38 PB-1 LANDSCAPE PLANS
SHEET 39 PB-1 LANDSCAPE SCHEDULES
SHEET 40 IC-62 TRAFFIC CONTROL PLAN
SHEET 41 IC-62 LANDSCAPE NOTES AND DETAILS
SHEET 42-44 IC-62 LANDSCAPE PLANS

SCALE: 1" = 1000'
1000 0 1000 2000 feet

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

POND RETROFIT, RESTORATION, REMEDIATION AND LANDSCAPE IMPROVEMENT PROJECTS

REVISIONS

LOCATION MAPS AND INDEX OF SHEETS

SCALE AS SHOWN DATE 05/10/2016 CONTRACT NO. AX3785660R

DESIGNED BY CB
DRAWN BY CB
CHECKED BY MJF
F.A.P. NO.
COUNTY VARIES
LOGMILE

DRAWING NO. GN – 01 OF 03 SHEET NO. 2 OF 44

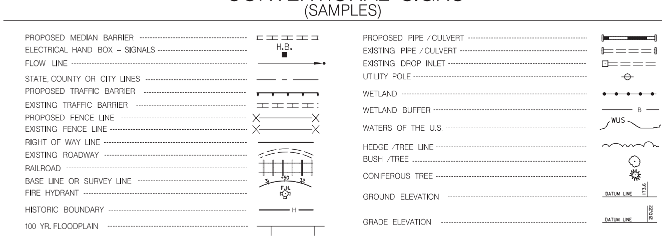
PLOTTED: Thursday, December 22, 2016 AT 11:01 AM
FILE: G:\Active\2013–08 BCS 2009–09A Eng n Env Services OPPE, McT\Task 5\MO–P\CADD files _NMP\Coastal Resources\Coastal Resources\pGN–N001_APPNMP.dgn

BY: caln –

ABBREVIATIONS

A.A.S.H.T.O. .... American Association of State Highway Transportation Officials
ADT .... Average Daily Traffic
AHD .... Ahead
APPROX. .... Approximate
B/L or B/L .... Baseline
BK .... Back / Book
BIT. .... Bituminous
B.C. .... Bituminous Concrete
B.M. .... Bench Mark
BOT. .... Bottom
C.C. .... Center of Curve
CATV .... Cable Television
C.B.R. .... California Bearing Ratio
C/L or C/L .... Centerline
CL. .... Class
CLF .... Chainlink Fence
CMP .... Corrugated Metal Pipe
C.O. .... Cleanout
COMB. .... Combination
CONC. .... Concrete
CONSTR. .... Construction
COR. .... Corner
CORR. .... Correction
DC .... Degree of Curve
D.H.V. .... Design Hourly Volume
D.I. .... Drop Inlet
DIA. .... Diameter
D.O. .... Double Opening
E .... East
E .... Electric
E .... External Distance
EA. .... Each
E.B. .... Eastbound
ELEV. .... Elevation
E.R.C.C.P. .... Elliptical Reinforced Cement Concrete Pipe
ES .... End Section
EX. or EXIST. .... Existing
FT. .... Feet
F or FL .... Flowline
F.B.D. .... Flat Bottom Ditch
F.H. .... Fire Hydrant
FWD. .... Forward
G .... Gas
G.V. .... Gas Valve
H.B. .... Handbox
H.D.P. .... High Density Polyetheylene
HDWL. .... Headwall
H.E.R.C.P. .... Horizontal Ellipitical Reinforced Concrete Pipe
HP .... High Point
IN .... Inch
I.S.T. .... Inlet Sediment Trap
INV. .... Invert
J.B. .... Junction Box
K .... K Inlet
L .... Length
L.F. .... Linear Feet
L.L. .... Liquid Limit
LP .... Low Point
L.P. .... Light Pole
LT. .... Left
MAC. .... Macadam
M.C. .... Moisture Content
MAX. .... Maximum
M.D.D. .... Maximum Dry Content
MOD. .... Modified
MIN. .... Minimum
N .... North
N.B. .... Northbound
N.E. .... Northeast
N.P. .... Non–Plastic
O.C. .... On Center
OHE .... Overhead Electric
O.M. .... Optimum Moisture
PAV'T. .... Pavement
P.C. .... Point of Curvature
P.C.C. .... Point of Compound Curvature
P/C .... Point of Crown
P/GE .... Profile Grade Elevation
P.G.E. .... Profile Ground Elevation
P.G.L. .... Profile Grade Line
P/GL .... Profile Ground Line
P/R .... Point of Rotation
P.I. .... Plasticity Index
P.I. .... Point of Intersection
P.O.C. .... Point On Curve
P.O.T. .... Point On Tangent
PROP. .... Proposed
P.R.C. .... Point of Reverse Curve
PT. .... Point
P.T. .... Point of Tangency
P.V.C. .... Point of Vertical Curve
PVC .... Polyvinyl Chloride
PVI .... Point of Vertical Intersection
PVRC .... Point of Vertical Reverse Curve
PVT .... Point of Vertical Tangency
R .... Radius
R.F. .... Rock Fragments
RT. .... Right
RW or R/W .... Right of Way
R.C.P. .... Reinforced Cement Pipe
R.C.C.P. .... Reinforced Cement Concrete Pipe
R.Q.D. .... Rock Quality Designation
R.M. .... Rootmat
S .... South
SAN. .... Sanitary Sewer
SB or S/B .... Southbound
S.D. .... Storm Drain
S.D.D. .... Surface Drain Ditch
S/E .... Super Elevation
SF .... Silt Fence
S.F. .... Square Feet
SHT. .... Sheet
S.P.P. .... Structural Plate Pipe
S.P.T. .... Standard Penetration Testing
SSD .... Stopping Sight Distance
SSF .... Super Silt Fence
STD. .... Standard
STA. .... Station
SO. .... Single Opening
S.Y. .... Square Yards
SWM .... Stormwater Management
T .... Tangent
T .... Telephone
T.C. .... Top of Cover
T.G. .... Top of Grate
T or TL .... Traverse Line
T.M. .... Top of Manhole
TRAV. .... Traverse
TS .... Temporary Swale
T.S. .... Top of Slab
T.S. .... Topsoil
TYP. .... Typical
U.D. .... Under Drain
U.G. .... Underground
U.P. .... Utility Pole
U.S.D.A. .... United States Department of Agriculture
VCL .... Vertical Clearance
V.C.L. .... Vertical Curve Length
W .... Water
W .... West
W.B. .... Westbound
WB .... Wetland Buffer
W.M. .... Water Meter
W.S. .... Wrapped Steel
WUS .... Waters of the United States
W.V. .... Water Valve

CONVENTIONAL SIGNS
(SAMPLES)



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

POND RETROFIT, RESTORATION, REMEDIATION AND LANDSCAPE IMPROVEMENT PROJECTS

REVISIONS

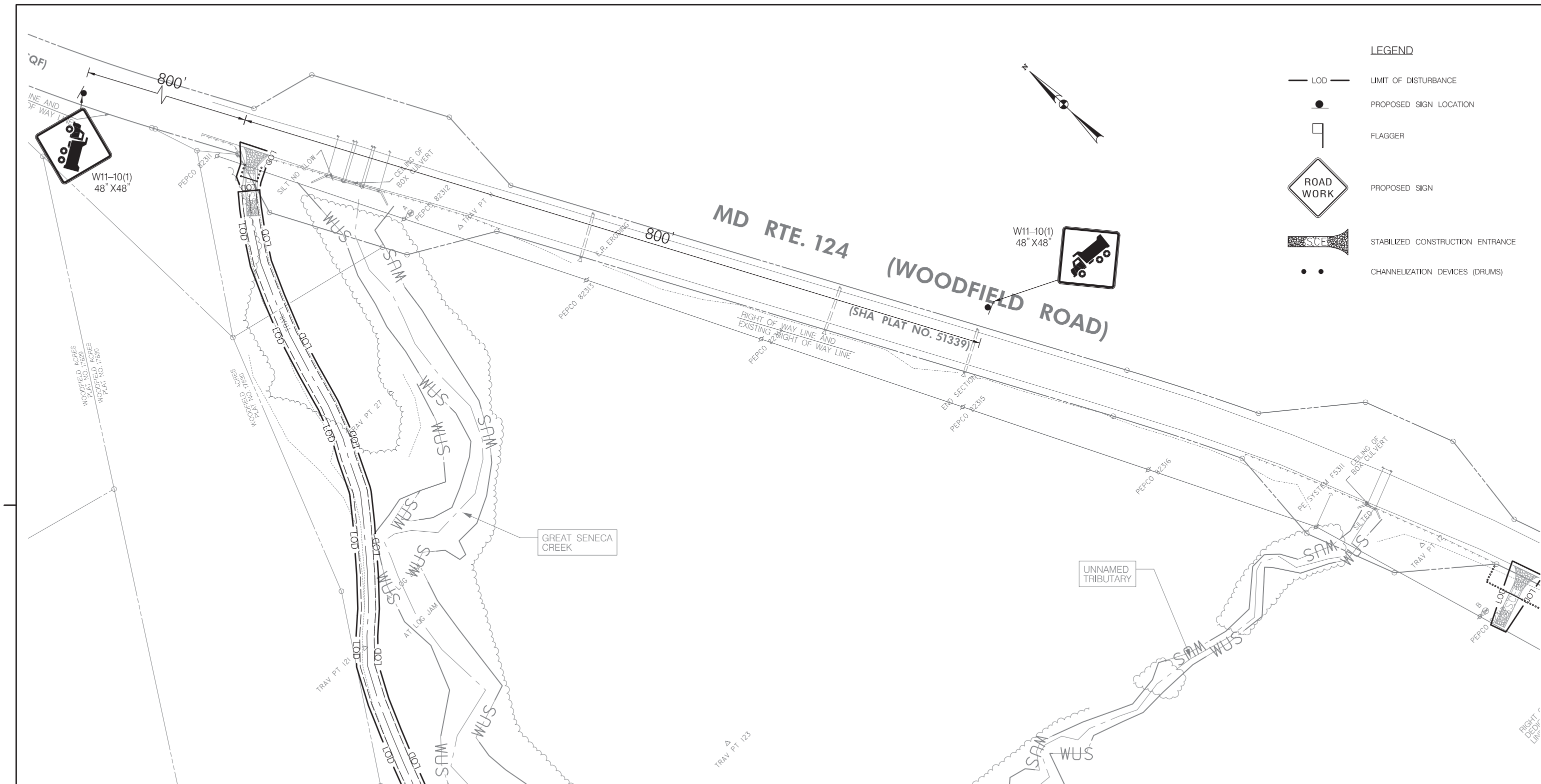
GENERAL NOTES AND ABBREVIATIONS

SCALE N/A   DATE 05/10/2016   CONTRACT NO. AX3785660R

DESIGNED BY CB   COUNTY VARIES
DRAWN BY CB   LOGMILE
CHECKED BY MJF
F.A.P. NO.

DRAWING NO. GN – 02 OF 03   SHEET NO. 3 OF 44

PLOTTED: Friday, December 09, 2016 AT 10:46 AM
FILE: G:\Active\2013–08 BCS 2009–09A Eng n Env Services OPPE, McT\Task 5\MO–P\CADD files _NMP\Coastal Resources\Coastal Resources\pGN–N002_APPNMP.dgn



GENERAL NOTES:

1. ALL STANDARD REGULATORY, WARNING AND CONSTRUCTION SIGNS USED FOR MAINTENANCE OF TRAFFIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES SECTIONS 104.00–06 & 07, MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE MARYLAND EDITION OF STANDARD HIGHWAY SIGNS, AND AS APPROVED BY THE ENGINEER.

2. ALL SIGNS SHALL CONFORM TO CURRENT MDSHA MATERIAL AND REFLECTIVITY REQUIREMENTS.

3. CONTRACTOR SHALL FIELD LOCATE ALL TEMPORARY SIGNS A MINIMUM OF 7 CALENDAR DAYS PRIOR TO INITIATING WORK. CONTRACTOR MUST RECEIVE APPROVAL OF THE SIGN LOCATIONS AND MOUNTINGS FROM THE DISTRICT PRIOR TO INSTALLATION.

