



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

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Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

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

June 14, 2019

Mr. Michael Liberati  
Corteva Agriscience  
Corteva Environmental Remediation  
133 Blakiston Lane  
Warwick, MD 21912

### VIA ELECTRONIC MAIL

**Re: Constitution Park and Allied Ready Mix Bank Management Area  
Post-Construction Bank Repair Memo  
South River AOC 4, Waynesboro, Virginia  
EPA ID# VAD003114832**

Dear Mr. Liberati:

This letter acknowledges the receipt and review of the Constitution Park and Allied Ready Mix Bank Management Area Post-Construction Bank Repair Memo dated May 23, 2019, submitted to the Virginia Department of Environmental Quality, Office of Remediation Programs (Department) by AECOM on behalf of the Corteva Agriscience (Corteva/formerly DuPont).

The Department has no comments on the completed repairs and accepts them as complete. Monitoring of the repairs should follow the approved Maintenance Plan included in the Basis of Design Report, Phase 1A BMAs, South River AOC 4.

If you have any questions, you may contact me at 703-583-3825 or by email at [Kurt.Kochan@deq.virginia.gov](mailto:Kurt.Kochan@deq.virginia.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Kurt W. Kochan'.

Kurt W. Kochan  
Corrective Action Project Manager

cc: DuPont Waynesboro Correspondence File  
Chris Evans, Calvin Jordan, VDEQ  
Josh Collins, Cameron Dixon, AECOM

**Project name:**  
Former DuPont Waynesboro Site  
Area of Concern 4

**To:**  
Michael Liberati, Corteva  
Nancy Grosso, Corteva

**Project ref:**  
60594242

**CC:**  
Josh Collins, AECOM

**From:**  
Cameron Dixon, PE AECOM  
Darrell Kennedy, AECOM

**Date:**  
May 23, 2019

**DRAFT**

# Memo

**Subject:** Constitution Park and Allied Ready Mix Bank Management Area  
Post-Construction Bank Repair Memo

This memorandum documents Bank Management Area (BMA) repair activities completed at the Constitution Park (CP) and Allied Ready Mix (ARM) BMAs in April and May 2019. The need for corrective action was identified during the Winter 2018/2019 Leaf-off inspections that were conducted in accordance with the Maintenance Plan included as Appendix M of the Basis of Design Report, Phase 1A BMAs, South River AOC 4 (Anchor QEA et al., 2016). Corrective actions included backfilling soil into geocells, replacement of worn erosion control fabric, and planting of native vegetation. This memo will briefly describe the inspection findings, and summarize the design, and construction of the corrective actions performed at CP and ARM BMAs.

Attachments to this document include:

- Figure 1: 2018/2019 Post-Construction Inspection and Bank Repair Areas
- Appendix A: Post Construction Erosion – Corrective Action Memorandum
- Appendix B: Bank Repair Construction Daily Reports
- Appendix C: Construction Material Quantity Tables

## Inspection Findings

A summary of inspection findings requiring corrective action are provided in the bullets below by BMA; a complete summary of the Winter Leaf-off Inspections are provided in the Constitution Park and Allied Ready Mix BMA Inspection Memoranda (AECOM, 2019a, AECOM 2019b).

### Constitution Park

- Small areas of erosion were documented at the toe of slope associated with torn erosion control fabric and scour of planting substrate within the exposed geocell.
- Lack of vegetation throughout the lower half of the bank face due to Japanese knotweed (*Fallopia japonica*) management activities is permitting scour of planting substrate from beneath the erosion control fabric.

### **Allied Ready Mix**

- Planted container stock along the mid- to upper-half of the bank face had been lost due to high river flows immediately following planting, before roots could become established.
- Torn erosion control fabric and scour of planting substrate were observed where planted container stock was lost.

### **Corrective Action**

A summary of the proposed design and implementation of the corrective actions is provided in the following sections. Further design details are provided in Appendix A – Post Construction Erosion – Corrective Action Memorandum.

### **Design**

The areas of erosion identified in the inspections were examined for causes of failure. The loss of soil at CP was caused by the loss of fine soils through the erosion control fabric (coir mat) in areas where spraying for Japanese knotweed control prevented vegetative growth. In addition to the loss of fines through the coir mat, some areas at the base of the bank experienced erosion due to foot traffic from anglers. At ARM, the primary cause of erosion was the loss of container plantings placed in the late fall that failed to root prior to high storm events which caused them to be washed out. Where the plantings washed out, there was a pathway for water to pass under the coir mat and cause erosion of fine soils through the coir mat, with larger mass erosion at the locations where the container plantings were lost.

To prevent fine soil particles from leaving the geocell, the corrective action design included a double net coconut biodegradable erosion control blanket (ECB). Live stakes were selected to replace container stock along the mid-bank face to introduce vegetation to the bank slopes and secure the ECB placed over the geocell and fill material. The container plantings required larger holes be cut into the ECB for installation purposes and did not stay secured in high flows, which resulted in erosion areas; therefore 1-gallon and 5-gallon container plantings were replaced with plug plantings and/or live stakes.

In general, the design approach for the bank repairs consisted of removing damaged coir mat, backfilling erosion areas with planting substrate, installing the coconut ECB material over backfilled areas, securing the ECB with live stakes, staples, and coir logs (Constitution Park only), and applying hydroseed to establish vegetation. The bank repairs were proposed for approximately river station 12+00 to 14+00 (CP) and 73+00 to 75+00 and 83+00 to 84+00 (ARM) as shown on Figure 1. In addition to reapplying topsoil and ECB, the design at CP required plug plantings and 6" coir logs to be installed at the base of the bank where foot traffic had caused erosion.

### **Construction**

Construction of the bank repairs was conducted by Summit Environmental, LLC from April 11 to May 3, 2019. The proximity of the sites and similarity in design allowed the Contractor to phase the work to be completed in 10 working days as follows:

- Constitution Park BMAs: April 11, 12, 15, 26, 29, 30, and May 1, 2, and 3
- Allied Ready Mix BMAs: April 27, 29, 30, and May 2 and 3

Construction daily reports were prepared during the construction of the bank repairs; these reports are combined chronologically and attached to this memo as Appendix B.

The Contractor began the work by inspecting site conditions at Constitution Park. Laborers were used to cut and remove the existing damaged coir mat. Planting substrate material was transported to CP from the project's borrow source site, Jones Hollow. The laborers placed the planting substrate into the 12" geocell using wheel barrows and hand tools. Fertilizer and seed were applied over the planting substrate by hand. Once areas were backfilled and seeded, the coconut ECB was placed over the exposed areas and secured with landscape staples. This process was repeated until the bank work within the required river stations was completed. The required 8" coir logs were installed with the ECB as proposed by the design. In addition to the proposed repairs

identified in the Corrective Action memorandum (Appendix A), a small area south of the stone stairs at CP where vegetation was established was also identified for repair while Summit Environmental was completing the work outlined above. In this area straw and coir mat were placed to provide increased erosion control at the Southern extent of the remedial footprint where pedestrian access to the river had damaged the existing coir mat and vegetation. As an additional measure to protect the remedial design an access path to the South River was installed using non-woven geotextile, 3” geocell, and crushed stone. The access path was installed off the remedial cap to prevent pedestrians from walking on the completed BMA.

Over a period of 2 day's Meadville Land Service, Inc. was sub-contracted by Summit to perform installation of live stakes and 2” plugs as specified in the design. As a final measure, Summit applied hydroseeding along the repaired banks and adjacent areas. Complete quantities of material installed, plantings, and seed species are provided in Appendix C.

Similarly to CP, the repairs at ARM began with the Contractor performing a site walk of the bank repair areas. Within the critical slope reduction area, damaged coir mat was cut and removed from the upper portion of the bank. Planting substrate was brought in from Jones Hollow and was placed using wheel barrows and hand tools in eroded areas within the geocell at Primary BMA A and B. Fertilizer and seed was applied by hand over the planting substrate. A full layer of coconut ECB was installed along the upstream BMA's at ARM and as patches at Primary BMA B. The ECB was secured using landscape staples; at the critical slope areas along the top of bank, a trench was dug to bury the ECB and was backfilled with planting substrate. Meadville Land Service, Inc. planted live stakes along the base of the bank for future vegetation growth and to secure the overlapping portion of the coconut ECB with existing coir mat at the bottom of the bank. Summit performed hydroseeding similarly to the application at CP. Since large sections of ARM were finished last winter, Ogle Oats were applied in conjunction with the custom seed mix to expedite vegetative growth for soil stabilization at ARM. Full details for the quantities of materials installed, plantings, and seed species are included in Appendix C attached.

## **Monitoring**

The bank repairs completed as part of this effort will be monitored during the routine BMA maintenance Inspection (2019 Leaf-on), currently scheduled to be conducted the week of June 10, 2019. Additionally, these repairs and all completed BMAs will continue to be inspected following significant storm events as outlined in the AOC 4 Maintenance Plan (Anchor QEA et al., 2016).

## **References**

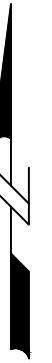
- AECOM. 2019a. *2018/2019 Constitution Park BMA – Leaf-off Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4*. March 2019.
- AECOM. 2019b. *2018/2019 Allied Ready Mix BMA – Leaf-off Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4*. March 2019.
- Anchor QEA, AECOM, and E.I. du Pont de Nemours and Company. 2016b. *Basis of Design Report, Phase 1A Bank Management Areas, South River Area of Concern 4*. September 2016.

## Figures





**FIGURE 1 - 2018/2019 POST-CONSTRUCTION INSPECTION AND BANK REPAIR AREAS**  
**SOUTH RIVER - ACO 4 - FORMER DUPONT WAYNESBORO SITE**  
DUPONT, WAYNESBORO, VA  
PROJECT NUMBER: 60594242





# **Appendix A: Post Construction Erosion – Corrective Action Memorandum**

# Memorandum

To	Michael Liberati, DuPont CRG Nancy Grosso, DuPont CRG	Page	1 of 2
CC	Kristy Hoffman, AECOM Kevin Suter, AECOM		
Subject	Post Construction Erosion – Corrective Action Memorandum		
From	Cameron Dixon, AECOM Joshua Collins, AECOM		
Date	March 15, 2019		

This memorandum summarizes the corrective actions to be completed at the Constitution Park and Allied Ready Mix BMAs for areas with observed soil erosion.

Details of the post construction inspections including photographic logs are found in the 2018/2019 Constitution Park BMA - Leaf-off Maintenance Inspection and 2018/2019 Allied Ready Mix BMA - Leaf-off Maintenance Inspection.

### Constitution Park

Minor geocell infill and erosion control blanket repairs need to be installed from approximately river station 2+50 to 04+50. The repairs shall consist of:

- Cutting the existing erosion control blanket approximately 2' below the limit of established vegetation
- Removing the coir fabric to the bottom of the slope
- Placing planting substrate to fill the geocells where soil loss has occurred.
- Installing live stakes in the bottom 2'-4' of the bank as shown in Sheet D-201.
- Using a 6" coir log staked at the bottom of the slope above the 12" coir logs to anchor new erosion control blanket.
- Overlapping the existing erosion control blanket over the new erosion control blanket at the top of the slope and using landscape staples on a 1' spacing to secure the top of the ECBs.
- Installing plug plantings in the new 6" coir log and the top 12" coir log at 12" spacing on center.

### Allied Ready Mix

Sections of Allied ready mix lost most of the shrubs installed during fall 2018. There were also areas where significant soil loss occurred over the winter where there was no vegetative growth prior to the winter high flow season.