4. CONSTRUCTION WARNING AND REGULATORY SIGNS SHALL BE COMPLETELY COVERED WITH A NONTRANSPARENT MATERIAL WHEN NOT IN USE.ALL SIGNS SHALL CONFORM TO CURRENT MDSHA MATERIAL AND REFLECTIVITY REQUIREMENTS. ALL SIGNS SHALL CONFORM TO CURRENT MDSHA MATERIAL AND REFLECTIVITY REQUIREMENTS.

40' 0 40' 80'
SCALE: 1" = 40'

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

POND RETROFIT, RESTORATION, REMEDIATION AND LANDSCAPE IMPROVEMENT PROJECTS

REVISIONS

SC–19 TRAFFIC CONTROL PLAN

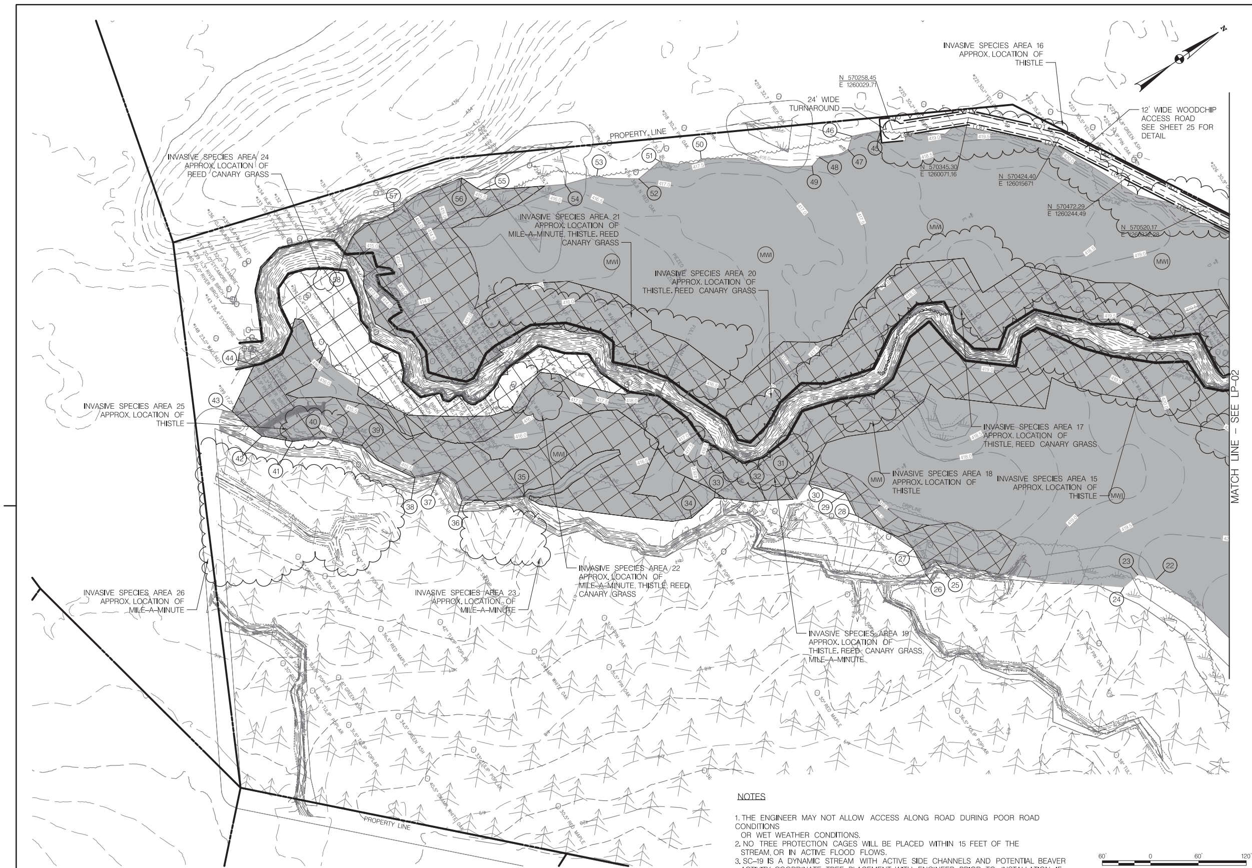
SCALE 1" = 40' DATE 05/10/2016 CONTRACT NO. AX3785660R

DESIGNED BY VER COUNTY VARIES
DRAWN BY VER LOGMILE
CHECKED BY KMP
F.A.P. NO.

DRAWING NO. TC – 01 OF 01 SHEET NO. 22 OF 44

PLOTTED: Thursday, December 22, 2016 AT 12:49 PM
FILE: G:\Active\2005-03 ICC GEC\ES CM CS\SC-B\CAD\2011\pMT-P001_SC-19.dgn

BY: caln –



WETLAND PLANTING

QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
600	Acer rubrum	Red Maple	5'	CONT.
350	Quercus bicolor	Swamp White Oak	5'	CONT.
630	Quercus palustris	Pin Oak	5'	CONT.
630	Platanus occidentalis	American Sycamore	5'	CONT.
350	Betula nigra	River birch	5'	CONT.
630	Nyssa sylvatica	Black Gum	5'	CONT.
350	Acer saccharinum	Silver Maple	5'	CONT.
336	Populus deltoids	Eastern Cottonwood	5'	CONT.
500	Salix nigra	Black Willow	4'	CONT.
355	Amelanchier arborea	Common Serviceberry	2'	CONT.
341	Carpinus caroliniana	American Hornbeam	2'	CONT.
600	Ilex verticilata	Winterberry Holly	2'	CONT.
200	Cephalanthus occidentalis	Buttonbush	2'	CONT.
400	Alnus serrulata	Hazel Alder	2'	CONT.
300	Viburnum prunifolium	Blackhaw Viburnum	2'	CONT.
498	Viburnum dentatum	Souther Arrowwood	2'	CONT.

SUPPLEMENTAL RIPARIAN PLANTING

QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
200	Acer rubrum	Red Maple	5'	CONT.
110	Quercus bicolor	Swamp White Oak	5'	CONT.
110	Quercus palustris	Pin Oak	5'	CONT.
110	Platanus occidentalis	American Sycamore	5'	CONT.
80	Betula nigra	River birch	5'	CONT.
110	Nyssa sylvatica	Black Gum	5'	CONT.
80	Acer saccharinum	Silver Maple	5'	CONT.
80	Populus deltoids	Eastern Cottonwood	5'	CONT.
80	Salix nigra	Black Willow	4'	CONT.
80	Amelanchier arborea	Common Serviceberry	2'	CONT.
63	Carpinus caroliniana	American Hornbeam	2'	CONT.
100	Ilex verticilata	Winterberry Holly	2'	CONT.
60	Cephalanthus occidentalis	Buttonbush	2'	CONT.
100	Alnus serrulata	Hazel Alder	2'	CONT.
70	Viburnum prunifolium	Blackhaw Viburnum	2'	CONT.
100	Viburnum dentatum	Souther Arrowwood	2'	CONT.

LIVE STAKES – 8,154 LINEAR FEET

QUANTITY	BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SIZE	ROOT	TYPE & SPACING
4,120	SALIX NIGRA	BLACK WILLOW	FACW+	4 FT	LIVE STAKE	3.5 FT O.C.
4,120	CORNUS AMOMUM	SILKY DOGWOOD	FACW	4 FT	LIVE STAKE	3.5 FT O.C.

TEMPORARY SEED		
LOCATION	QUANTITY (SY)	REMARKS
SITE	23,500	

MULCH		
LOCATION	QUANTITY (SY)	REMARKS
SITE	23,500	

ACCESS ROAD COMPOSTED WOOD CHIP MULCH		
LOCATION	QUANTITY (CY)	REMARKS
WESTERN ACCESS ROAD	772	12" DEEP

SHA PE TYPE III NON-WOVEN GEOTEXTILE		
LOCATION	QUANTITY (SY)	REMARKS
WESTERN ACCESS ROAD	88	

SITE INFORMATION *(NOT FOR BIDDING PURPOSES)

TOTAL AREA OF SITE	48.0	ACRES
AREA DISTURBED	0.74	ACRES
AREA TO BE ROOFED OR PAVED	0	ACRES
TOTAL CUT*	0	CU. YDS.
TOTAL FILL*	0	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION (IF KNOWN)	UNKNOWN	

NOTES

1. THE ENGINEER MAY NOT ALLOW ACCESS ALONG ROAD DURING POOR ROAD CONDITIONS OR WET WEATHER CONDITIONS.
2. NO TREE PROTECTION CAGES WILL BE PLACED WITHIN 15 FEET OF THE STREAM, OR IN ACTIVE FLOOD FLOWS.
3. SC-19 IS A DYNAMIC STREAM WITH ACTIVE SIDE CHANNELS AND POTENTIAL BEAVER ACTIVITY. COORDINATE TREE PLACEMENT WITH ENGINEER PRIOR TO INSTALLATION IF AREA IS TOO SATURATED.
4. PLANTS SHOULD BE EVENLY DISPERSED IN A RANDOM SPACING PATTERN THROUGHOUT THE SITE WITH NO LIKE TREE OR SHRUB PLANTED NEXT TO ONE ANOTHER. SHRUBS SHOULB BE PLANTED IN CLUSTERS.
5. REMOVAL OF TREES GREATER THAN 3" DBH WILL NEED TO BE APPROVED BY THE ENGINEER.
6. EXISTING GROUNDWATER MONITORING WELLS ARE SHOWN ON THE PLANS. IF DAMAGED DURING PLANTING OPERATIONS, THEY SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
7. ANY BOLLARD WITHIN 16 FEET OF ROADWAY SHALL BE BREAKAWAY.
8. STAY A MINIMUM OF 3 FEET OFF PROPERTY LINE FOR ACCESS ROAD.
9. SCE'S TO REMAIN IN PLACE POST CONSTRUCTION.

COASTAL RESOURCES INC.

LEGEND

- LOD — LIMIT OF DISTURBANCE
- (MW) EXISTING GROUNDWATER MONITORING WELL
- LIVE STAKE ESTABLISHMENT ZONE
- APPROX. LOCATION OF INVASIVE SPECIES
- EXISTING PALUSTRINE EMERGENT WETLAND
- EXISTING PALUSTRINE FORESTED WETLAND
- WETLAND PLANTING
- SUPPLEMENTAL RIPARIAN BUFFER PLANTING

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

POND RETROFIT, RESTORATION, REMEDIATION AND LANDSCAPE IMPROVEMENT PROJECTS

REVISIONS

SC-19 LANDSCAPE PLAN

SCALE: AS SHOWN	DATE: 05/10/2016	CONTRACT NO.: AX3785660R
DESIGNED BY: CB	COUNTY: VARIES	
DRAWN BY: CB	LOGMILE:	
CHECKED BY: MJF		
F.A.P. NO.:		
DRAWING NO. LD – 01 OF 02	SHEET NO. 23 OF 44	

PLOTTED: Thursday, December 22, 2016 AT 01:07 PM
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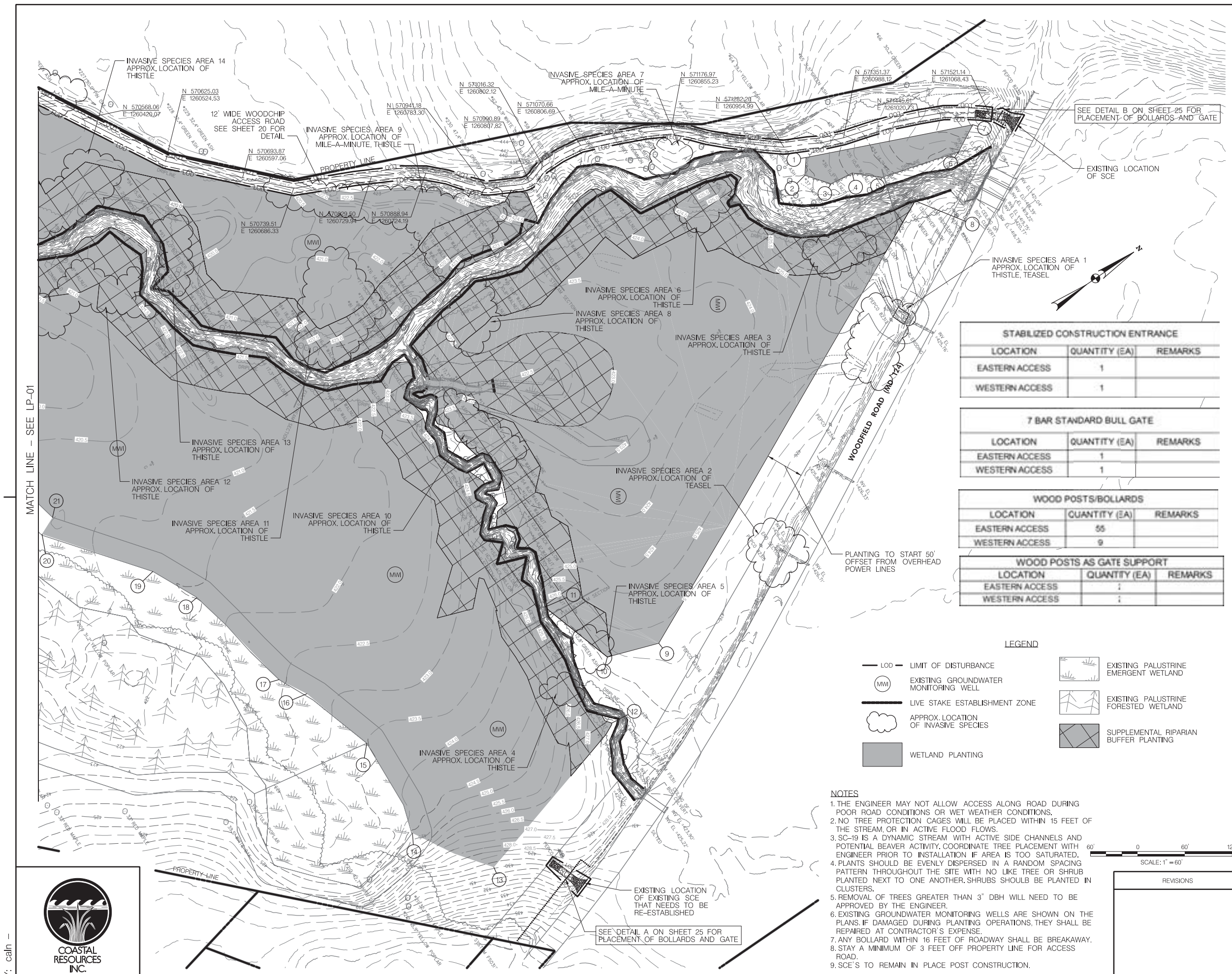
BY: caln –



STABILIZED CONSTRUCTION ENTRANCE		
LOCATION	QUANTITY (EA)	REMARKS
EASTERN ACCESS	1	
WESTERN ACCESS	1	

7 BAR STANDARD BULL GATE		
LOCATION	QUANTITY (EA)	REMARKS
EASTERN ACCESS	1	
WESTERN ACCESS	1	

WOOD POSTS/BOLLARDS		
LOCATION	QUANTITY (EA)	REMARKS
EASTERN ACCESS	55	
WESTERN ACCESS	9	

WOOD POSTS AS GATE SUPPORT		
LOCATION	QUANTITY (EA)	REMARKS
EASTERN ACCESS	[illegible]	
WESTERN ACCESS	[illegible]	

NOTES

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8. STAY A MINIMUM OF 3 FEET OFF PROPERTY LINE FOR ACCESS ROAD.
9. SCE'S TO REMAIN IN PLACE POST CONSTRUCTION.

COASTAL RESOURCES INC.

BY: caln –

WETLAND PLANTING		
POINT	NORTH	EAST
1	571297.87	1260981.84
2	571283.76	1260999.62
3	571305.10	1261027.48
4	571334.87	1261031.38
5	571363.29	1261057.35
6	571461.67	1261085.72
7	571495.99	1261067.53
8	571380.73	1261105.82
9	570793.60	1261384.51
10	570729.87	1261361.89
11	570700.44	1261264.52
12	570686.83	1261434.24
13	570459.56	1261500.31
14	570399.00	1261406.00
15	570416.00	1261279.00
16	570389.00	1261184.00
17	570370.00	1261149.00
18	570343.00	1261004.00
19	570316.00	1260945.00
20	570227.00	1260826.00
21	570250.00	1260816.00
22	570211.00	1260680.00
23	570195.69	1260662.12
24	570172.35	1260664.93
25	569997.07	1260504.82
26	569977.46	1260509.83
27	569982.94	1260476.01
28	569947.87	1260401.16
29	569952.02	1260370.39
30	569921.73	1260334.75
31	569898.59	1260342.53
32	569864.78	1260321.36
33	569814.33	1260282.24
34	569776.48	1260287.09
35	569620.45	1260146.68
36	569553.07	1260106.02
37	569550.89	1260062.19
38	569520.07	1260049.69
39	569487.58	1259978.46
40	569458.28	1259945.57
41	569420.00	1259925.36
42	569392.13	1259898.08
43	569379.25	1259851.40
44	569434.72	1259819.67
45	570245.34	1260022.42
46	570212.08	1260007.66
47	570198.59	1260018.52
48	570163.66	1260006.24
49	570150.09	1260009.97
50	570040.91	1259923.84
51	569996.38	1259897.05
52	569962.50	1259900.38
53	569921.46	1259867.46
54	569882.67	1259853.82
55	569792.00	1259800.00
56	569780.82	1259773.98
57	569687.52	1259760.75
58	569605.60	1259768.86

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

POND RETROFIT, RESTORATION, REMEDIATION AND LANDSCAPE IMPROVEMENT PROJECTS

REVISIONS

SC–19 LANDSCAPE PLAN

SCALE AS SHOWN DATE 05/10/2016 CONTRACT NO. AX3785660R

DESIGNED BY CB
DRAWN BY CB
CHECKED BY MJF
F.A.P. NO.
COUNTY VARIES
LOGMILE

DRAWING NO. LD – 02 OF 02
SHEET NO. 24 OF 44

PLOTTED: Thursday, December 22, 2016 AT 01:08 PM
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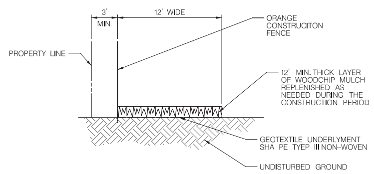
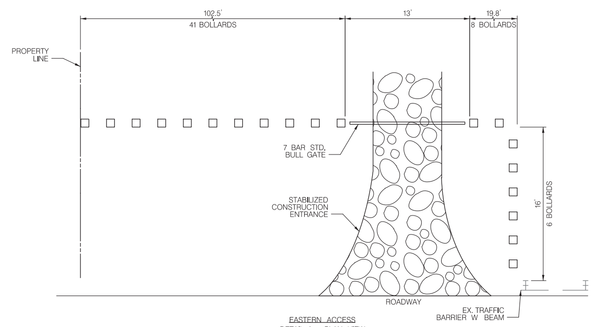
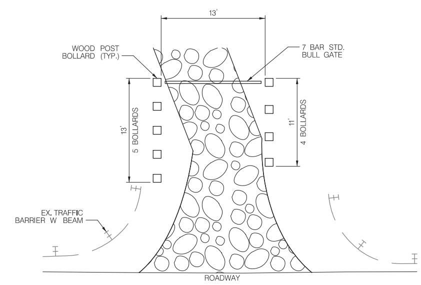


NOTES
1. ACCESS ROUTES TO BE VERIFIED BY THE ENGINEER AT PRE–CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRED REVIEW AND APPROVAL BY THE ENGINEER.
2. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.

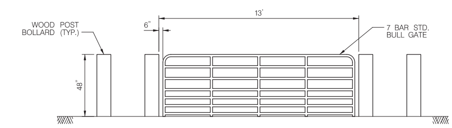
ACCESS ROAD



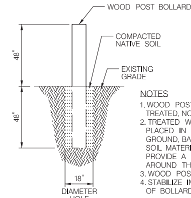
EASTERN ACCESS
DETAIL A – PLAN VIEW



WESTERN ACCESS
DETAIL B – PLAN VIEW

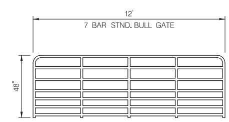


ELEVATION



NOTES
1. WOOD POST BOLLARDS ARE TO BE PRESSURED TREATED, NO. 1 GRADE SOUTHERN YELLOW PINE.
2. TREATED WOOD POST BOLLARD SHALL BE PLACED IN 18" DIAMETER PRE–DUG HOLE IN GROUND, BACKFILLED USING SUITABLE NATIVE SOIL MATERIAL, AND TAMPED THROUGHLY TO PROVIDE A RIGID SUBSURFACE CONDITION AROUND THE POST.
3. WOOD POST BOLLARDS TO BE PLACED 30" OC.
4. STABILIZE IMMEDIATELY FOLLOWING PLACEMENT OF BOLLARD.

SECTIONS



NOTES
1. 7 HORIZONTAL BARS.
2. 1 3/4" O.D. ROUND TUBULAR STEEL.
3. OUTSIDE RAIL 17 GAUGE.
4. FILLER BARS 19 GAUGE.

7 BAR STANDARD BULL GATE AND BOLLARD

TREE PROTECTION SLEEVE

LOCATION	QUANTITY (EA)	REMARKS
SITE	4606	LARGE TREES

TREE PROTECTION CAGE

LOCATION	QUANTITY (EA)	REMARKS
SITE	1269	SMALL TREES

ORANGE CONSTRUCTION FENCE

LOCATION	QUANTITY (LF)	REMARKS
WESTERN ACCESS ROAD ALONG PROPERTY LINE	1711	

COASTAL RESOURCES INC.

BY: caln –

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

POND RETROFIT, RESTORATION, REMEDIATION AND LANDSCAPE IMPROVEMENT PROJECTS

REVISIONS

SC–19 LANDSCAPE NOTES AND DETAILS

SCALE N/A DATE 05/10/2016 CONTRACT NO. AX3785660R

DESIGNED BY CB
DRAWN BY CB
CHECKED BY MJF
F.A.P. NO.
COUNTY VARIES
LOGMILE

DRAWING NO. LN – 01 OF 01
SHEET NO. 25 OF 44

SHEET REVISION DATE: NOVEMBER 24, 2010

PLOTTED: Friday, December 09, 2016 AT 11:37 AM
FILE: G:\Active\2005-03 ICC GEC\ES CM CS\SC-B\CAD\2011\pLS-N000_SC-19.dgn

APPENDIX B.2 – SC-19 2013 WETLAND CREATION SITE PLANS

DRILL HOLES

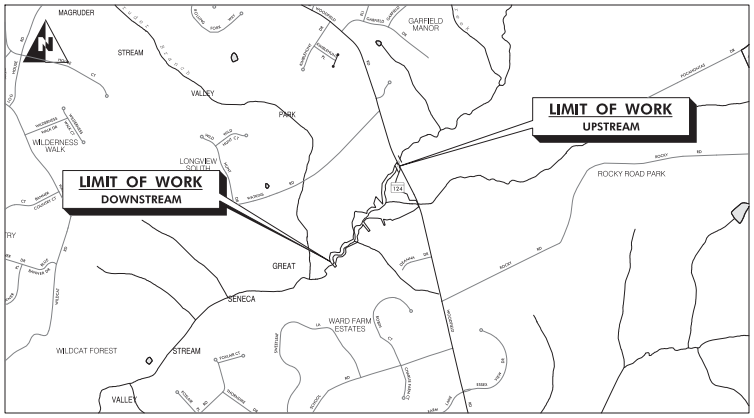
DRILL HOLES

DRILL HOLES

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

S.H.A. CONTRACT NO. – MOXXXXXXX
SC–19
STREAM MITIGATION AND BANKING
CONCEPT PLAN



MONTGOMERY COUNTY

LENGTH OF PROJECT: 4,052 FEET

HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAD 88

SCALE: 1" = 1000'

1000 0 1000 2000 feet

GEOMETRIC DESIGN CRITERIA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2011 PUBLICATION OF AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

ALL WORK ON THIS PROJECT SHALL CONFORM TO THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA) SPECIFICATIONS ENTITLED **"STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS"** REVISIONS THEREOF OR ADDITIONS THERETO THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK THE ADMINISTRATION'S **"BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES"** AND THE LATEST ADOPTED MUTCD.