From station 70+00 to Station 73+00 in the critical slope stabilization area:

- Cut the erosion control blanket 1' above the stone toe, and remove to the top of bank, protecting the live-stakes at the base of the bank.
- Place planting substrate to fill geocell back to top.
- Plant additional live-stakes in a two foot high row above the existing live-stakes at the base of the bank.
- Install Erosion Control Blanket as shown on Sheet D-204



From station 73+00 to 75+00 – where plants were lost, but there was not significant soil erosion:

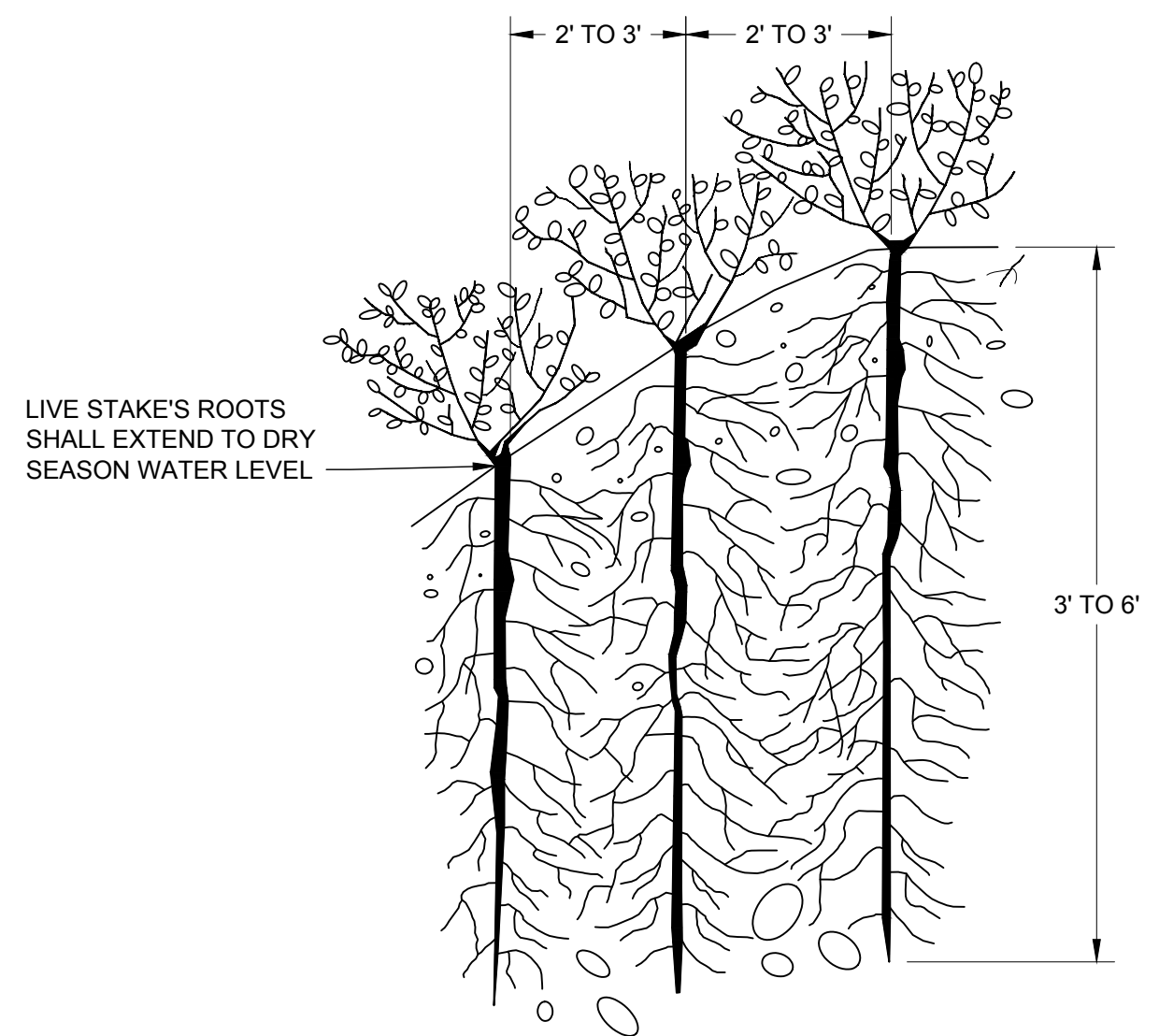
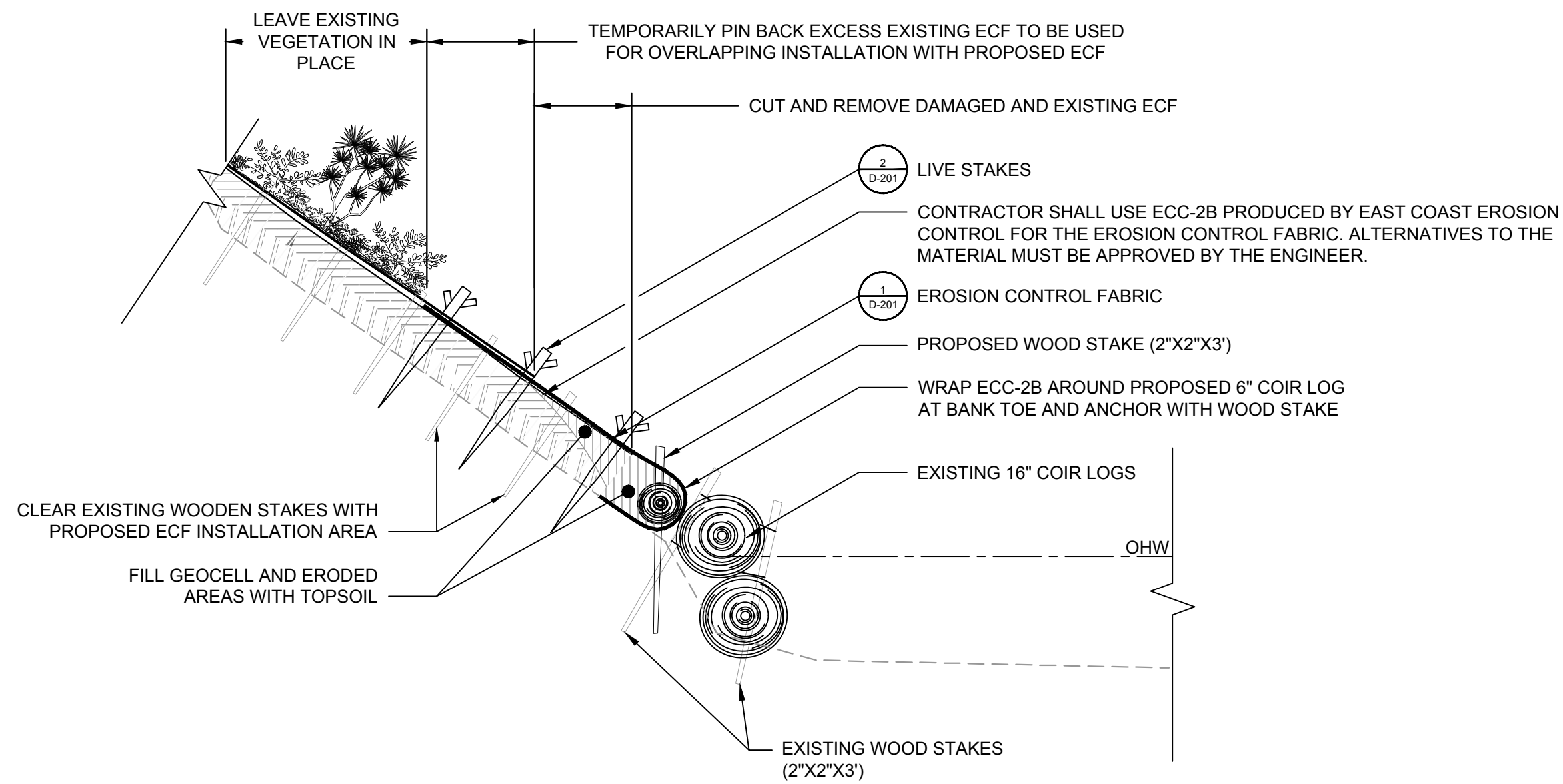
- Fill in areas where plants were lost with planting substrate.
- Patch erosion control blanket with overlaps of at least one foot with existing erosion control blanket secured with landscaping staples.
- Plant additional live-stakes in a two foot high row above the existing live-stakes at the base of the bank.

At Primary BMA-B, at station 83+00 to 84+00, it is unclear the extent of soil loss below the erosion control blanket. The contractor and the DSR will evaluate the extent of soil loss, and determine if the procedures described for station 70+00 to 73+00 or for Station 73+00 to Station 75+00 will be applied.

Livestakes and plugs will consist of the following species and quantities

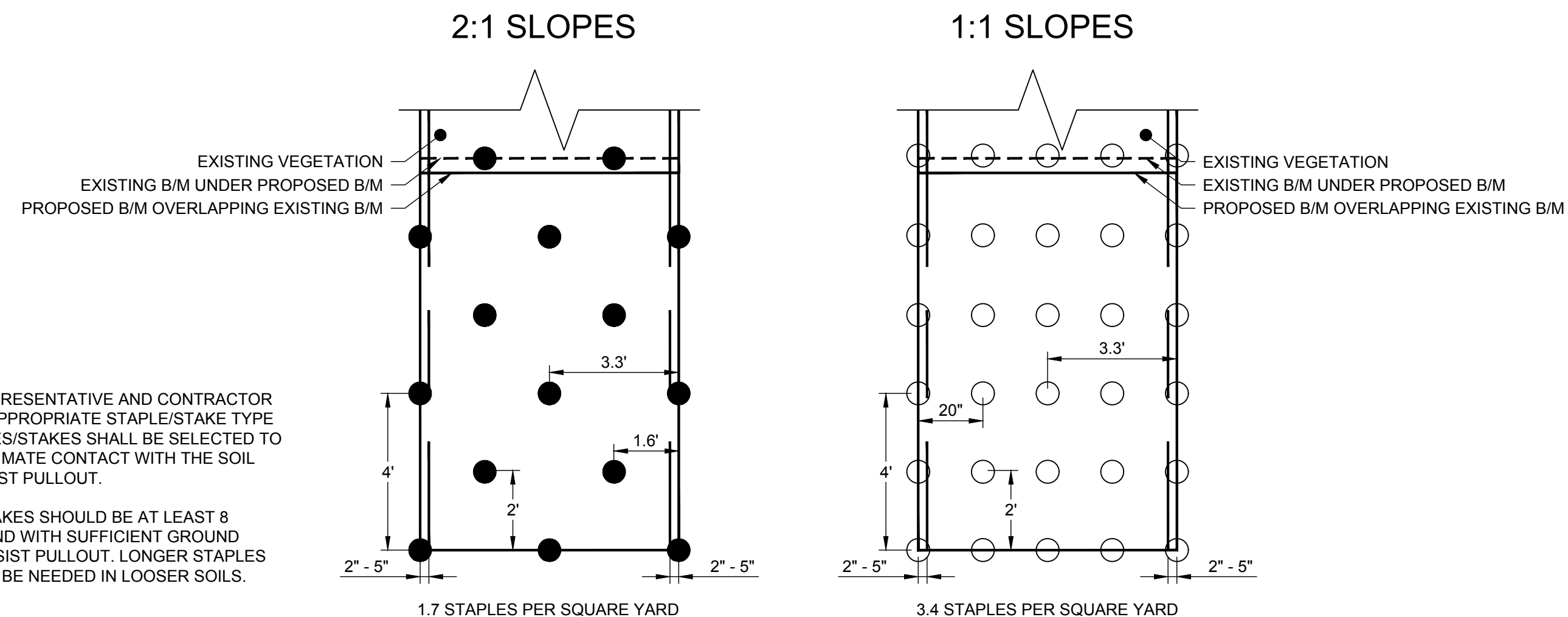
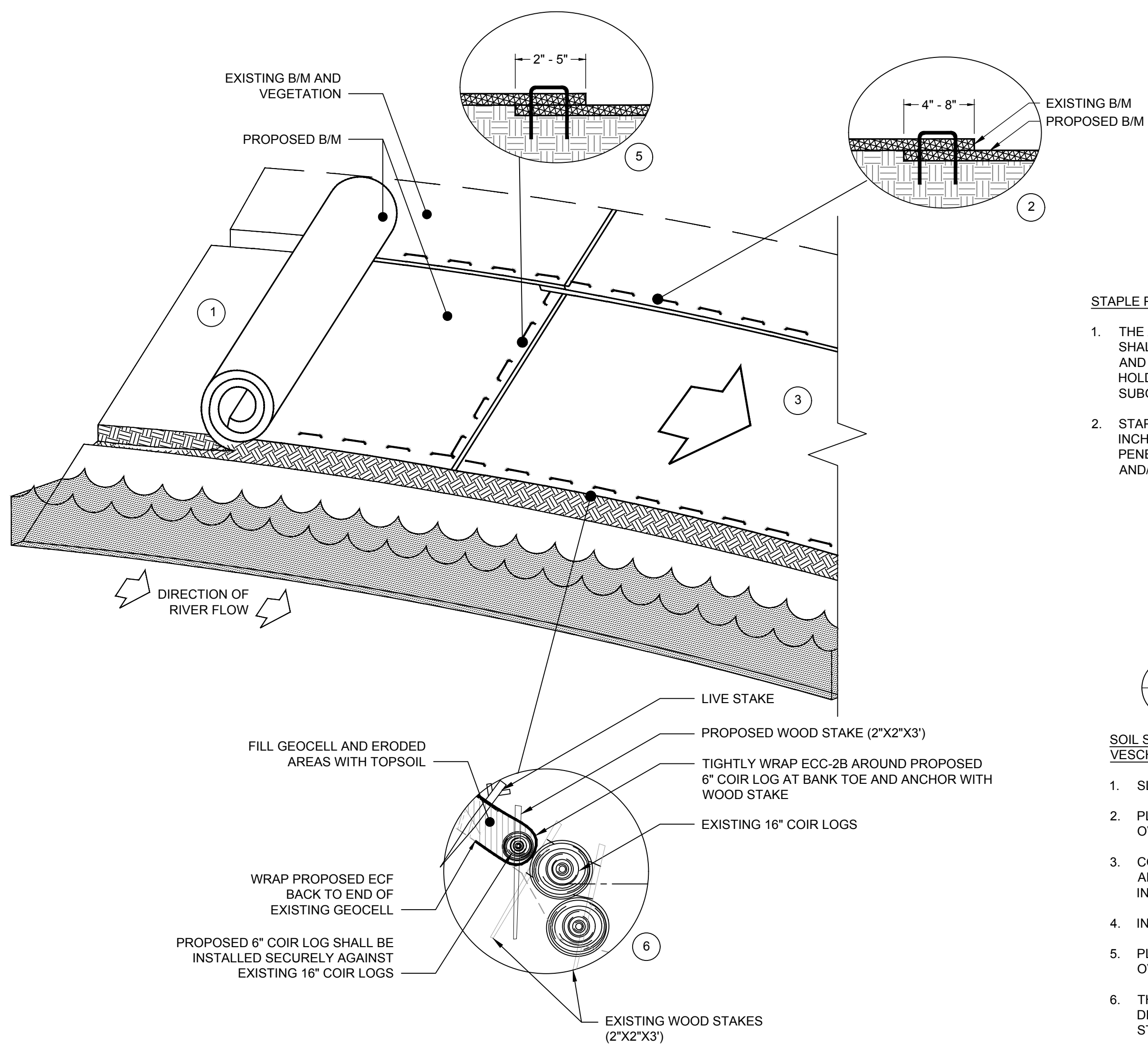
SPECIES		FORM	Quantity		
			Constitution Park	Allied Ready Mix	TOTAL
<i>Cornus sericea</i>	Red Osier Dogwood	Live Stake	400	300	700
<i>Cornus amomum</i>	Silky dogwood	Live Stake	100	75	175
<i>Sambucus canadensis</i>	Black elderberry	Live Stake	100	75	175
<i>Viburnum lentago</i>	Nannyberry	Live Stake	100	75	175
<i>Viburnum dentatum</i>	Southern arrow-wood	Live Stake	100	75	175
<i>Iris versicolor</i>	Blueflag Iris	2" Plug	200	0	200
<i>Lobelia cardinalis</i>	Cardinal flower	2" Plug	200	0	200