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS, THEY ARE NOT OFFICIAL. FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

ADA COMPLIANCE

THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES TO ACCOMODATE PERSONS WITH DISABILITIES IN COMPLIANCE WITH STATE AND FEDERAL REQUIREMENTS.

ENVIRONMENTAL INFORMATION

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR THIS CONTRACT SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE MDOT SHA BEST MANAGEMENT PRACTICES (BMP) INSPECTION AND REMEDIATION PROGRAM.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNERS / DEVELOPERS CERTIFICATION:

I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY MDE COMPLIANCE INSPECTORS.

EXISTING STRUCTURES PLANS

FOR THE CONVENIENCE AND INFORMATION OF BIDDERS, PRINTS OF PLANS OF EXISTING PERTINENT STRUCTURE(S) ARE INCLUDED WITH THIS CONTRACT. NO RESPONSIBILITY FOR THEIR ACCURACY OR COMPLETENESS IS ASSUMED BY THE MDOT SHA. DIMENSIONS, DETAILS, ETC., AS SHOWN THEREON MAY NOT BE AS BUILT.

STORMWATER AND SEDIMENT CONTROL FINAL APPROVAL	MODIFICATIONS
APPROVED _____ DATE _____	
DIVISION CHIEF, PLAN REVIEW DIVISION	
PRD NO:_____ EXPIRATION DATE: _____	

SURVEY BOOK NUMBERS	RIGHT OF WAY PLAT NUMBERS	REVISIONS NOTE: SEE SHEET NO.2 FOR LIST OF REVISED SHEET NUMBERS
–	–	
–	–	

APPROVED _____ DATE _____
CHIEF, WATER PROGRAM DIVISION

APPROVED _____ DATE _____
DIRECTOR, OFFICE OF ENVIRONMENTAL DESIGN

APPROVED _____ DATE _____
DEPUTY ADMINISTRATOR / CHIEF ENGINEER
FOR PLANNING, ENGINEERING, REAL ESTATE AND ENVIRONMENT

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SHEET NOS. AND OTHER CLARIFICATIONS

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MD LICENSE NO. 25402 EXPIRATION DATE: 7/17/20

BY: rgoodman

STRUCTURE INVENTORY NO.:

P:\2012\12003300\Drawings\20-EWP\.pGN-T000_SC19.dgn
Monday, November 19, 2018 AT 08:24 PM

CONTRACT NO.: –

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DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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REVISIONS

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SCALE NTS ADVERTISED DATE – CONTRACT NO. –

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COUNTY MONTGOMERY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. **INDX-01** OF **01** SHEET NO. 2 OF 34

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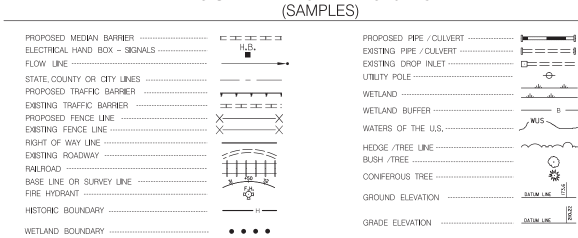
ABBREVIATIONS

Abbreviation	Meaning
AASHTO	American Association of State Highway Transportation Officials
ADT	Average Daily Traffic
AHD	Ahead
APPROX.	Approximate
℄ or B/L	Baseline
BK	Back / Book
BIT.	Bituminous
B.C.	Bituminous Concrete
B.M.	Bench Mark
BOT.	Bottom
C.C.	Center of Curve
CAP	Corrugated Aluminum Pipe
CAPA	Corrugated Aluminum Pipe Arch
CATV	Cable Television
C.B.R.	California Bearing Ratio
℄ or C/L	Centerline
CL.	Class
CLF	Chainlink Fence
CMP	Corrugated Metal Pipe
C.O.	Cleanout
COMB.	Combination
CONC.	Concrete
CONSTR.	Construction
COR.	Corner
CORR.	Correction
CPP–S	Corrugated Polyethylene Pipe – Type 'S'
CSP	Corrugated Steel Pipe – Aluminized Type 2
CSPA	Corrugated Steel Pipe Arch – Aluminized Type 2
DC	Degree of Curve
D.H.V.	Design Hourly Volume
D.I.	Drop Inlet
DIA.	Diameter
D.O.	Double Opening
E	East
E	Electric
E	External Distance
EA	Each
EB	Eastbound
ELEV	Elevation
ES	End Section
EX or EXIST	Existing
FT	Feet
F or FL	Flowline
F.B.D.	Flat Bottom Ditch
F.H.	Fire Hydrant
FWD.	Forward
G	Gas
G.V.	Gas Valve
H.B.	Handbox
HDPE	High Density Polyetheylene
HDWL.	Headwall
HERCP	Horizontal Ellipitical Reinforced Concrete Pipe
HP	High Point
IN	Inch
I.S.T.	Inlet Sediment Trap
INV.	Invert
J.B.	Junction Box
K	K Inlet
L	Length
LF	Linear Feet
L.L.	Liquid Limit
LP	Low Point
L.P.	Light Pole
LT.	Left
MAC.	Macadam
M.C.	Moisture Content
MAX.	Maximum
M.D.D.	Maximum Dry Content
MOD.	Modified
MIN.	Minimum
N	North
NB	Northbound
NE	Northeast
N.P.	Non–Plastic
O.C.	On Center
OHE	Overhead Electric
O.M.	Optimum Moisture
PAV'T.	Pavement
PC	Point of Curvature
PCC	Point of Compound Curvature
P/C	Point of Crown
P/GE	Profile Grade Elevation
P.G.E.	Profile Ground Elevation
P.G.L.	Profile Grade Line
P/GL	Profile Ground Line
P/R	Point of Rotation
P.I.	Plasticity Index
PI	Point of Intersection
POC	Point On Curve
POT	Point On Tangent
PPWP	Polyvinyl Chloride Profile Wall Pipe
PROP	Proposed
PRC	Point of Reverse Curve
PT	Point
PT	Point of Tangency
PVC	Point of Vertical Curve
PVC	Polyvinyl Chloride
PVI	Point of Vertical Intersection
PVRC	Point of Vertical Reverse Curve
PVT	Point of Vertical Tangency
R	Radius
R.F.	Rock Fragments
RT	Right
RW or R/W	Right of Way
RCP	Reinforced Concrete Pipe
RCPP	Reinforced Concrete Pressure Pipe
R.Q.D.	Rock Quality Designation
R.M.	Rootmat
S	South
SAN.	Sanitary Sewer
SB or S/B	Southbound
S.D.	Storm Drain
S.D.D.	Surface Drain Ditch
S/E	Super Elevation
SF	Silt Fence
SF	Square Feet
SHT.	Sheet
SPP	Structural Steel Plate Pipe
SPPA	Structural Steel Plate Pipe Arch
S.P.T.	Standard Penetration Testing
SRP	Steel Spiral Rib Pipe – Aluminized Type 2
SRPA	Steel Spiral Rib Pipe Arch – Aluminized Type 2
SSD	Stopping Sight Distance
SSF	Super Silt Fence
STD.	Standard
STA.	Station
SO.	Single Opening
SY	Square Yards
SWM	Stormwater Management
T	Tangent
T	Telephone
T.C.	Top of Cover
T.G.	Top of Grate
T or TL	Traverse Line
T.M.	Top of Manhole
TRAV.	Traverse
TS	Temporary Swale
T.S.	Top of Slab
T.S.	Topsoil
TYP.	Typical
U.D.	Under Drain
U.G.	Underground
U.P.	Utility Pole
USDA	United States Department of Agriculture
VCL	Vertical Clearance
V.C.L.	Vertical Curve Length
W	Water
W	West
WB	Westbound
WB	Wetland Buffer
W.M.	Water Meter
W.S.	Wrapped Steel
WUS	Waters of the United States
W.V.	Water Valve

CONVENTIONAL SIGNS
(SAMPLES)



GENERAL NOTES

1. THE LOCATION OF THE UNDERGROUND AND SURFACE UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1–800–257–7777, 48 HOURS PRIOR TO EXCAVATION FOR MARKING AND LOCATION OF UTILITIES.

2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. ANY CONFLICTS CONCERNING THE CONSTRUCTION AROUND EXISTING OBSTRUCTIONS PER THESE PLANS SHALL BE RESOLVED BETWEEN THE CONTRACTOR AND THE ENGINEER.

3. THE CONTRACTOR AND OTHERS SHALL PERFORM ALL WORK IN A MANNER THAT WILL ENSURE THE LEAST PRACTICAL OBSTRUCTION TO TRAFFIC, PEDESTRIANS, BUSINESSES, RESIDENTS, AND BE CONSISTENT WITH SAFETY.

4. ALL INVERT ELEVATIONS ARE APPROXIMATE AND MAY BE MODIFIED TO MEET CONDITIONS ENCOUNTERED DURING INSTALLATION OF DRAINAGE STRUCTURES, EXCEPT STORMWATER MANAGEMENT FACILITIES.

5. THE CONTRACTOR SHALL VERIFY ALL PIPE LENGTHS AND SIZES IN THE FIELD BEFORE ORDERING ANY DRAINAGE STRUCTURES

6. ALL BENCHMARKS AND COORDINATES SHOWN ON THE CONTRACT PLANS ARE "NAD83–91" AND "NAVD 88".

7. ALL EXISTING UTILITY FRAMES AND GRATES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE.

8. THE CONTRACTOR WILL NOTIFY PROPERTY OWNERS 72 HOURS PRIOR TO IMPACTS OR OBSTRUCTIONS OF DRIVEWAY ENTRANCES.

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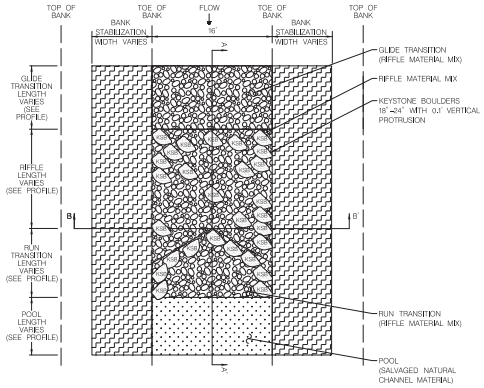
NOTES AND ABBREVIATIONS SHEET

SCALE NTS ADVERTISED DATE – CONTRACT NO. –

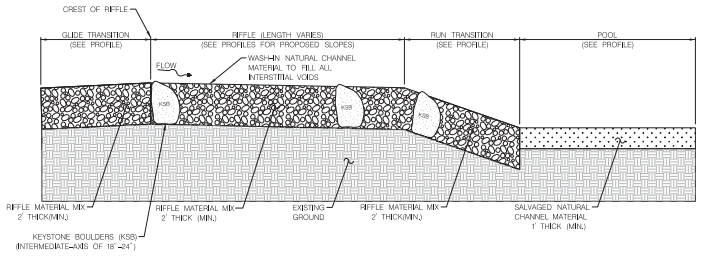
DESIGNED BY	MH	COUNTY	MONTGOMERY
DRAWN BY	RG	LOGMILE	
CHECKED BY	BN	HORIZONTAL SCALE	
MDE/PRD	XX–PR–XXXX	VERTICAL SCALE	

DRAWING NO. **AB-01** OF **01** SHEET NO. 3 OF 34



RIFFLE – PLAN VIEW – OPTION 01

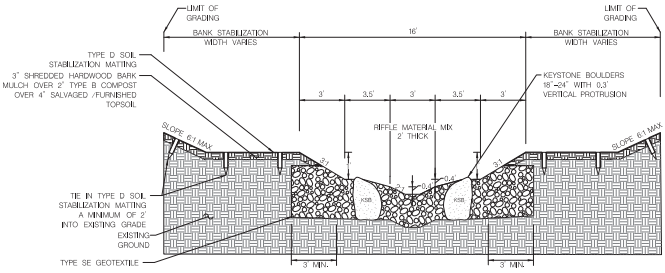
NOT TO SCALE



RIFFLE – SECTION VIEW A–A' – OPTION 01

NOT TO SCALE

NOTES:
1. PLACE KEYSTONE BOULDERS AT DIRECTION OF ENGINEER
2. WASH NATURAL CHANNEL MATERIAL INTO RIFFLE CHANNEL BED MATERIAL MIX TO FILL ALL VOID SPACES.



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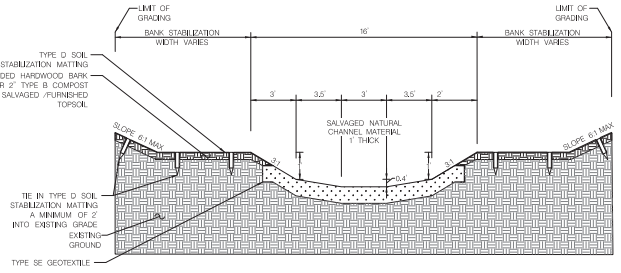

TYPICAL POOL SECTION – OPTION 01

NOT TO SCALE

RIFFLE MATERIAL MIX	
CLASS II	TBD
CLASS I	TBD
CLASS I	TBD

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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STREAM RESTORATION DETAILS–OPTION 01

SCALE: NTS ADVERTISED DATE: – CONTRACT NO. –

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DRAWN BY: PG
CHECKED BY: RN
MDE/PRD: XX-FR-XXXX

COUNTY: MONTGOMERY
LOGMILE:
HORIZONTAL SCALE:
VERTICAL SCALE:

DRAWING NO. DE-01 OF 19 SHEET NO. 4 OF 34

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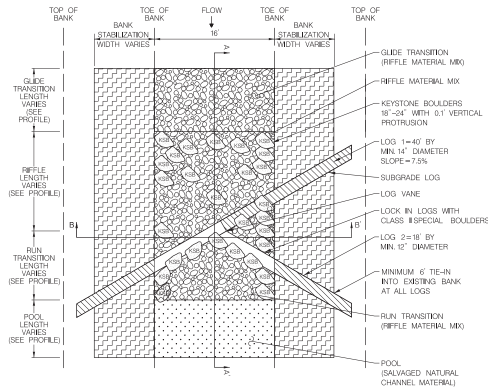
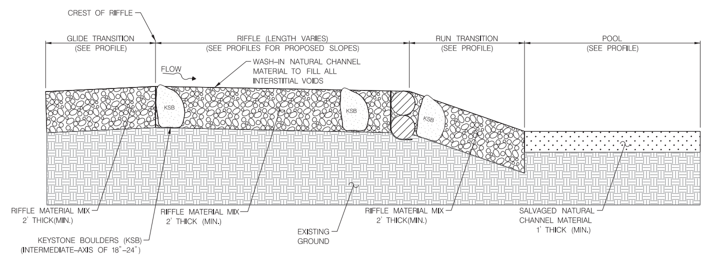


RIFFLE WITH LOG VANE – PLAN VIEW – OPTION 01

NOT TO SCALE

NOTES:
1. PLACE KEYSTONE BOULDERS AT DIRECTION OF ENGINEER
2. WASH NATURAL CHANNEL MATERIAL INTO RIFFLE CHANNEL BED MATERIAL MIX TO FILL ALL VOID SPACES.
3. FOOTER LOGS ARE THE SAME SIZE AS TOP LOGS.



RIFFLE WITH LOG VANE – SECTION VIEW A–A' – OPTION 01

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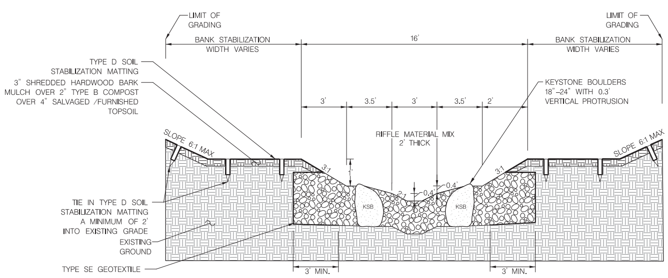

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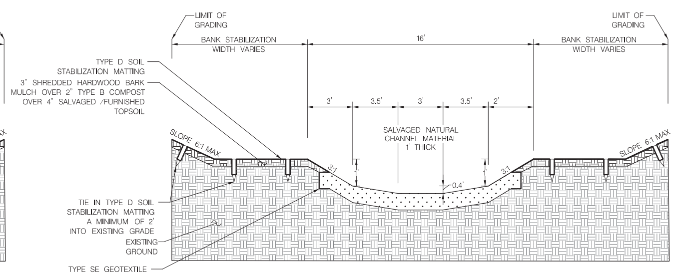

TYPICAL POOL SECTION – OPTION 01

NOT TO SCALE

RIFFLE MATERIAL MIX	
CLASS 0	TBD
CLASS I	TBD
CLASS II	TBD

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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STREAM RESTORATION DETAILS–OPTION 01

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MDE/PRD XX–PR–XXXX

COUNTY MONTGOMERY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. DE–02 OF 19 SHEET NO. 5 OF 53

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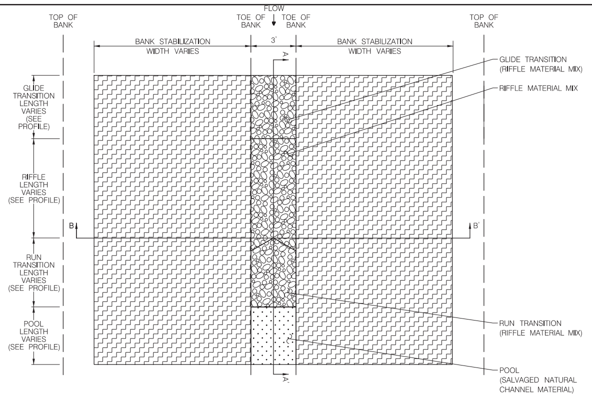
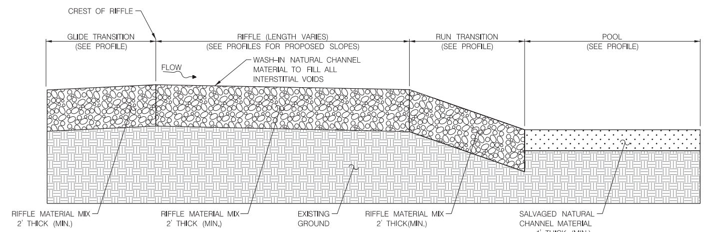


TRIBUTARY RIFFLE – PLAN VIEW – OPTION 01

NOT TO SCALE

NOTES:
1. WASH NATURAL CHANNEL MATERIAL INTO RIFFLE CHANNEL BED MATERIAL MIX TO FILL ALL VOID SPACES.



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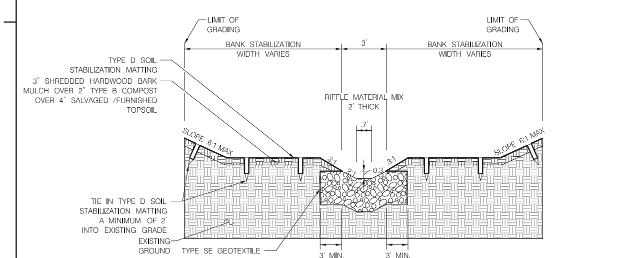

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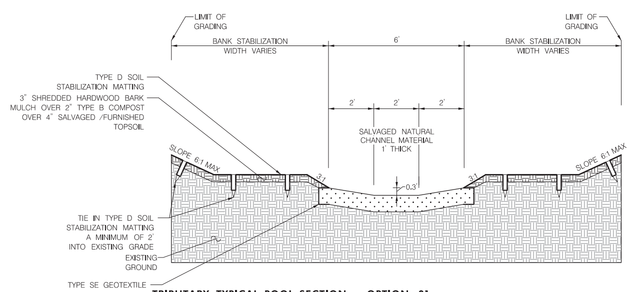

TRIBUTARY TYPICAL POOL SECTION – OPTION 01

NOT TO SCALE

RIFFLE MATERIAL MIX	
CLASS 0	TBD
CLASS I	TBD
CLASS II	TBD

DATUM: NAD 83/91 Horizontal
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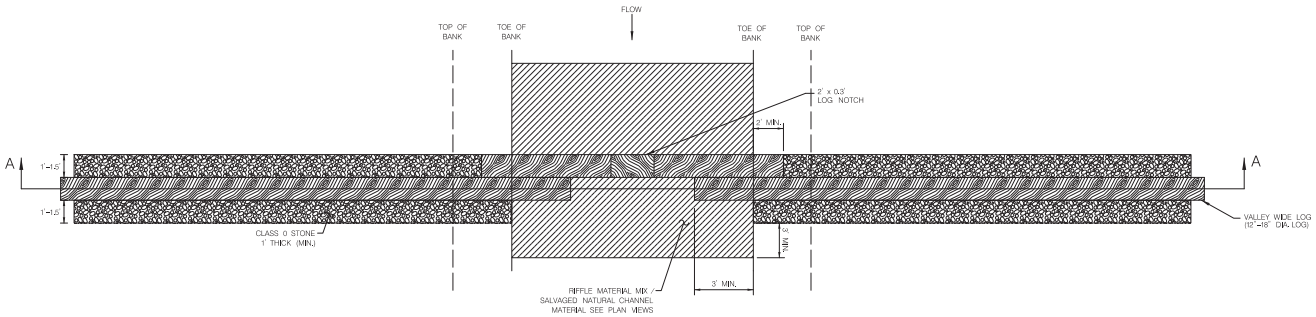
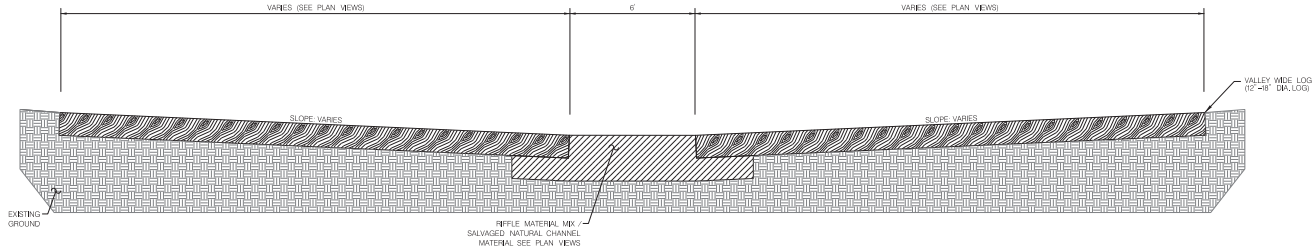


VALLEY WIDE LOG – PLAN VIEW – OPTION 01

NOT TO SCALE

NOTES:
1. SEE LOG SILL DETAIL DWG. DE-06.
2. INSTALL VALLEY WIDE LOGS AT DIRECTION OF ENGINEER.
3. MULTIPLE LOGS MAY BE PLACED END TO END WITH A MINIMUM OVERLAP OF 3' IN ORDER TO MEET LENGTHS OF VALLEY WIDE LOGS.