**PROPOSED BANK MAINTENANCE TYPICAL CROSS SECTION**



**2 LIVE STAKES**  
- VESCH STD 3.37 NTS

- LIVE STAKES NOTES:**  
VESCH STD & SPEC 3.37
1. ROOTED, LEAFED CONDITION OF PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.
  2. LIVE STAKES SHALL BE 1 TO 2 INCHES IN DIAMETER AND 3 TO 6 FEET LONG. NO LEAF BUDS SHALL HAVE INITIATED GROWTH BEYOND 1/4 INCH, AND THE CAMBIUM LAYER SHALL BE MOIST AND GREEN.
  3. LIVE STAKES SHALL BE INSERTED BY HAND INTO PILOT HOLES. PILOT HOLES SHALL BE CREATED USING A DIBBLE, IRON BAR, OR SIMILAR TOOL. A MINIMUM OF 4 INCHES AND TWO LIVE BUDS SHALL BE EXPOSED ABOVE THE GROUND SURFACE. AT LEAST HALF THE LENGTH OF THE STAKE SHALL BE INSERTED INTO THE SOIL.



**STAPLE PATTERN GUIDE**

- STAPLE PATTERN NOTES:**
1. THE AECOM SITE REPRESENTATIVE AND CONTRACTOR SHALL SELECT THE APPROPRIATE STAPLE/STAKE TYPE AND LENGTH. STAPLES/STAKES SHALL BE SELECTED TO HOLD THE MAT IN INTIMATE CONTACT WITH THE SOIL SUBGRADE AND RESIST PULLOUT.
  2. STAPLES AND/OR STAKES SHOULD BE AT LEAST 8 INCHES IN LENGTH AND WITH SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. LONGER STAPLES AND/OR STAKES MAY BE NEEDED IN LOOSER SOILS.

**1 SOIL STABILIZATION BLANKETS AND MATTING (B/M)**  
- VESCH STD 3.36 NTS

- SOIL STABILIZATION BLANKETS AND MATTING (B/M) NOTES:**  
VESCH STD & SPEC 3.36
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. PREPARE SOIL INCLUDING ANY NECESSARY APPLICATION OF SOIL AMENDMENTS SUCH AS LIME OR FERTILIZER.
  2. PLACE EXISTING B/M END OVER END (SHINGLE STYLE) WITH A 4 INCH TO 8 INCH OVERLAP. SEAM OVERLAPS SHOULD BE SHINGLED IN THE PREDOMINANT FLOW DIRECTION. STAPLE/STAKE THROUGH OVERLAPPED AREAS, APPROXIMATELY 12 INCHES APART ACROSS ENTIRE B/M WIDTH. EXISTING B/M SHALL OVERLAP PROPOSED B/M. FOLLOW THE STAPLE PATTERN GUIDE FOR MORE DETAILS.
  3. CONTRACTOR SHALL ROLL THE B/M ACROSS THE SHORELINE SLOPE. B/M SHALL BE ROLLED IN A CONTROLLED FASHION. B/M SHALL NOT BE ALLOWED TO ROLL DOWN THE SLOPE ON ITS OWN. LAY B/M LOOSELY AND STAKE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH. ALL B/M MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
  4. INSTALL B/M OVER ENTIRE PLANTING AREA. AVOID EXISTING TREES AND EXISTING STUMPS.
  5. PLACE CONSECUTIVE B/M END OVER END (SHINGLE STYLE) WITH A 2 INCH TO 5 INCH OVERLAP. SEAM OVERLAPS SHOULD BE SHINGLED IN THE PREDOMINANT FLOW DIRECTION. STAPLE/STAKE THROUGH OVERLAPPED AREAS, APPROXIMATELY 12 INCHES APART ACROSS ENTIRE B/M WIDTH.
  6. THE EDGES OF THE PROPOSED B/M SHALL BE WRAPPED AROUND A 6-INCH COIR LOG. THE 6-INCH COIR LOG SHALL BE SECURED SNUG AGAINST THE 16-INCH COIR LOGS EXISTING. WOODEN STAKES SHALL BE DRIVEN THROUGH THE CENTER OF THE 6-INCH COIR LOG AND THROUGH BOTH THE TOP AND BOTTOM OVERLAPPING LAYER OF PROPOSED B/M. 3 FEET MAXIMUM LINEAR DISTANCE BETWEEN WOODEN STAKES. STAPLES MAY BE USED TO SUPPLEMENT WOODEN STAKES FOR ADDITIONAL ANCHORAGE.
  7. CONTRACTOR SHALL USE ECC-2B (BIODEGRADABLE DOUBLE COCONUT) MANUFACTURED BY EAST COAST EROSION CONTROL. ALTERNATIVE MATERIALS MUST BE APPROVED BY THE ENGINEER.



**PROJECT**  
**CONSTITUTION PARK BMAS**  
SOUTH RIVER, LEFT BANK, RRMS 0.17 TO 0.28  
AREA OF CONCERN 4 - IRM  
FORMER DUPONT WAYNESBORO SITE  
WAYNESBORO, VA

**CLIENT**  
E.I. DU PONT DE NEMOURS AND COMPANY  
974 CENTRE ROAD  
CHESTNUT RUN PLAZA 730  
WILMINGTON, DE 19805  
www.dupont.com

**CONSULTANT**  
AECOM  
625 WEST RIDGE PIKE, SUITE E-100  
CONSHOHOCKEN, PA 19428  
610.832.3500 tel 610.832.3501 fax  
www.aecom.com