VALLEY WIDE LOG – SECTION VIEW A-A – OPTION 01

NOT TO SCALE

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STREAM RESTORATION DETAILS–OPTION 01

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MDE/PRD: XX-FR-XXXX

COUNTY: MONTGOMERY
LOGMILE:
HORIZONTAL SCALE:
VERTICAL SCALE:

DRAWING NO. DE-04 OF 19 SHEET NO. 7 OF 53

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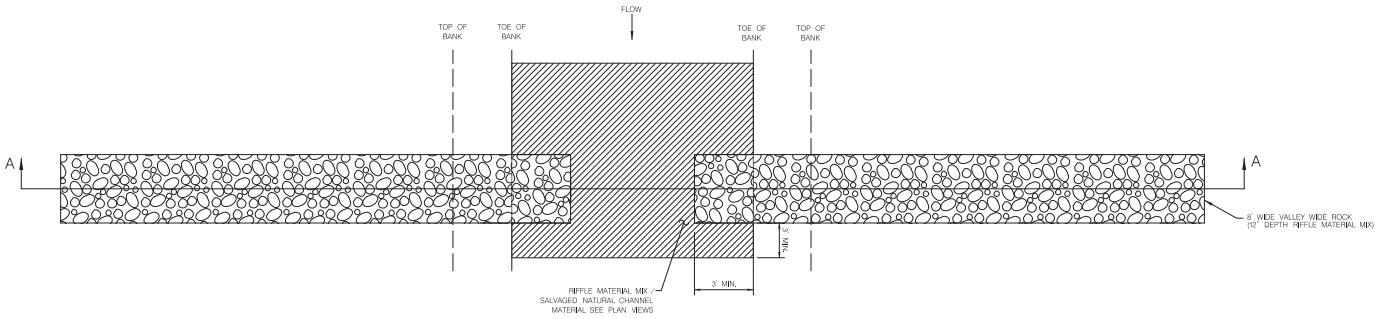
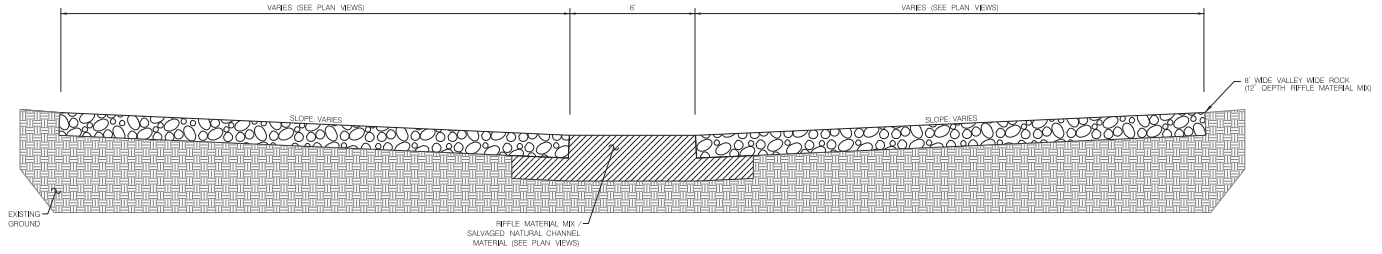


VALLEY WIDE ROCK – PLAN VIEW – OPTION 01

NOT TO SCALE

NOTES:
1. SEE LOG SILL DETAIL DWG. DE-06.
2. INSTALL VALLEY WIDE LOGS AT DIRECTION OF ENGINEER.
3. MULTIPLE LOGS MAY BE PLACED END TO END WITH A MINIMUM OVERLAP OF 3' IN ORDER TO MEET LENGTHS OF VALLEY WIDE LOGS.



VALLEY WIDE ROCK – SECTION VIEW A–A – OPTION 01

NOT TO SCALE

DATUM: NAD 83/91 Horizontal
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STREAM RESTORATION DETAILS–OPTION 01

SCALE: NTS ADVERTISED DATE: – CONTRACT NO. –

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CHECKED BY: RN
MDE/PRD: XX-YR-XXXX

COUNTY: MONTGOMERY
LOGMILE:
HORIZONTAL SCALE:
VERTICAL SCALE:

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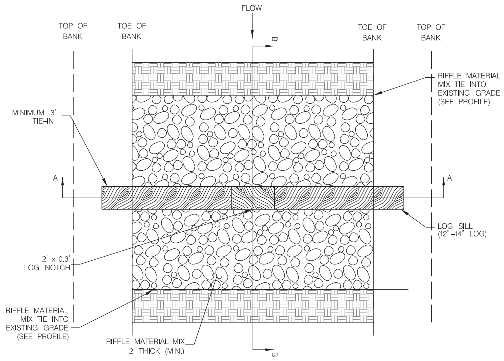
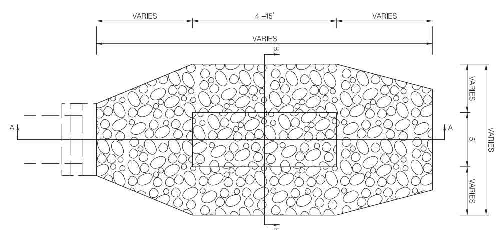


LOG SILL - PLAN VIEW - OPTION 01
NOT TO SCALE

NOTES:
1. WASH SALVAGED SITE MATERIAL INTO RIFFLE MATERIAL MIX TO FILL ALL VOID SPACES.
2. SALVAGED SITE MATERIAL USED FOR WASHING IN RIFFLE MATERIAL MIX SHALL BE SELECTED, APPROVED, AND PLACED AT THE DIRECTION OF THE ENGINEER.



PLUNGE POOL - PLANVIEW - OPTION 01
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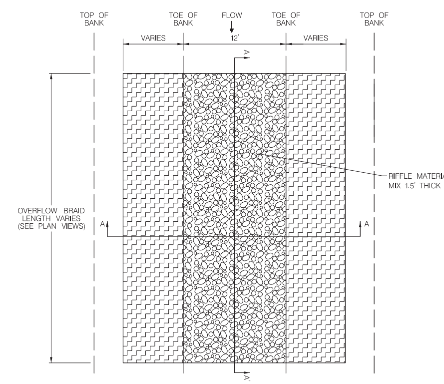

OVERFLOW BRAID - PLAN VIEW - OPTION 01
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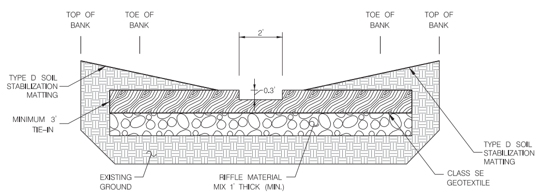
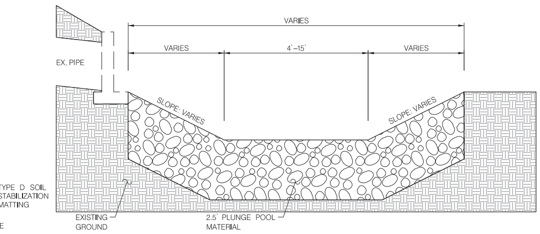
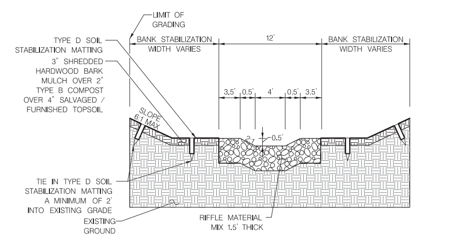


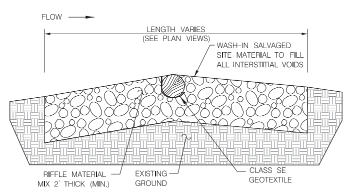
LOG SILL - SECTION VIEW A-A - OPTION 01
NOT TO SCALE



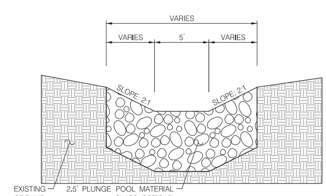
PLUNGE POOL - SECTION A-A - OPTION 01
NOT TO SCALE



OVERFLOW BRAID - SECTION VIEW A-A - OPTION 01
NOT TO SCALE



LOG SILL - SECTION VIEW B-B - OPTION 01
NOT TO SCALE



PLUNGE POOL - SECTION B-B - OPTION 01
NOT TO SCALE

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

RIFFLE MATERIAL MIX	
CLASS 0	TBD
CLASS I	TBD
CLASS II	TBD

PLUNGE POOL MATERIAL MIX	
CLASS 0	TBD
CLASS I	TBD
CLASS II	TBD

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WATER PROGRAMS DIVISION

SC-19
STREAM MITIGATION
AND BANKING

REVISIONS

STREAM RESTORATION DETAILS-OPTION 01

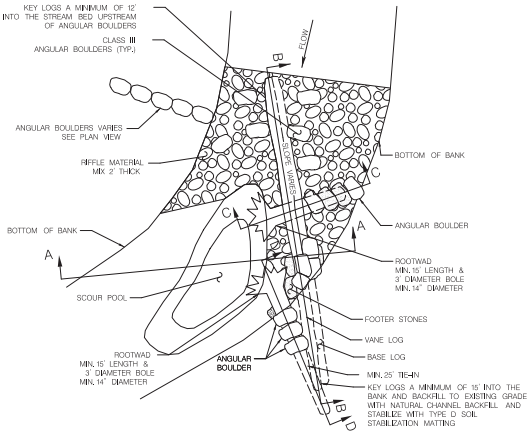
SCALE NTS ADVERTISED DATE – CONTRACT NO. –

DESIGNED BY	MH	COUNTY	MONTGOMERY
DRAWN BY	RG	LOGMILE	
CHECKED BY	BN	HORIZONTAL SCALE	
MDE/PRD	XX-PR-XXXX	VERTICAL SCALE	

DRAWING NO. DE-06 OF 19 SHEET NO. 9 OF 53

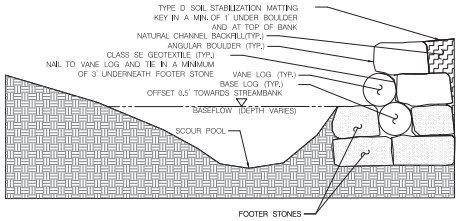
BY: rgoodman –

PLOTTED: Wednesday, November 14, 2018 AT 03:45 PM



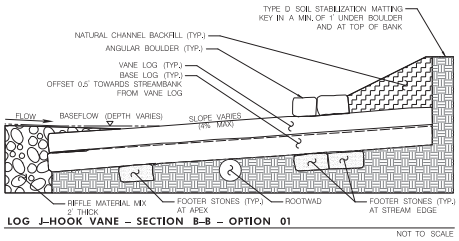
LOG J-HOOK VANE – PLANVIEW – OPTION 01

NOT TO SCALE



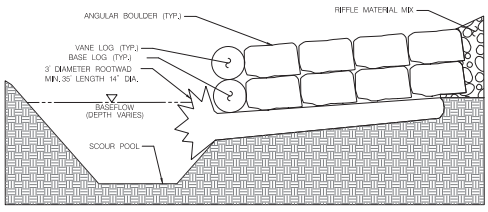
LOG J-HOOK VANE – SECTION A–A – OPTION 01

NOT TO SCALE



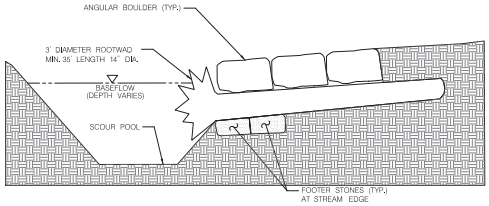
LOG J-HOOK VANE – SECTION B–B – OPTION 01

NOT TO SCALE



LOG J-HOOK VANE – SECTION C–C – OPTION 01

NOT TO SCALE



LOG J-HOOK VANE – SECTION D–D – OPTION 01

NOT TO SCALE

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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SC-19
STREAM MITIGATION AND BANKING

REVISIONS

STREAM RESTORATION DETAILS–OPTION 01

SCALE NTS ADVERTISED DATE – CONTRACT NO. –

DESIGNED BY MH
DRAWN BY PG
CHECKED BY RN
MDE/PRD XX-FR-XXXX

COUNTY MONTGOMERY
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. DE-07 OF 19 SHEET NO. 10 OF 53