**REGISTRATION**

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION

**KEY PLAN**

**PROJECT NUMBER**

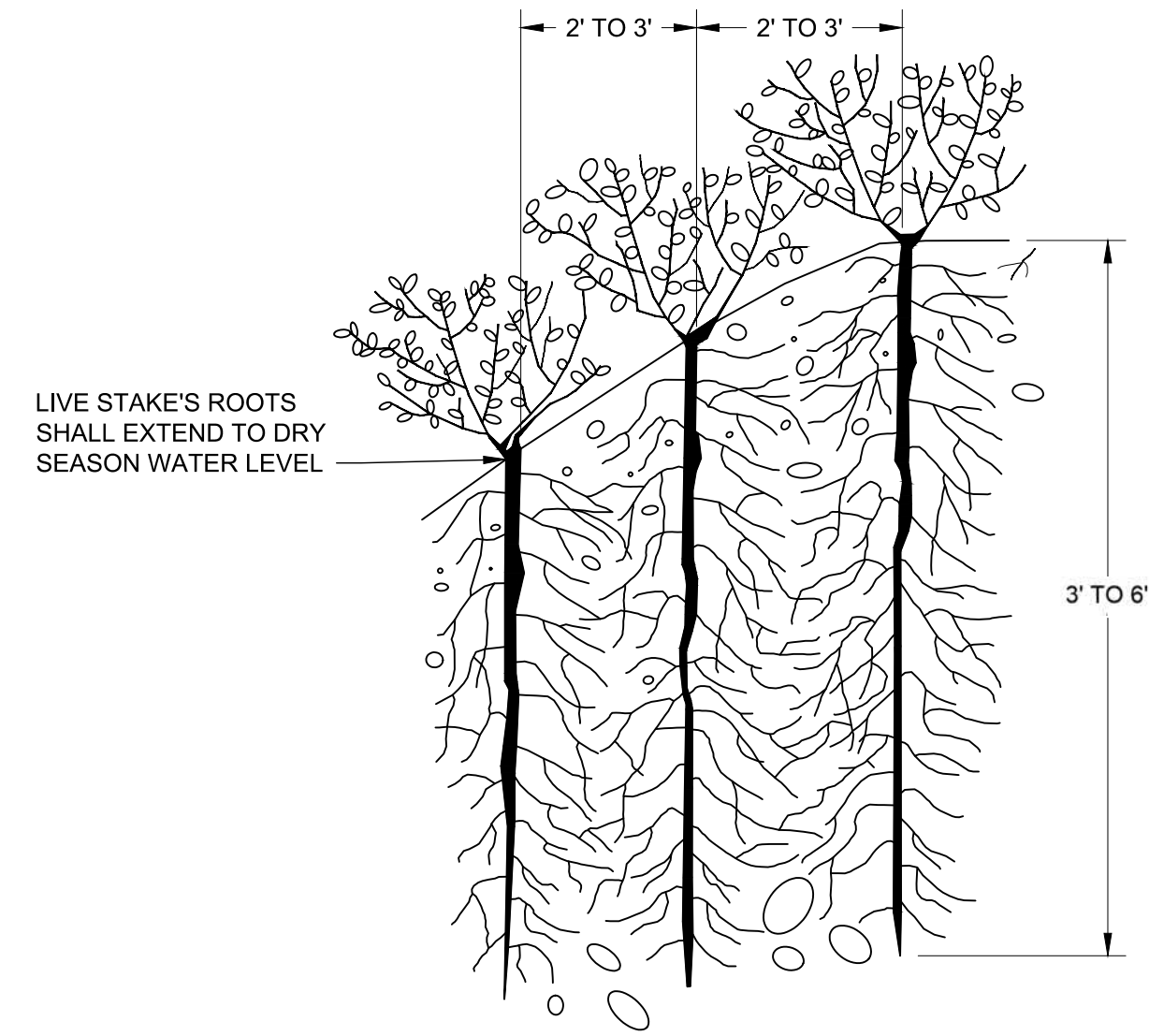
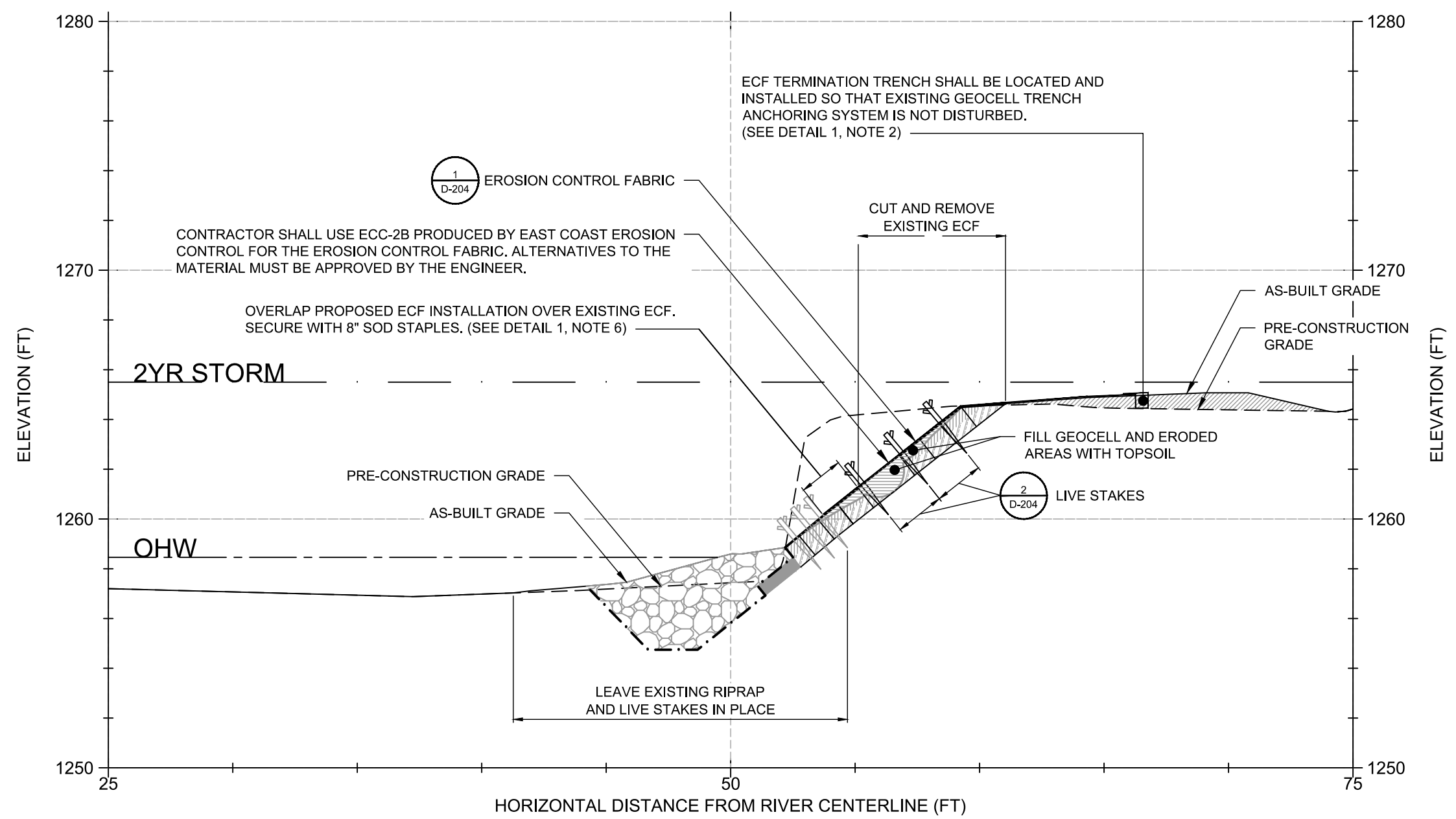
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**POST CONSTRUCTION MAINTENANCE DETAILS**

**SHEET NUMBER**  
D-201

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 Last saved by: DARRELL KENNEDY (2019-03-06) Last Plotted: 2019-05-06  
 Filename: P:\JOBS\REIM\_ENG\PROJECT FILES\DUPOINT-SOUTH RIVER\00-CAD\10 CAD\10 SHEETS\POST CONSTRUCTION\POST CONSTRUCTION BANK REPAIR.DWG

# PROPOSED BANK MAINTENANCE TYPICAL CROSS SECTION

72+00

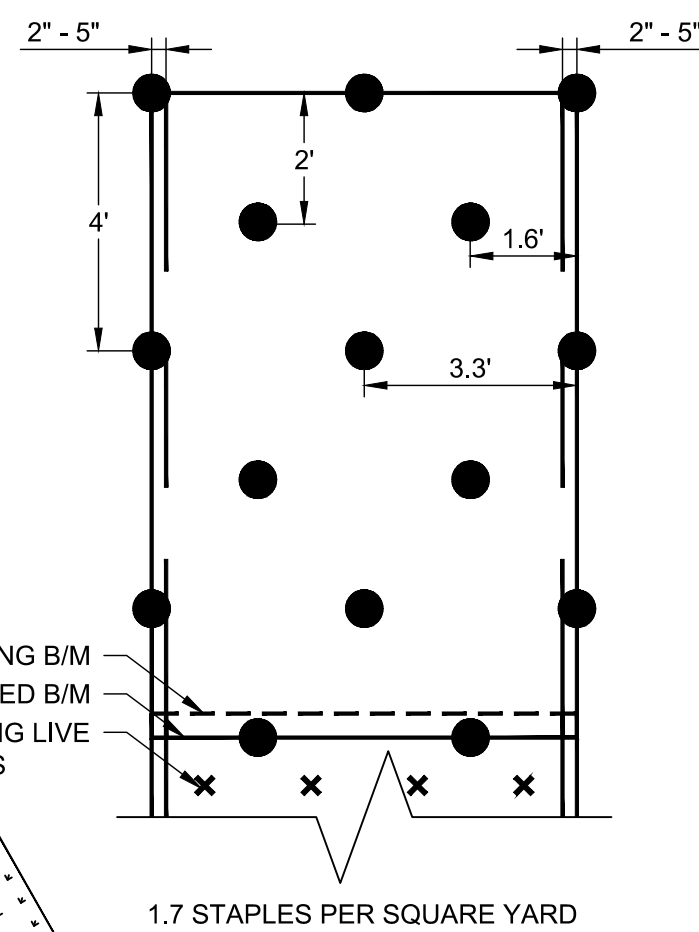


- 2 LIVE STAKES**  
- VESCH STD 3.37 NTS
- LIVE STAKES NOTES:**  
VESCH STD & SPEC 3.37
1. ROOTED, LEAFED CONDITION OF PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.
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  3. LIVE STAKES SHALL BE INSERTED BY HAND INTO PILOT HOLES. PILOT HOLES SHALL BE CREATED USING A DIBBLE, IRON BAR, OR SIMILAR TOOL. A MINIMUM OF 4 INCHES AND TWO LIVE BUDS SHALL BE EXPOSED ABOVE THE GROUND SURFACE. AT LEAST HALF THE LENGTH OF THE STAKE SHALL BE INSERTED INTO THE SOIL.

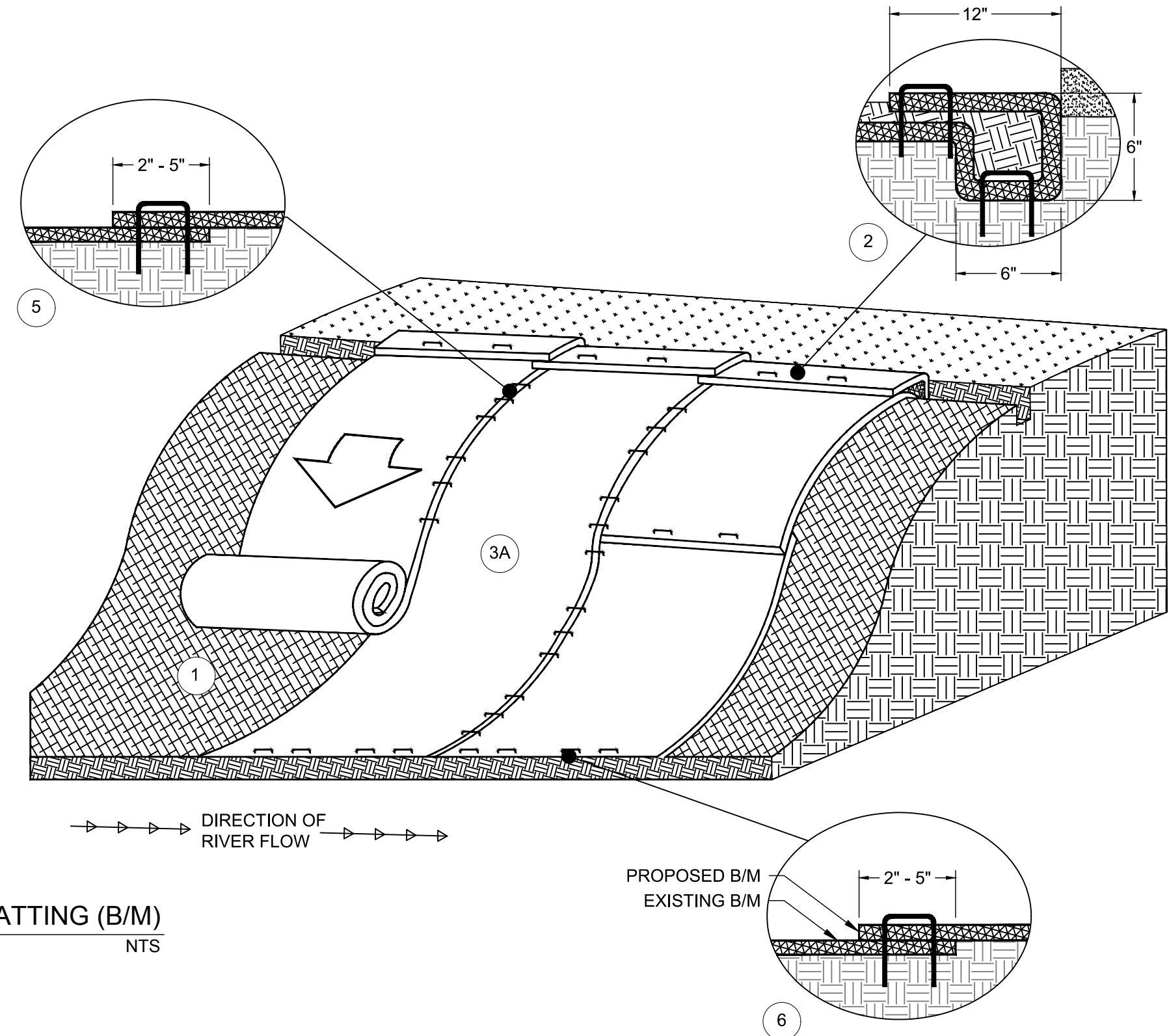
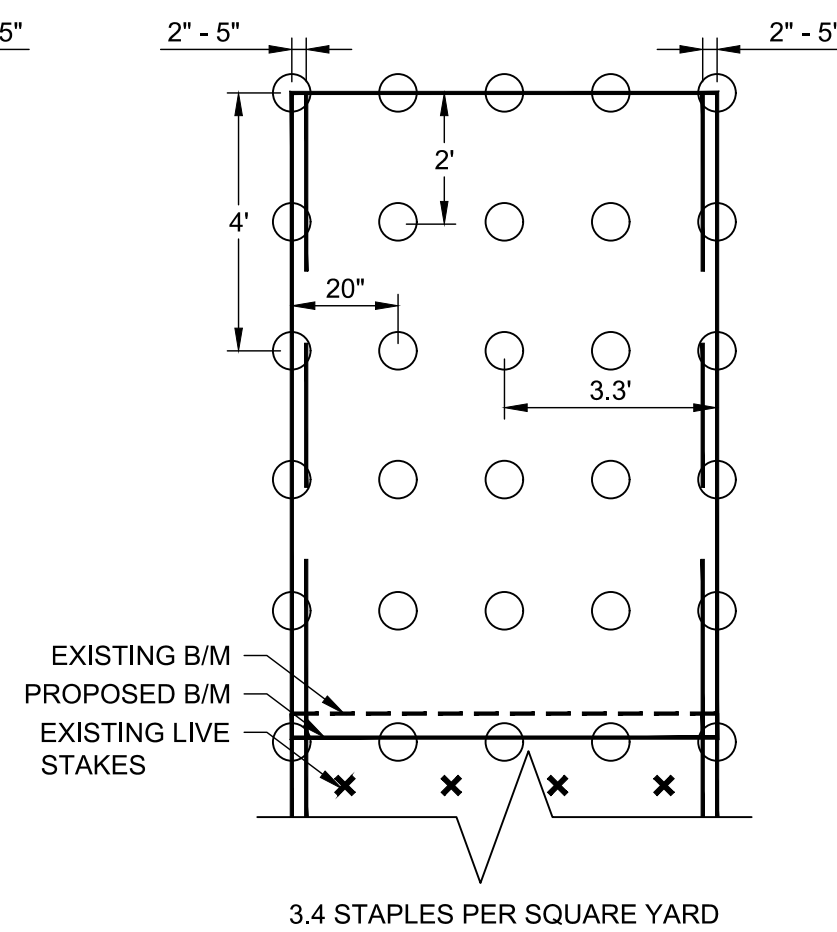
**STAPLE PATTERN NOTES:**

1. THE AECOM SITE REPRESENTATIVE AND CONTRACTOR SHALL SELECT THE APPROPRIATE STAPLE/STAKE TYPE AND LENGTH. STAPLES/STAKES SHALL BE SELECTED TO HOLD THE MAT IN INTIMATE CONTACT WITH THE SOIL SUBGRADE AND RESIST PULLOUT.
2. STAPLES AND/OR STAKES SHOULD BE AT LEAST 8 INCHES IN LENGTH AND WITH SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. LONGER STAPLES AND/OR STAKES MAY BE NEEDED IN LOOSER SOILS.

**2:1 SLOPES**



**1:1 SLOPES**



**1 SOIL STABILIZATION BLANKETS AND MATTING (B/M)**  
- VESCH STD 3.36 NTS

**SOIL STABILIZATION BLANKETS AND MATTING (B/M) NOTES:**  
VESCH STD & SPEC 3.36

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. PREPARE SOIL INCLUDING ANY NECESSARY APPLICATION OF SOIL AMENDMENTS SUCH AS LIME OR FERTILIZER.
2. BEGIN AT THE TOP OF THE SHORELINE BY ANCHORING THE B/M IN A 6 INCH DEEP BY 6 INCH WIDE TRENCH WITH APPROXIMATELY 12 INCHES OF B/M EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE B/M WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12 INCHES APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. COMPACT SOIL AND FOLD REMAINING 12 INCH PORTION OF B/M BACK OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12 INCHES ACROSS THE WIDTH OF THE B/M.
3. CONTRACTOR AND ENGINEER SHALL DISCUSS WHETHER TO ROLL THE B/M VERTICALLY DOWN THE SLOPE (3A) OR ACROSS THE SHORELINE SLOPE (3B) PRIOR TO INSTALLATION. B/M SHALL BE ROLLED IN A CONTROLLED FASHION. B/M SHALL NOT BE ALLOWED TO ROLL DOWN THE SLOPE ON ITS OWN. LAY B/M LOOSELY AND STAKE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH. ALL B/M MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. INSTALL B/M OVER ENTIRE PLANTING AREA. AVOID EXISTING TREES AND EXISTING STUMPS.
5. PLACE CONSECUTIVE B/M END OVER END (SHINGLE STYLE) WITH A 2 INCH TO 5 INCH OVERLAP. SEAM OVERLAPS SHOULD BE SHINGLED IN THE PREDOMINANT FLOW DIRECTION. STAPLE/STAKE THROUGH OVERLAPPED AREAS, APPROXIMATELY 12 INCHES APART ACROSS ENTIRE B/M WIDTH.
6. THE EDGES OF THE PROPOSED SHALL OVERLAP THE EXISTING BY 2 INCHES TO 5 INCHES. THE OVERLAP SHALL BE ANCHORED WITH STAPLES DRIVEN INTO BOTH THE EXISTING AND THE PROPOSED B/M. FOLLOW THE STAPLE PATTERN GUIDE FOR MORE DETAILS.
7. CONTRACTOR SHALL USE ECC-2B (BIODEGRADABLE DOUBLE COCONUT) MANUFACTURED BY EAST COAST EROSION CONTROL. ALTERNATIVE MATERIALS MUST BE APPROVED BY THE ENGINEER.



**PROJECT**

**ALLIED READY MIX PROPERTY BMAS**

SOUTH RIVER, RIGHT BANK, RRMS 1.33 TO 1.59  
AREA OF CONCERN 4 - IRM  
FORMER DUPONT WAYNESBORO SITE  
WAYNESBORO, VA

**CLIENT**

E.I. DU PONT DE NEMOURS AND COMPANY  
974 CENTRE ROAD  
CHESTNUT RUN PLAZA 730  
WILMINGTON, DE 19805  
www.dupont.com

**CONSULTANT**

AECOM  
625 WEST RIDGE PIKE, SUITE E-100  
CONSHOHOCKEN, PA 19428  
(610).832.3500 tel (610).832.3501 fax  
www.aecom.com

**REGISTRATION**

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION

**KEY PLAN**

**PROJECT NUMBER**

60552472

**SHEET TITLE**

POST CONSTRUCTION  
MAINTENACE DETAILS

**SHEET NUMBER**

D-204



## **Appendix B: Bank Repair Construction Daily Reports**



4051 Ogletown Rd, Suite 300  
 Newark, DE 19713  
 (302) 781-5900

DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/11/2019	
<b>DESCRIPTION:</b> Repairing slope				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 44 High : 71 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Brian Means	Summit Environmental	Site Supervisor	12	Yes	
Rob Melvin	Summit Environmental	Laborer	12	Yes	
Steve Sandafer	Summit Environmental	Laborer	12	Yes	
Daniel Rodriguez	Summit Environmental	Laborer	12	Yes	
Adam Broderson	Summit Environmental	Laborer	12	Yes	
Robert Truslow	Summit Environmental	Laborer	7.5	Yes	
Jacob Stephens	Summit Environmental	Laborer	2	Yes	
Total Labor Man-Hours			69.5		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP

DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 4/11/2019	
DESCRIPTION: Repairing slope			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pick-up Trucks - Two (2)	Summit		Crew Transport and hauling trailer	
Dump Trailer	United Rentals		Hauling planting substrate from Jones Hollow	
Concrete Vibrator	United Rentals		Aid in soil placement	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Planting substrate	From Jones Hollow	20	Cy	8 loads of planting substrate placed (approx. 2.5 cy per dump trailer load)
Erosion control blanket (Jute Mat)				60 linear feet placed
Coir Matting				160 linear feet placed
Coir Logs				7 coir logs placed



DAILY CONSTRUCTION REPORT	
<b>PROJECT AND SITE INFORMATION</b>	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/11/2019
<b>DESCRIPTION:</b> Repairing slope	<b>PROJECT NO.:</b> N/A
<p>700 – On-site. Conducted daily tailgate meeting with Summit personnel. Covered working on slopes, slip/trip/falls, ergonomics, manual material handling, biological hazards, and working in public park.</p> <p>0720 – 1930 – Reviewed HASP with two (2) new Summit laborers. Covered site orientation and quiz with new employees. Summit Supervisor and laborers went to Constitution park and began working on the repairs to the slope. The coir matting where erosion had occurred along the slope north of Primary BMA A was removed from the slope.</p> <p>Planting substrate material was transported to Constitution Park in a dump trailer. Summit laborers loaded wheel borrows with planting substrate and transferred material to the 12" geocell where needed.</p> <p>Summit completed the slope to approximately 60' to the south of the fish deck. The geocell was backfilled with planting substrate. Fertilizer and seed placed over the planting substrate.</p> <p>At approximately 3:00pm, Summit began working on covering the completed areas with the erosion control blanket and coir matting. Areas north of the fish platform completed were covered with straw after seeding and coir matting installed.</p> <p>1930 – Summit off-site for the day.</p>	
<b>SITE CONDITIONS</b>	
Mostly Sunny and warm	
<b>INCIDENTS</b>	
None	
<b>OTHER INFORMATION</b>	
Time Work Started / Completed: 0700 - 1930  Calculated Work Hours (Today & Project Total):  <i>69.5 hours today; 69.5 project hours total</i>	Prepared By: Pete Wray

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 4/11/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park

Date: 4/11/2019

Description:

Removal of the old coir matting along slope at Constitution Park





<p>Title: Constitution Park</p> <p>Date: 4/11/2019</p> <p>Description:</p> <p>Placing planting substrate in geocell at the northern area of Constitution Park.</p> <p>Old coir matting removed below the fish deck looking south.</p>		
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**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) | **DATE:** 4/11/2019

**SITE PHOTOGRAPHS**

<p>Title: Constitution Park</p> <p>Date: 4/11/2019</p> <p>Description:</p> <p>Geocell backfilled with planting substrate material, fertilizer, and seeded.</p>		
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Title: Constitution Park.

Date: 4/11/2019

Description:

Placing the erosion control blanket over the areas backfilled and seeded.





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/12/2019	
<b>DESCRIPTION:</b> Repairing slope				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b>		Low : 53	High : 67	Precipitation Accumulation: 0.10"	
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Brian Means	Summit Environmental	Site Supervisor	10	Yes	
Rob Schlachter	Summit Environmental	EO	3	Yes	
Rob Melvin	Summit Environmental	Laborer	10	Yes	
Steve Sandafer	Summit Environmental	Laborer	10	Yes	
Daniel Rodriguez	Summit Environmental	Laborer	10	Yes	
Adam Broderson	Summit Environmental	Laborer	10	Yes	
Robert Truslow	Summit Environmental	Laborer	10	Yes	
Total Labor Man-Hours			63		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP

DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 4/12/2019	
DESCRIPTION: Repairing slope			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pick-up Trucks - Two (2)	Summit		Crew Transport and hauling trailer (10 hrs each)	
Dump Trailer	United Rentals		Hauling planting substrate from Jones Hollow (10 hrs)	
JD 160 Excavator	United Rentals		Mixing and loading planting substrate (3 hours)	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Planting substrate	From Jones Hollow	15	Cy	6 loads of planting substrate placed (approx. 2.5 cy per dump trailer load)
Erosion control blanket (Jute Mat)				900 sf
Coir Matting				25 linear feet placed
Coir Logs				13 coir logs placed