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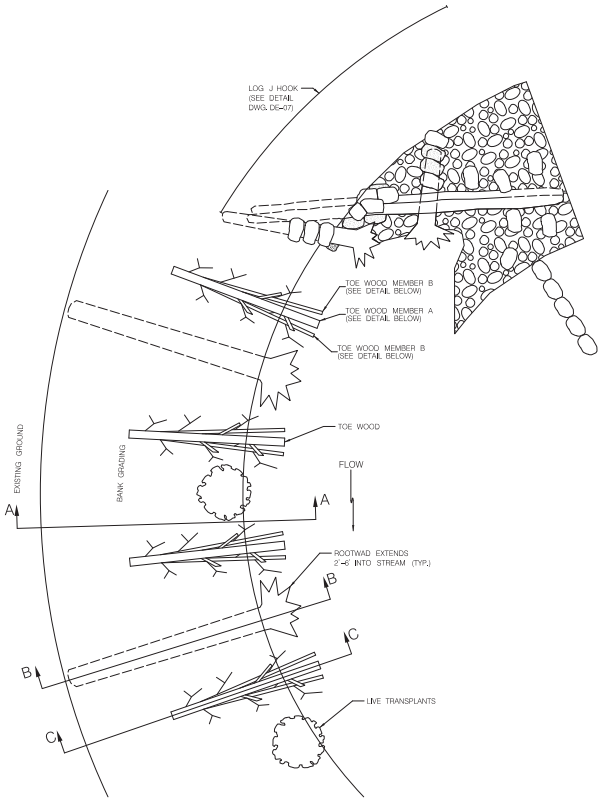
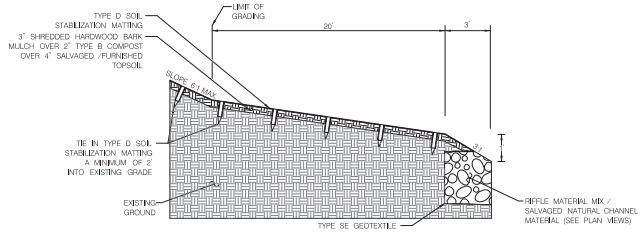


BANK TREATMENT – PLAN VIEW – OPTION 01

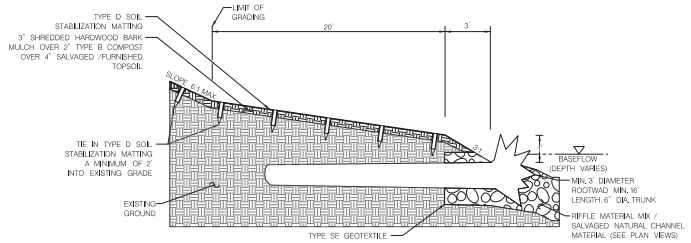
NOT TO SCALE

NOTES:
1. CONSIDER ROOTWADS TO BE MINIMUM 3' DIAMETER WELL BRANCHED INTACT AND APPROVED BY ENGINEER OR APPROVED STREAM RESTORATION SPECIALIST.
2. SEE LOG J HOOK DETAIL ON DWG. DE-07.
3. CONTRACTOR TO PLACE TOE WOOD MEMBERS AT DIRECTION OF ENGINEER.



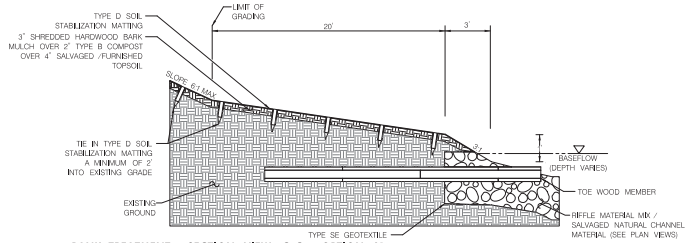
BANK TREATMENT – SECTION VIEW A–A – OPTION 01

NOT TO SCALE



BANK TREATMENT – SECTION VIEW B–B – OPTION 01

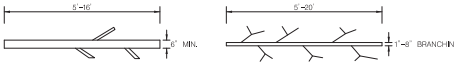
NOT TO SCALE



BANK TREATMENT – SECTION VIEW C–C – OPTION 01

NOTE:
1. MULTIPLE TOE WOOD MEMBERS MAY BE PLACED END TO END WITH A MINIMUM OVERLAP OF 2' IN ORDER TO MEET LENGTHS OF TOE WOOD.

NOT TO SCALE



MEMBER A MEMBER B

TOE WOOD DETAIL – OPTION 01

NOT TO SCALE

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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PLOTTED: Wednesday, November 14, 2018 AT 04:09 PM

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WATER PROGRAMS DIVISION

SC-19
STREAM MITIGATION
AND BANKING

STREAM RESTORATION DETAILS–OPTION 01

SCALE:	NTS	ADVERTISED DATE:	–
CONTRACT NO.:	–		
DESIGNED BY:	MH	COUNTY:	MONTGOMERY
DRAWN BY:	PG	LOGMILE:	
CHECKED BY:	RN	HORIZONTAL SCALE:	
MDE/PRD:	XX-FR-XXXX	VERTICAL SCALE:	
DRAWING NO.:	DE-08 OF 19	SHEET NO.:	11 OF 53

PLAN SHEET
SCALE: 1" = 100'

100' 0 100' 200'
SCALE: 1" = 100'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	-	
	SUPERELEVATION SHEETS	-	
	PIPE & DRAINAGE SCHEDULE	-	
	GEOMETRIC LAYOUT SHEETS	-	
	ROADWAY PLAN SHEETS	-	
	ROADWAY PROFILE SHEETS	-	
	TRAFFIC CONTROL SHEETS	-	
	EROSION & SEDIMENT CONTROL	-	
	SIGNING & MARKING PLANS	-	
	LANDSCAPE PLAN SHEETS	-	
	UTILITIES	-	

KEY MAP – OPTION 01

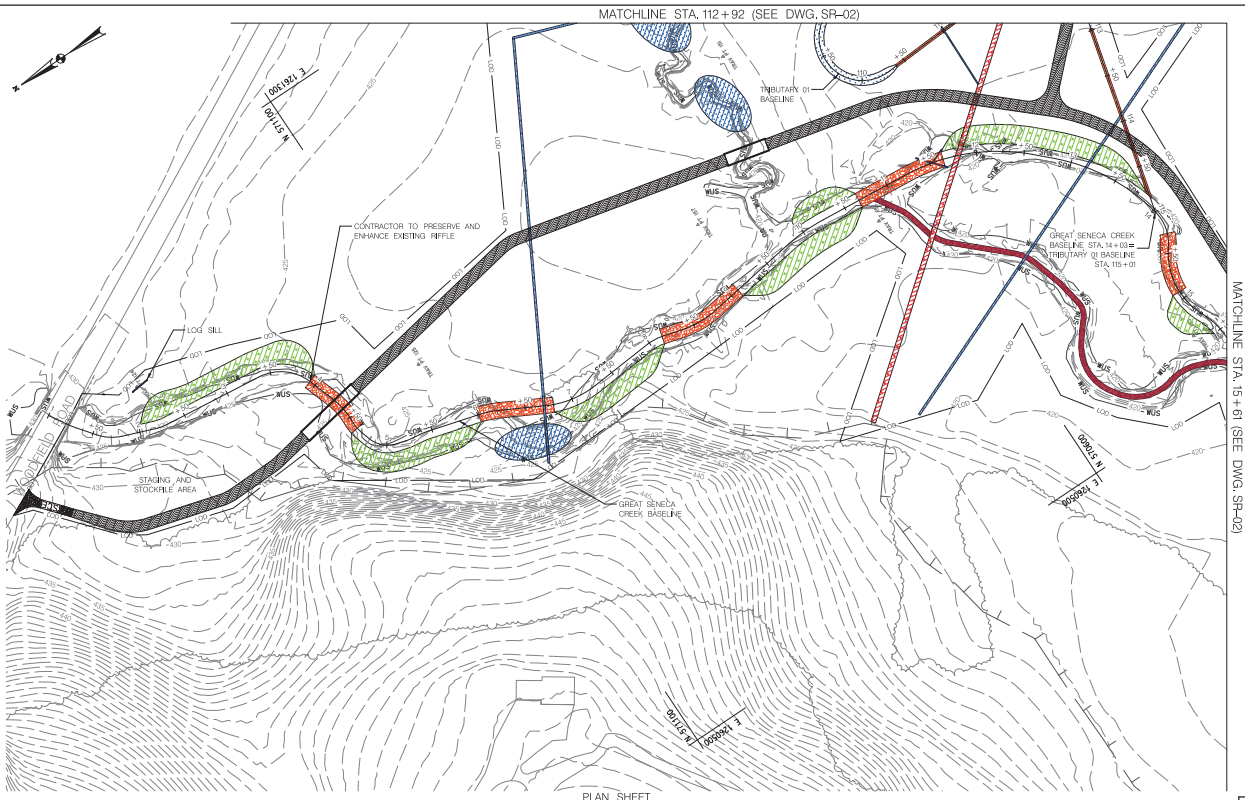
SCALE: 1" = 100' ADVERTISED DATE: – CONTRACT NO. –

DESIGNED BY: MH	COUNTY: MONTGOMERY
DRAWN BY: RG	LOG/MILE:
CHECKED BY: RN	HORIZONTAL SCALE:
MDE/PRD: XX–YR–XXXX	VERTICAL SCALE:

DRAWING NO. KM–01 OF 03 SHEET NO. 23 OF 34

BY: rgoodman

PLOTTED: Monday, November 19, 2018 AT 9:29 PM



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LEGEND

- RIFFLE MATERIAL MIX
- BANK TREATMENT
- OVERFLOW BRAID
- VERNAL POOL
- VALLEY WIDE ROCK
- PLUNGE POOL
- POOL
- VALLEY WIDE LOG
- LOG SILL
- LOG VANE
- LOD — LIMIT OF DISTURBANCE
- MULCH ACCESS ROAD
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS BRIDGE

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	-	
	SUPERELEVATION SHEETS	-	
	PIPE & DRAINAGE SCHEDULE	-	
	GEOMETRIC LAYOUT SHEETS	-	
	ROADWAY PLAN SHEETS	-	
	ROADWAY PROFILE SHEETS	-	
	TRAFFIC CONTROL SHEETS	-	
	EROSION & SEDIMENT CONTROL	-	
	SIGNING & MARKING PLANS	-	
	LANDSCAPE PLAN SHEETS	-	
	UTILITIES	-	

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STATE HIGHWAY ADMINISTRATION

OFFICE OF ENVIRONMENTAL DESIGN
WATER PROGRAMS DIVISION

SC-19
STREAM MITIGATION AND BANKING

STREAM RESTORATION PLAN SHEET – OPTION 01

SCALE: 1" = 50' ADVERTISED DATE: – CONTRACT NO. –

DESIGNED BY: MH
DRAWN BY: RG
CHECKED BY: RN
MDE/PRD: XX-FR-XXXX

COUNTY: MONTGOMERY
LOGMILE:
HORIZONTAL SCALE:
VERTICAL SCALE:

DRAWING NO. SR-01 OF 09 SHEET NO. 24 OF 34

BY: rgoodman

PLOTTED: Monday, November 19, 2018 AT 03:03 PM

MATCHLINE STA. 112+92 (SEE DWG. SR–01)

MATCHLINE (SEE DWG. SR–03)

PLAN SHEET
SCALE: 1" = 50'

50' 0 50' 100'
SCALE: 1" = 50'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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LEGEND

RIFFLE MATERIAL MIX	VALLEY WIDE ROCK	LOG SILL	STABILIZED CONSTRUCTION ENTRANCE
BANK TREATMENT	PLUNGE POOL	LOG VANE	TEMPORARY ACCESS BRIDGE
OVERFLOW BRAID	POOL	LIMIT OF DISTURBANCE (LOD)	
VERNAL POOL	VALLEY WIDE LOG	MULCH ACCESS ROAD	

R / W PLAT NUMBER

CROSS REFERENCE

ITEM	SHEET NOs.
TYPICAL SHEETS	.
SUPERELEVATION SHEETS	.
PIPE & DRAINAGE SCHEDULE	.
GEOMETRIC LAYOUT SHEETS	.
ROADWAY PLAN SHEETS	.
ROADWAY PROFILE SHEETS	.
TRAFFIC CONTROL SHEETS	.
EROSION & SEDIMENT CONTROL	.
SIGNING & MARKING PLANS	.
LANDSCAPE PLAN SHEETS	.
UTILITIES	.