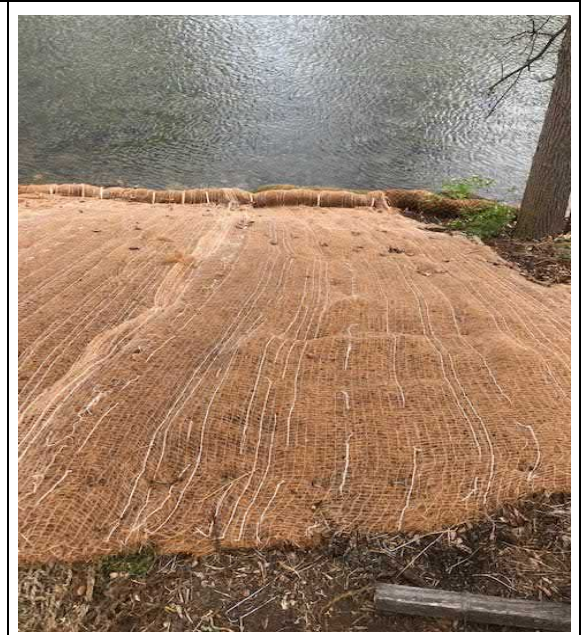
DAILY CONSTRUCTION REPORT	
PROJECT AND SITE INFORMATION	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/12/2019
<b>DESCRIPTION:</b> Repairing slope	<b>PROJECT NO.:</b> N/A
<p>700 – On-site. Conducted daily tailgate meeting with Summit personnel. Covered working on slopes, slip/trip/falls, ergonomics, manual material handling, biological hazards, and working in public park.</p> <p>0720 – 1730 – Summit Supervisor and laborers went to Constitution park and continued working on the repairs to the slope. Old coir matting had been removed to expose geocell where erosion had occurred. Geocell along slope which needed to be backfilled with planting substrate was completed. Once the geocell was backfilled, seed and fertilizer added and covered with ECB.</p> <p>Planting substrate material was transported to Constitution Park in a dump trailer. Summit laborers loaded wheel borrows with planting substrate and transferred material to the 12" geocell where needed.</p> <p>Summit completed the slope repairs to where the excavation ended in Primary BMA A north.</p> <p>1730 – Summit off-site for the day.</p>	
SITE CONDITIONS	
Mostly Sunny and warm	
INCIDENTS	
None	
OTHER INFORMATION	
Time Work Started / Completed: 0700 - 1730  Calculated Work Hours (Today & Project Total):  69.5 hours today; 69.5 project hours total	Prepared By: Pete Wray

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) | **DATE:** 4/12/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park  
 Date: 4/12/2019  
 Description:  
 Placing planting substrate material in geocell.  
 Erosion control jute mat installed on slopes.



Title: Constitution Park  
 Date: 4/12/2019  
 Description:  
 Planting substrate mix backfilled in exposed geocell.  
 Summit placing planting substrate in geocell along slope.





**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) | **DATE:** 4/12/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park  
 Date: 4/12/2019  
 Description:  
 Areas along slope covered with Erosion control matting after backfilled with planting substrate material, fertilizer, and seed.



Title: Constitution Park.  
 Date: 4/12/2019  
 Description:  
 Erosion control blanket over the areas backfilled and seeded.







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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/15/2019	
<b>DESCRIPTION:</b> Repairing slope				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b>		Low : 36	High : 57	Precipitation Accumulation: 0.00"	
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Brian Means	Summit Environmental	Site Supervisor	8	Yes	
Rob Melvin	Summit Environmental	Laborer	8	Yes	
Steve Sandafer	Summit Environmental	Laborer	8	Yes	
Daniel Rodriguez	Summit Environmental	Laborer	8	Yes	
Adam Broderson	Summit Environmental	Laborer	8	Yes	
Robert Truslow	Summit Environmental	Laborer	8	Yes	
Total Labor Man-Hours			48		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP




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DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 4/15/2019	
DESCRIPTION: Repairing slope			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pick-up Trucks - Two (2)	Summit		Crew Transport and hauling trailer (10 hrs each)	
Dump Trailer	United Rentals		Hauling planting substrate from Jones Hollow (10 hrs)	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Planting substrate	From Jones Hollow	7.5	Cy	3 loads of planting substrate placed (approx. 2.5 cy per dump trailer load)
Coir Matting				160 sq. yds. placed

<b>DAILY CONSTRUCTION REPORT</b>	
<b>PROJECT AND SITE INFORMATION</b>	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/15/2019
<b>DESCRIPTION:</b> Repairing slope	<b>PROJECT NO.:</b> N/A
<p>700 – On-site. Conducted daily tailgate meeting with Summit personnel. Covered working on slopes, slip/trip/falls, ergonomics, manual material handling, biological hazards, and working in public park.</p> <p>0720 – 1730 – Summit Supervisor and laborers went to Constitution park and continued working on the repairs to the slope. Repairs were made from the stone stairs to the south where the Southern LOD was located. Summit removed old coir matting and backfilled exposed geocell with planting substrate. Once the geocell was backfilled, seed and fertilizer added and covered with ECB.</p> <p>Planting substrate material was transported to Constitution Park in a dump trailer. Summit laborers loaded wheel borrows with planting substrate and transferred material to the 12" geocell where needed.</p> <p>There is still a few areas of exposed geocell which needs to be backfilled and covered by the Sycamore tree extending out into the river. Due to the water levels from weekend rain events, areas will need to be completed after river levels are lower.</p> <p>Received email from Dwayne Jones asking to have zip ties and tags removed from trees along slope which was completed by Summit Env. today.</p> <p>1730 – Summit off-site for the day.</p>	
<b>SITE CONDITIONS</b>	
Mostly Sunny and warm	
<b>INCIDENTS</b>	
None	
<b>OTHER INFORMATION</b>	



DAILY CONSTRUCTION REPORT	
<b>PROJECT AND SITE INFORMATION</b>	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/15/2019
<b>DESCRIPTION:</b> Repairing slope	<b>PROJECT NO.:</b> N/A
Time Work Started / Completed: 0700 - 1730	Prepared By: Pete Wray
Calculated Work Hours (Today & Project Total):	
<i>48 hours today; 117.5 project hours total</i>	

DAILY CONSTRUCTION REPORT	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/15/2019
<b>SITE PHOTOGRAPHS</b>	
<p>Title: Constitution Park</p> <p>Date: 4/15/2019</p> <p>Description:</p> <p>South of stone stairs. Summit placing coir matting over backfilled geocell, seed, fertilizer and straw.</p>	



Title: Constitution Park  
 Date: 4/15/2019  
 Description:  
 Area south of the stone stairs.



**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 4/15/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park  
 Date: 4/15/2019  
 Description:  
 Areas completed south of stone stairs.





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/26/2019	
<b>DESCRIPTION:</b> Repairing slope at Constitution Park				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b>		Low : 56	High : 71	Precipitation Accumulation: 0.12"	
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Brian Means	Summit Environmental	Supervisor/Driver	4.5	Yes	
Rob Melvin	Summit Environmental	Laborer	4.5	Yes	
Rob Truslow	Summit Environmental	Laborer	4.5	Yes	
Total Labor Man-Hours			13.5		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP



DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 4/26/2019	
DESCRIPTION: Repairing slope at Constitution Park			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pick-up Trucks - Two (1)	Summit		Crew Transport and hauling trailer (10 hrs each)	
Dump Trailer	United Rentals		Hauling planting substrate from Jones Hollow (10 hrs)	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Planting substrate	From Jones Hollow	2.5	Cy	1 load of planting substrate placed (approx. 2.5 cy per dump trailer load)
Coir Matting		900	Sq.ft.	900 sq. ft. placed
Coir logs		4	Each	

DAILY CONSTRUCTION REPORT	
PROJECT AND SITE INFORMATION	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/26/2019
<b>DESCRIPTION:</b> Repairing slope at Constitution Park	<b>PROJECT NO.:</b> N/A
<p>1300 – 11730 – Summit Supervisor and laborers went to Constitution Park to complete repair work along the bottom of slope south of where the stone stairs are located.</p> <p>Hauled 1 dump trailer of planting substrate material to fill in the exposed geocell at bottom of slope by the Sycamore Tree leaning over the river.</p> <p>After Summit placed the planting substrate material in geocell, area was seeded. Coir matting (Erosion Control Blanket) and coir logs were installed.</p> <p>Area completed and ready for Meadville to complete the installation of live stakes and plantings.</p> <p>Meadville to be on site Monday, April 29, 2019.</p> <p>1730 – Summit off-site.</p>	
SITE CONDITIONS	
Partly cloudy, light rain in afternoon.	
INCIDENTS	
None	
OTHER INFORMATION	
Time Work Started / Completed: 1230 - 1800  Calculated Work Hours (Today & Project Total):  <i>13.5 hours today; 131 project hours total</i>	Prepared By: Pete Wray

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 4/26/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park

Date: 4/26/2019

Description:

Completed repairs to bottom of slope south of the stone stairs in the southern area of Constitution Park.







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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/27/2019	
<b>DESCRIPTION:</b> Repairing slopes at ARM site				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 46 High : 71 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Rob Schlachter	Summit Environmental	Site Supervisor	10	Yes	
Brian Means	Summit Environmental	Driver/Site Supervisor	10	Yes	
Rob Melvin	Summit Environmental	Laborer	10	Yes	
Jake Stephens	Summit Environmental	Laborer	10	Yes	
Robert Truslow	Summit Environmental	Laborer	10	Yes	
Total Labor Man-Hours			50		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP

DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 4/27/2019	
DESCRIPTION: Repairing slopes at ARM site			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pick-up Trucks - Two (1)	Summit		Crew Transport and hauling trailer (10 hrs each)	
Dump Trailer	United Rentals		Hauling planting substrate from Jones Hollow (10 hrs)	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Planting substrate	From Jones Hollow	7.5	Cy	3 loads of planting substrate placed (approx. 2.5 cy per dump trailer load)
Coir Matting		2700	Sq.ft.	Coir matting installed along critical slope reduction area.

**DAILY CONSTRUCTION REPORT**

**PROJECT AND SITE INFORMATION**

<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/27/2019
<b>DESCRIPTION:</b> Repairing slopes at ARM site	<b>PROJECT NO.:</b> N/A

700 – On-site. Conducted daily tailgate meeting with Summit personnel. Covered working on slopes, biological hazards, and spotting truck and trailer while backing.

1300 – 1730 – Summit Supervisor, driver, and laborers went to ARM site to go over what repair work needed to be completed. Summit worked on filling the geocell in the areas where trees had been removed from previous high water events in Primary BMA A and B. Once the geocell was filled, summit seeded and patched area with new coir matting.

Summit worked on removal of the old coir mat in the critical slope reduction area from approximately stations 70+75 to 73.50. After removal of old coir matting, Summit worked on filling the geocell with planting substrate. A total of 3 loads of planting substrate transported to ARM site and placed. Areas were seeded and new coir matting installed.

Meadville expected to be on site Tuesday, April 29, 2019 to complete the necessary plantings.

1730 – Summit off-site for the day.

Monday, April 29, 2019 - Complete installation of coir matting

**SITE CONDITIONS**

Mostly Sunny and warm

**INCIDENTS**

None

**OTHER INFORMATION**

Time Work Started / Completed: 0700 - 1730	Prepared By: Pete Wray
Calculated Work Hours (Today & Project Total):	
<i>50 hours today; 50 project hours total</i>	



**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) | **DATE:** 4/27/2019

**SITE PHOTOGRAPHS**

Title: ARM Site  
 Date: 4/27/2019  
 Description:  
 Completed Repair to critical slope reduction area. Removed old coir matting from slope, backfilled geocell with planting substrate and seeded.



Title: ARM Site  
 Date: 4/27/2019  
 Description:  
 Critical slope reduction area covered with new coir matting (Erosion control blanket).  
 Areas patched in Primary BMA B.





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/29/2019	
<b>DESCRIPTION:</b> Repairing slopes at ARM site				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b>		Low : 46	High : 71	Precipitation Accumulation: 0.00"	
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Brian Means	Summit Environmental	Driver/Site Supervisor	6.5	Yes	
Rob Melvin	Summit Environmental	Laborer	6.5	Yes	
Steve Sandafur	Summit Environmental	Laborer	6.5	Yes	
Robert Truslow	Summit Environmental	Laborer	6.5	Yes	
Total Labor Man-Hours			26		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP

DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 4/29/2019	
DESCRIPTION: Repairing slopes at ARM site			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pick-up Trucks - Two (1)	Summit		Crew Transport and hauling trailer (10 hrs each)	
Dump Trailer	United Rentals		Hauling planting substrate from Jones Hollow (10 hrs)	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Planting substrate	From Jones Hollow	7.5	Cy	3 loads of planting substrate placed (approx. 2.5 cy per dump trailer load)
Coir Matting		2700	Sq.ft.	Coir matting installed along critical slope reduction area.