REVISIONS

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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WATER PROGRAMS DIVISION

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STREAM MITIGATION
AND BANKING

STREAM RESTORATION PLAN SHEET – OPTION 01

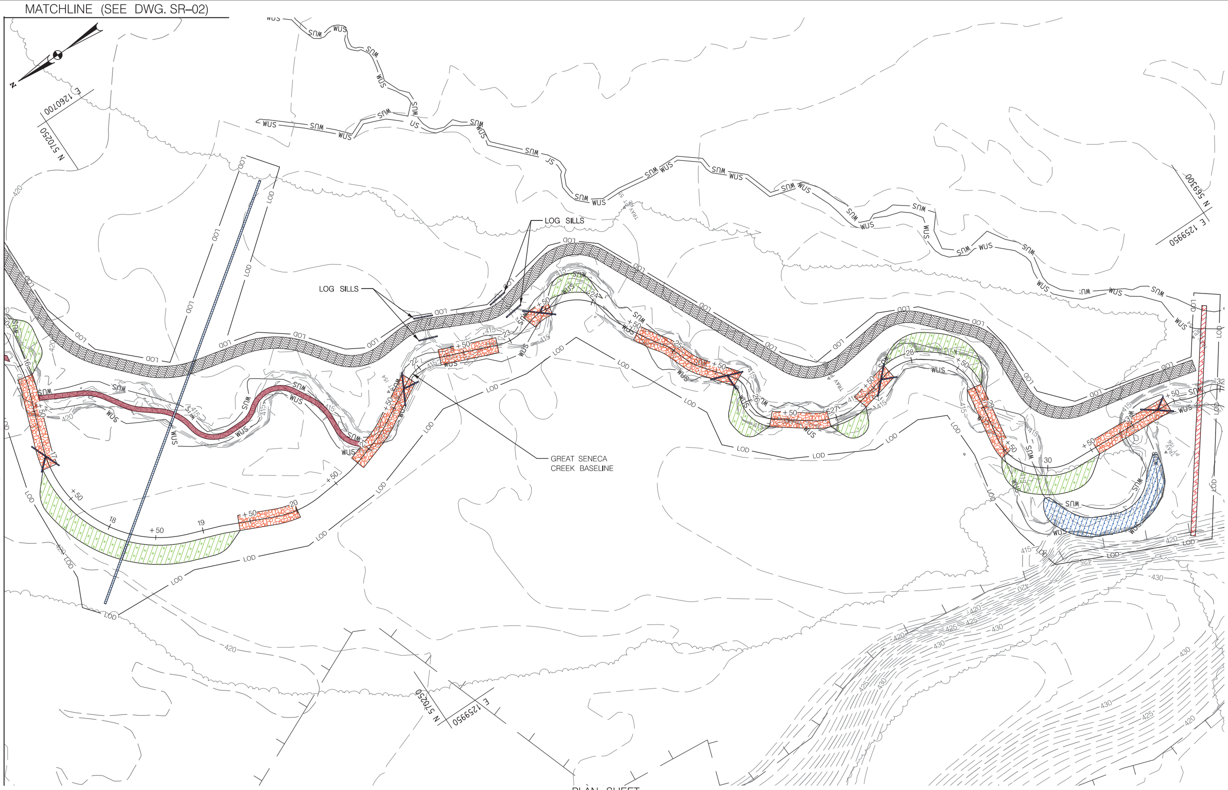
SCALE 1" = 50' ADVERTISED DATE – CONTRACT NO. –

DESIGNED BY	MH	COUNTY	MONTGOMERY
DRAWN BY	RG	LOGMILE	
CHECKED BY	BN	HORIZONTAL SCALE	
MDE/PRD	XX–PR–XXXX	VERTICAL SCALE	

DRAWING NO. **SR-02** OF **09** SHEET NO. 25 OF 34

PLOTTED: Monday, November 19, 2018 AT 07:03 PM

MATCHLINE (SEE DWG. SR-02)



PLAN SHEET
SCALE: 1" = 50'

50' 0 50' 100'
SCALE: 1" = 50'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

SC-19
STREAM MITIGATION
AND BANKING

STREAM RESTORATION PLAN SHEET – OPTION 01

SCALE 1" = 50' ADVERTISED DATE – CONTRACT NO. –

DESIGNED BY MH	COUNTY MONTGOMERY
DRAWN BY RG	LOGMILE
CHECKED BY BN	HORIZONTAL SCALE
MDE/PRD XX-PR-XXXX	VERTICAL SCALE

DRAWING NO. **SR-03** OF **09** SHEET NO. 26 OF 34

R/W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
	GEOMETRIC LAYOUT SHEETS	.	
	ROADWAY PLAN SHEETS	.	
	ROADWAY PROFILE SHEETS	.	
	TRAFFIC CONTROL SHEETS	.	
	EROSION & SEDIMENT CONTROL	.	
	SIGNING & MARKING PLANS	.	
	LANDSCAPE PLAN SHEETS	.	
	UTILITIES	.	

LEGEND

- RIFFLE MATERIAL MIX
- BANK TREATMENT
- OVERFLOW BRAID
- VERNAL POOL
- VALLEY WIDE ROCK
- PLUNGE POOL
- POOL
- VALLEY WIDE LOG
- LOG SILL
- LOG VANE
- LOD — LIMIT OF DISTURBANCE
- MULCH ACCESS ROAD
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS BRIDGE

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PLOTTED: Monday, November 19, 2018 AT 05:32 PM

APPENDIX C – SC-19 AGREED INQUISITION

MONTGOMERY COUNTY CIRCUIT COURT (Land Records) LEK 44305, p. 0330, MSA_CE63_44100. Date available 07/09/2012. Printed 09/25/2015.

LAND ACQUISITION PETITION OF: **STATE ROADS COMMISSION OF THE STATE HIGHWAY ADMINISTRATION** **Acting for and on behalf of the** **STATE OF MARYLAND** **Plaintiff** **v.** **BETTY BROWN CASEY, TRUSTEE** **OF THE EUGENE B. CASEY FOUNDATION** **Defendant**	**IN THE** **CIRCUIT COURT** **FOR** **MONTGOMERY COUNTY** **Case No. 26256-M**

FILED
LORETTA E. KNIGHT
CLERK'S OFFICE
MONTGOMERY CO., MD
2012 JUL -5 A 12: 25

AGREED INQUISITION

THIS AGREED INQUISITION made and taken at bar in the Circuit Court for Montgomery County, in the matter of the petition of the State Roads Commission of the State Highway Administration v. Betty Brown Casey, Trustee of the Eugene B. Casey Foundation, *Fee Simple Owner,* Defendant; and the parties hereto, through counsel, having waived a trial by jury and a view by the Court of the property being acquired, and upon the consent and agreement of the parties being evidenced by their signatures or the signatures of their counsel hereto, the Court does hereby find and determine, witnesseth:

IMP FD SURE 0.00
RECORDING FEE 0.00
TOTAL 0.00
Rcpt#999999
LEK KAQ Blk#282
Jul 05, 2012 12:26 PM

THAT Defendant declined to voluntarily transfer the property to Plaintiff and Plaintiff has the right to condemn the property hereinafter mentioned; and

THAT Plaintiff has instituted this action to acquire the property, and in lieu of proceeding with, and under threat of, condemnation, the parties have agreed to settlement of this action; and

MONTGOMERY COUNTY, MD
APPROVED BY mp
JUL 05 2012

$ N/A RECORDATION TAX PAID
$ N/A TRANSFER TAX PAID

ENTERED
MAY 02 2012 NS
Clerk of the Circuit Court
Montgomery County, Md.

THAT the parties have agreed on Six Hundred Thirty-Eight Thousand One Hundred Fifty-Nine and 00/100 Dollars ($638,159.00), inclusive of pre-judgment interest, as the amount of damages which Defendant will sustain by the taking, use and occupation of the hereinafter described property; and

THAT the said property is situate in the First Election District of Montgomery County, in the State of Maryland, and more particularly described as follows:

ALL that property, consisting of a total of 2,103,045 square feet or 48.2792 acres of land, more or less, identified as Parcel 1, containing 2,086,482 square feet or 47.899 acres of land, more or less, as Parcel 2, containing 6,181 square feet or 0.1419 of an acre of land, more or less, as Parcel 3, containing 10,090 square feet or 0.2316 of an acre of land, more or less, and as Parcel 4, containing 292 square feet or 0.0067 of an acre of land, more or less, identified as Item No. 103198 and lying between the lines marked "Right of Way Line" on State Highway Administration Plat No. 58682 (Rev. 12/15/10), which is being taken in fee simple.

A reduced copy of State Highway Administration Plat No. 58682 (Rev. 12/15/10) is attached hereto and incorporated herein.

TOGETHER with any building and improvements thereon and the rights, alleys, ways, waters, roads, privileges, appurtenances and advantages to the same belonging or in anyway appertaining.

THAT the said property is now held under the provisions of a deed dated December 12, 1995 and recorded among the Land Records of Montgomery County, Maryland, in Liber No. 13830, folio 424.

THAT the purpose for which the said land and property above described is sought to be condemned is for the construction, reconstruction, improvement, maintenance and completion of

ENTERED
MAY 02 2012
Clerk of the Circuit Court
Montgomery County, Md.

MONTGOMERY COUNTY CIRCUIT COURT (Land Records) LEK 44305, p. 0331, MSA_CE63_44100. Date available 07/09/2012. Printed 09/25/2015.

the State System of Roads and Bridges and designated as Intercounty Connector SC-19 Wetland Mitigation in Montgomery County, Maryland.

THAT on April 20, 2011, Plaintiff deposited a check in the amount of Three Hundred Thirty-Eight Thousand and 00/100 Dollars ($338,000.00), payable to the Clerk of the Circuit Court for Montgomery County to the use of Defendant, pursuant to the Maryland Constitution, Article III, Section 40B; the Maryland Transportation Code Annotated, Sections 8-334 to 8-339; and the Maryland Real Property Code Annotated, Title 12. Thereafter, by an Order entered by the Court on June 10, 2011, Defendant withdrew the Three Hundred Thirty-Eight Thousand and 00/100 Dollars ($338,000.00) that was deposited to her use.

THAT the balance of Three Hundred Thousand One Hundred Fifty-Nine and 00/100 Dollars ($300,159.00) is due as of the date of this Agreed Inquisition; and

THAT Defendant has waived any post-judgment interest, provided that the balance is deposited into the Registry of this Court within thirty (30) days of the entry of judgment on the Agreed Inquisition; and

THAT the total payment per §10-912(b) of the Tax-General Article of the Annotated Code of Maryland is Six Hundred Thirty-Eight Thousand One Hundred Fifty-Nine and 00/100 Dollars ($638,159.00); and

THAT the undersigned, Robert C. Park, Jr., Esquire, certifies under the penalties of perjury that the following is true to the best of his knowledge, information and belief, that in accordance with §10-912(d)(1)(i) of the Tax-General Article of the Annotated Code of Maryland, Defendant is a resident of the State of Maryland, that he is an agent of Defendant and he has the authority to sign this document on Defendant's behalf.

ENTERED
MAY 02 2012
Clerk of the Circuit Court
Montgomery County, Md.

MONTGOMERY COUNTY CIRCUIT COURT (Land Records) LEK 44305, p. 0332, MSA_CE63_44100. Date available 07/09/2012. Printed 09/25/2015.

THAT as of the date of this Agreed Inquisition the title as described above to the property as described above shall be held and become vested in the State of Maryland, to the use of the State Roads Commission of the State Highway Administration, clear and discharged from any claims, liens or demands of the Defendant, and title is being transferred "as is, where is" and without any representations or warranties by Defendant.

IN WITNESS WHEREOF the Court has hereunto set its hand and seal this 2nd day of May, 2012.

Judge of the Circuit Court
for Montgomery County

CONSENT:

Laurie R. Hanig
Assistant Attorney General
707 North Calvert Street
Baltimore, MD 21202
(410) 545-0040

Attorney for Plaintiff,
State Roads Commission

Robert C. Park, Jr.
Linowes and Blocher LLP
7200 Wisconsin Avenue, 8th Floor
Bethesda, MD 20814
(301) 961-5175

Attorney for Defendant,
Betty Brown Casey, Trustee
of the Eugene B. Casey Foundation

Return Recorded Inquisition To:
Chief
Records and Research Section
State Highway Administration
707 North Calvert Street, M-202
Baltimore, MD 21202

ENTERED
MAY 02 2012
Clerk of the Circuit Court
Montgomery County, Md.

MONTGOMERY COUNTY CIRCUIT COURT (Land Records) LEK 44305, p. 0333, MSA_CE63_44100. Date available 07/09/2012. Printed 09/25/2015.