**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 4/29/2019

**SITE PHOTOGRAPHS**

Title: ARM Site  
Date: 4/29/2019  
Description:  
Completed repairs at ARM site.



Title: ARM Site  
Date: 4/27/2019  
Description:  
Critical slope reduction area completed





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/29/2019	
<b>DESCRIPTION:</b> Repairing slope at Constitution Park				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 42 High : 63 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Kevin Burkey	Meadville	Plantings at Constitution Park	5.5	Yes	
Austin Johnston	Meadville	Plantings at Constitution Park	5.5	Yes	
Total Labor Man-Hours			11		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP





DAILY CONSTRUCTION REPORT	
<b>PROJECT AND SITE INFORMATION</b>	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/29/2019
<b>DESCRIPTION:</b> Repairing slope at Constitution Park	<b>PROJECT NO.:</b> N/A
<p>1230 – 1800 – Meadville arrived on site. Conducted HASP review and site orientation w/ quiz.</p> <p>Meadville went to Constitution Park and began working on the plantings. Worked on installing live stakes at bottom of slope. Will complete Constitution Park on Tuesday, April 30, 2019.</p> <p>1800 – Meadville off-site.</p>	
<b>SITE CONDITIONS</b>	
Mostly Sunny and warm	
<b>INCIDENTS</b>	
None	
<b>OTHER INFORMATION</b>	
Time Work Started / Completed: 1230 - 1800  Calculated Work Hours (Today & Project Total):  <i>11 hours today; 142 project hours total</i>	Prepared By: Pete Wray



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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/30/2019	
<b>DESCRIPTION:</b> Repairing slope at ARM site				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 52 High : 83 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Kevin Burkey	Meadville	Plantings at Constitution Park	6	Yes	
Austin Johnston	Meadville	Plantings at Constitution Park	6	Yes	
Total Labor Man-Hours			12		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP





DAILY CONSTRUCTION REPORT	
PROJECT AND SITE INFORMATION	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/30/2019
<b>DESCRIPTION:</b> Repairing slope at ARM site	<b>PROJECT NO.:</b> N/A
<p>1200 – 1800 – Meadville began at ARM site. Discussed same hazards from morning tailgate meeting...slip/trip/falls, heat stress, and biological hazards.</p> <p>Meadville worked the afternoon and completed the installation of live stakes.</p> <p>Summit to hydroseed area on May 2, 2019.</p> <p>1800 – Meadville off-site.</p>	
SITE CONDITIONS	
Mostly Sunny and warm	
INCIDENTS	
None	
OTHER INFORMATION	
Time Work Started / Completed: 1200 - 1800	Prepared By: Pete Wray
Calculated Work Hours (Today & Project Total):	
<i>12 hours today</i>	



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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 4/30/2019	
<b>DESCRIPTION:</b> Repairing slope at Constitution Park				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 52 High : 83 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Kevin Burkey	Meadville	Plantings at Constitution Park	4.5	Yes	
Austin Johnston	Meadville	Plantings at Constitution Park	4.5	Yes	
Total Labor Man-Hours			9		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP





DAILY CONSTRUCTION REPORT	
PROJECT AND SITE INFORMATION	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 4/30/2019
<b>DESCRIPTION:</b> Repairing slope at Constitution Park	<b>PROJECT NO.:</b> N/A
<p>0730 – 1130 – Meadville arrived on site. Attended daily tailgate meeting in trailer. Discussed slip/trip/falls, heat stress, and biological hazards with them.</p> <p>Meadville went to Constitution Park to complete installation of the live stakes and plugs. Meadville completed site work at Constitution Park at 1130 hours.</p> <p>1130 – Meadville off-site.</p>	
SITE CONDITIONS	
Mostly Sunny and warm	
INCIDENTS	
None	
OTHER INFORMATION	
Time Work Started / Completed: 0700 - 1130  Calculated Work Hours (Today & Project Total):  <i>11 hours today</i>	Prepared By: Pete Wray

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) | **DATE:** 4/30/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park  
 Date: 4/30/2019  
 Description: Live stakes and plugs installed



Title: Constitution Park  
 Date: 4/30/2019  
 Description: Live Stakes and Plugs installed.





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 5/1/2019	
<b>DESCRIPTION:</b> Repairing slope at Constitution Park				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 52 High : 83 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Jake Stephens	Summit Environmental	Installing access for fisherman	4.5	Yes	
Rob Melvin	Summit Environmental	Installing access for fisherman	4.5	Yes	
Steve Sandafer	Summit Environmental	Installing access for fisherman	4.5	Yes	
Robert Truslow	Summit Environmental	Installing access for fisherman	4.5	Yes	
Total Labor Man-Hours			18		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP



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DAILY CONSTRUCTION REPORT				
PROJECT AND SITE INFORMATION				
PROJECT: South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)			DATE: 5/1/2019	
DESCRIPTION: Repairing slope at Constitution Park			PROJECT NO.: N/A	
EQUIPMENT LIST				
Equipment	Vendor/Model/Tag No.		Work Performed	
Pickup Truck			Crew transport	
Tag-a-long trailer			Material transport	
MATERIALS DELIVERED				
Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS
Crush-n-run stone	Jones Hollow	5	Tons	Filling geocell access path
Planting Substrate	Jones Hollow	2	Cy	Placing outside of geocell
3" Geocell		120	Sq. ft.	
Non-woven Geotextile		120	Sq. ft.	



DAILY CONSTRUCTION REPORT	
<b>PROJECT AND SITE INFORMATION</b>	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 5/1/2019
<b>DESCRIPTION:</b> Repairing slope at Constitution Park	<b>PROJECT NO.:</b> N/A
<p>1300 – 1730 – After morning progress meeting call, Summit Supervisor had laborers go to Constitution Park and create a walking path to river at the southern end of previous work activities.</p> <p>Summit laborers cleared vegetation for access. After clearing the brush, Summit installed approximately 120 sq.ft. of non-woven geotextile. On top the the geotextile, Summit laborers installed 3” geocell down the slope. After anchoring the geocell in place, Summit filled the geocell with crush-n-run stockpiled at Jones Hollow. Once the geocell was backfilled, Summit brought over load of planting substrate mixture and added on both sides of the access.</p> <p>Summit to perform hydroseeding of Constitution Park on May 2, 2019.</p> <p>1730 – Meadville off-site.</p>	
<b>SITE CONDITIONS</b>	
Mostly Sunny and warm	
<b>INCIDENTS</b>	
None	
<b>OTHER INFORMATION</b>	
Time Work Started / Completed: 1300 - 1730  Calculated Work Hours (Today & Project Total):  <i>18 hours today</i>	Prepared By: Pete Wray

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) | **DATE:** 5/1/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park

Date: 5/1/2019

Description: Summit clearing area for access path to river for fisherman.

Non-woven geotextile and 3" geocell placed down slope and anchored in place with rebar.

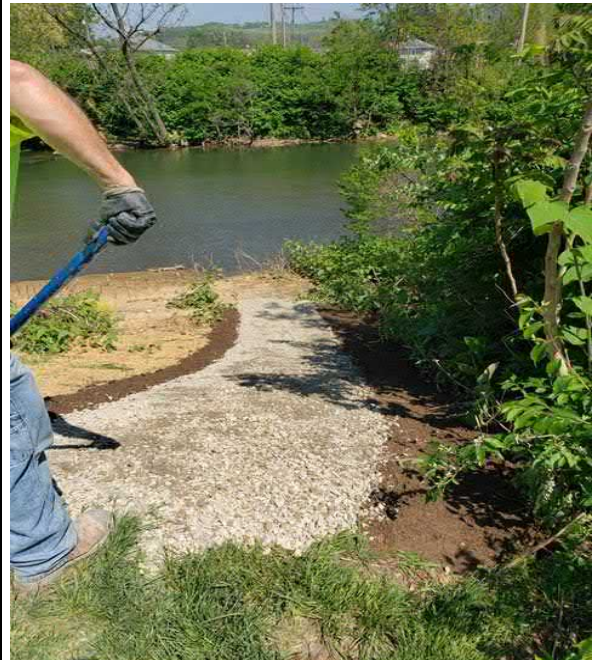


Title: Constitution Park

Date: 5/1/2019

Description: Crush-n-run stone placed in geocell.

Planting substrate added to both sides of geocell.





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 5/2/2019	
<b>DESCRIPTION:</b> Hydroseeding Constitution Park and ARM site				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 64 High : 84 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Rob Melvin	Summit Environmental	Hydroseeding Constitution Park and ARM site	6	Yes	
Steve Sandefur	Summit Environmental	Hydroseeding Constitution Park and ARM site	6	Yes	
Robert Truslow	Summit Environmental	Hydroseeding Constitution Park and ARM site	6	Yes	
Total Labor Man-Hours			18		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP



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**DAILY CONSTRUCTION REPORT**

<b>PROJECT AND SITE INFORMATION</b>	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 5/2/2019
<b>DESCRIPTION:</b> Hydroseeding Constitution Park and ARM site	<b>PROJECT NO.:</b> N/A

**EQUIPMENT LIST**

Equipment	Vendor/Model/Tag No.	Work Performed
Pickup Truck (1)		Transporting crew and Hydroseeder
Hydro-seeder		Hydroseeding Constitution Park and ARM site

**MATERIALS DELIVERED**

Material	Vendor	QTY	UOM	CONDITION / PURPOSE / COMMENTS



DAILY CONSTRUCTION REPORT	
PROJECT AND SITE INFORMATION	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 5/2/2019
<b>DESCRIPTION:</b> Hydroseeding Constitution Park and ARM site	<b>PROJECT NO.:</b> N/A
<p>1130 – 1730 – Summit Laborers worked on hydroseeding Constitution Park and ARM site with Flex-terra mix.</p> <p>Summit started at Constitution Park. Hydroseed mix applied to the entire Constitution Park area. After completing Constitution Park, Summit moved to the ARM site.</p> <p>Hydroseeding machine was filled 3 times during the day. Went with Summit Supervisor to take a look at the areas. At Constitution Park it appeared the application was applied light in areas. Summit Supervisor will have laborers reapply additional to Constitution Park.</p> <p>ARM site approximately 50 ft from completing.</p> <p>Summit to complete hydroseeding May 3, 2019.</p> <p>1730 – Summit off-site.</p>	
SITE CONDITIONS	
Mostly Sunny and warm	
INCIDENTS	
None	
OTHER INFORMATION	
Time Work Started / Completed: 1200 - 1800  Calculated Work Hours (Today & Project Total):  <i>18 hours today</i>	Prepared By: Pete Wray

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 5/2/2019

**SITE PHOTOGRAPHS**

Title: Constitution Park

Date: 5/2/2019

Description:

Hydroseeding the slopes after repairs made



Title: Constitution Park

Date: 5/2/2019

Description:

Areas hydroseeded.





**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 5/2/2019

**SITE PHOTOGRAPHS**

Title: ARM Site  
 Date: 5/2/2019  
 Description:  
 Summit Hydroseeding  
 the Critical Slope  
 Reduction area.



Title: ARM Site  
 Date: 5/2/2019  
 Description: Summit  
 Hydroseeding the  
 Critical Slope  
 Reduction area.





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DAILY CONSTRUCTION REPORT					
PROJECT AND SITE INFORMATION					
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)				<b>DATE:</b> 5/3/2019	
<b>DESCRIPTION:</b> Completion of Hydroseeding Constitution Park and ARM site				<b>PROJECT NO.:</b> N/A	
<b>CLIENT:</b> DuPont				<b>LOCATION:</b> Waynesboro, VA	
<b>CONTRACTOR(S):</b> Summit					
<b>WEATHER:</b> Low : 60 High : 83 Precipitation Accumulation: 0.00"					
AECOM PERSONNEL					
Name	Position	Work Performed	Hrs	Signed HASP	
Pete Wray	DSR	DSR – Contractor oversight	0	Yes	
Total AECOM Man-Hours			0		
SUBCONTRACTOR PERSONNEL					
Name	Company	Trade/Work Performed	Hrs	Signed HASP	
Rob Melvin	Summit Environmental	Hydroseeding Constitution Park and ARM site	6.5	Yes	
Steve Sandefur	Summit Environmental	Hydroseeding Constitution Park and ARM site	6.5	Yes	
Robert Truslow	Summit Environmental	Hydroseeding Constitution Park and ARM site	6.5	Yes	
Total Labor Man-Hours			19.5		
VISITOR'S NAME					
Name	Organization	Purpose of Visit	In	Out	Signed HASP





DAILY CONSTRUCTION REPORT	
PROJECT AND SITE INFORMATION	
<b>PROJECT:</b> South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures)	<b>DATE:</b> 5/3/2019
<b>DESCRIPTION:</b> Completion of Hydroseeding Constitution Park and ARM site	<b>PROJECT NO.:</b> N/A
<p>0700 – 1400 – Summit Laborers worked on completion of hydroseeding at Constitution Park and ARM site.</p> <p>Summit laborers filled the hydro-seeder twice (1 load at each location) and finished Hydro-seeding the ARM site and went back to Constitution Park and re-applied to areas where it had been sprayed previous day lightly.</p> <p>After completing, hydro-seeder was cleaned and flushed. Summit returned the hydroseeder and 2” pump to Sunbelt Rentals.</p> <p>Went to Constitution Park and inspected work to make sure was left clean.</p> <p>1400 – Summit off-site.</p>	
SITE CONDITIONS	
Mostly Sunny and warm	
INCIDENTS	
None	
OTHER INFORMATION	
Time Work Started / Completed: 0700 - 1400	Prepared By: Pete Wray
Calculated Work Hours (Today & Project Total):	
19.5 hours today	

**DAILY CONSTRUCTION REPORT**

**PROJECT:** South River Bank Stabilization – AOC 4 (Phase 1 Interim Measures) **DATE:** 5/2/2019

**SITE PHOTOGRAPHS**

Title: ARM Site  
Date: 5/3/2019  
Description:  
Hydroseeding the slopes after repairs made



Title: Constitution Park  
Date: 5/3/2019  
Description:  
Areas hydroseeded.



## **Appendix C: Construction Material Quantity Tables**

Attachment 1: Erosion Control Blanket (ECC-2B)

Attachment 2: Coir Mat (CM700 Woven Coir)

Attachment 3: ERNST ARM Custom Seed Mix



**Table 1 - Construction Material Quantities  
2019 Post-Construction Bank Repairs  
Constitution Park and Allied Ready Mix Bank Management Areas  
South River, Area of Concern 4, RRM's 0-2  
Former DuPont Waynesboro Site**

BMA	Material	Quantity	Unit
CP	Planting Substrate	17.5	CY
	Erosion Control Blanket <sup>1</sup>	400	SY
	Coir Mat <sup>2</sup>	255	SY
	8" Coir Log <sup>3</sup>	230	LF
	Non-woven Geotextile	13	SY
	3" Geocell	13	SY
	Crush N Run Stone	5	TON
	Live Stakes	*	*
	Hydroseed	*	*
ARM	Planting Substrate	17.5	CY
	Erosion Control Blanket <sup>1</sup>	400	SY
	Live Stakes	*	*
	Hydroseed	*	*

**Table Notes:**

(1) See Appendix C - Attachment 1 - Erosion Control Blanket (ECC-2B)

(2) See Appendix C - Attachment 2 - Coir Mat (CM700 Woven Coir)

\* = See Appendix C - Table 2 - Planting Material Quantities

ARM = Allied Ready Mix

BMA = Bank Management Area

CP = Constitution Park

CY = Cubic Yard

EA = Each

LF = Linear Feet

SF = Square Feet

TON = U.S. Short Ton

**Table 2 - Planting Material Quantities  
2019 Post-Construction Bank Repairs  
Constitution Park and Allied Ready Mix Bank Management Areas  
South River, Area of Concern 4, RRM's 0-2  
Former DuPont Waynesboro Site**

BMA	Type	Name	Quantity	Unit
CP	Plugs	Blueflag Iris	200	EA
		Blueflag Iris	200	EA
	Live Stakes	Red Osier Dogwood	400	EA
		Silky Dogwood	100	EA
		Nannyberry	100	EA
		Southern Arrow-wood	100	EA
		Black Elderberry	100	EA
	Seed	ERNMX-117	40	LBS/AC
ARM	Live Stakes	Red Osier Dogwood	300	EA
		Silky Dogwood	75	EA
		Nannyberry	75	EA
		Southern Arrow-wood	75	EA
		Black Elderberry	75	EA
	Seed	ERNMX-ARM Custom <sup>1</sup>	40	LBS/AC
	Seed	Ogle Oats	16	LBS/AC

**Table Notes:**

(1) See Appendix C - Attachment 3 - ERNMX ARM Custom

ARM = Allied Ready Mix

BMA = Bank Management Area

CP = Constitution Park

AC = Acre

EA = Each

LBS = Pounds



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## Material and Performance Specification

### ECC-2B™ Double Net Coconut Biodegradable Rolled Erosion Control Product

#### Description:

The ECC-2B™ is made with uniformly distributed 100% coconut fiber and two organic jute nets securely sewn together with biodegradable thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation. The ECC-2B™ has functional longevity of approximately 24 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 1:1 and medium to high flow channels. The ECC-2B™ meets Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

<b>Matrix:</b>	1	2
	100% Coconut	

<b>Netting:</b>	<b>Type</b>	<b>Net Color</b>
	Top: Organic Leno Weave Jute	Natural
	Middle: None	
	Bottom: Organic Leno Weave Jute	

<b>Net Opening:</b>	<b>Top</b>	<b>Middle</b>	<b>Bottom</b>
	0.5" x 1.0"		0.5" x 1.0"

<b>Thread:</b>	<b>Type</b>	<b>Color</b>
	Biodegradable Thread	Natural

<b>Roll Sizes:</b>	<b>Standard</b>		<b>"A" Size</b>		<b>Mega</b>	
Width:	7.5 ft	2.3 m	3.75 ft	1.1 m	15 ft	4.6 m
Length:	120 ft	36.6 m	240 ft	73.2 m	120 ft	36.6 m
Weight ±10%:	60 lbs	27.2 kg	60 lbs	27.2 kg	120 lbs	54.4 kg
Area:	100 yd <sup>2</sup>	83.6 m <sup>2</sup>	100 yd <sup>2</sup>	83.6 m <sup>2</sup>	200 yd <sup>2</sup>	167.2 m <sup>2</sup>
#/Pallet:	16		6		16	

#### Index Value Properties\*:

Property	Test Method	Typical	
Mass/Unit Area	ASTM D6475	9.50 oz/yd <sup>2</sup>	322.1 g/m <sup>2</sup>
Thickness	ASTM D6525	0.25 in	6.35 mm
Tensile Strength-MD	ASTM D6818	240 lb/ft	3.50 kN/m
Elongation-MD	ASTM D6818	11 %	
Tensile Strength-TD	ASTM D6818	164 lb/ft	2.39 kN/m
Elongation-TD	ASTM D6818	16.0 %	
Light Penetration	ASTM D6567	17 %	
Density / Specific Gravity	ASTM D792	N/A %	
Water Absorption	ASTM D1117	340 %	

\*May differ depending upon raw material variations

#### Slope Performance Design Values\*:

Property	Test Method	Value	
<b>C-Factors</b>	ASTM D6459	0.04	
<b>Slope Length (L)</b>	<b>≤ 3:1</b>	<b>3:1-2:1</b>	<b>≥ 2:1</b>
< 50 ft (15 m)	0.040	0.053	0.102
50 ft – 100 ft	0.060	0.084	0.120
>100 ft (30 m)	0.094	0.114	0.134

\*Large-Scale Results obtained by 3<sup>rd</sup> Party GAI Accredited Independent Laboratory

#### Bench-Scale Testing\* (NTPEP\*\*\*):

Test Method	Parameters	Results
	50mm (2in) / hr-30 min	SLR**=14.16
ECTC Method 2 Rainfall	100mm (4in) / hr-30 min	SLR**=18.25
	150mm (6in) / hr-30 min	SLR**=23.24

ECTC Method 3 Shear Resistance	Shear at .50 in soil loss	2.76 lb/ft <sup>2</sup>
ECTC Method 4 Germination	Top soil; Fescue; 21 day incubation	501 %

\*Bench scale tests should not be used for design purposes.

\*\*Soil Loss Ratio=Soil Loss Bare Soil/Soil Loss with RECP=1/C-Factor

\*\*\*The preceding test data excerpts were reproduced with the permission of AASHTO, however, this does not constitute endorsement or approval of the product, material or device by AASHTO

#### Channel Performance Design Values\*:

Property	Test Method	Value			
Unvegetated Shear Stress	ASTM D 6460	2.25	lbs/ft <sup>2</sup>	107.73	Pa
Unvegetated Velocity	ASTM D 6460	9.0	ft/s	2.74	m/s
Vegetated Shear Stress	NA	N/A	lbs/ft <sup>2</sup>	N/A	Pa
Vegetated Velocity	NA	N/A	ft/s	N/A	m/s
Manning's N (Value Represents a Range)		0.025			

\*Large-Scale Results obtained by 3<sup>rd</sup> Party GAI Accredited Independent Laboratory

The values presented are for guidance purposes and do not constitute the practice of engineering. East Coast Erosion Blankets LLC (ECEB) ascertains that at the time of manufacture, all information presented herein is accurate and reliable and falls within the ECEB manufacturing product specification variances. If the product does not meet the stated values and ECEB is notified in writing prior to installation, the product will be replaced at no cost to the purchaser. ECEB will not be held liable for any type of damage or losses, directly, or indirectly for failure of this product. Current revision supersedes all previous versions for this product.



Custom formulated to meet your erosion control needs.

# EARTHSHIELD™ NATURAL CM700 WOVEN COIR

EarthShield™ CM700 is a woven, open-mesh geotextile made from 100% natural and biodegradable Coir netting. Coir netting is installed on a surface to hold seed and soil intact during the establishment or vegetative cover. Coir mats are 100% biodegradable.

## SPECIFICATIONS:

The CM700 open-mesh woven fabric will utilize the following characteristics:

PROPERTY	TEST METHOD	MACHINE DIRECTION	CROSS MATCH DIRECTION
Tensile Strength (Dry)	ASTM D4595	77 lb/in	86 lb/in
Tensile Strength (Wet)	ASTM D4595	78 lb/in	87 lb/in
Grab Elongation	ASTM D4632	26%	26%
Elongation at Failure (Dry)	ASTM D4595	26%	26%
Elongation at Failure (Wet)	ASTM D4595	27%	27%
Apparent Opening Size (AOS)	ASTM D4751	0.59" x 0.67"	
Percent Open Area		49%	
Mass	ASTM D5261	700 gsm	
Thickness	ASTM D5199	0.36	

Values quoted above are the result of multiple tests conducted at an independent testing facility. CM700 meets or exceeds values listed.

<sup>1</sup> Values apply to both machine and cross-machine directions

## PACKAGING:

Roll Width	6.6 ft
Roll Length	164 ft.
Roll Area	120 yd <sup>2</sup>

Disclaimer: ACF Environmental assumes no liability for the completeness or accuracy of this information or the ultimate use of this information. This document should not be construed as engineering advice. Always consult the project engineer for project specific requirements. The end user assumes sole responsibility for the use of this information and product.



Appendix C - Attachment 3 - ERNST ARM Custom Seed Mix



**Ernst Conservation Seeds Inc**

8884 Mercer Pike  
 Meadville, PA 16335-9275  
 Phone (814) 336-2404; (800) 873-3321; Fax (814) 336-5191  
 www.ernstseed.com; sales@ernstseed.com

**BILL TO:**

Meadville Land Service Inc  
 17693 State Highway 285  
 Cochranon, PA 16314

**Phone** 814-337-1974  
**Fax** 814-333-4214  
**Email**

Customer ID	Customer ID	Shipping Method	URS Shipper
EM 062018 NH 1	MEAD002	PICKUP	
Quantity	UOM	Item Number	Description
0.000	EACH	WAYNESBORO ALLIED MI	
2.000	LB	AGRPER05	Autumn Bentgrass, PA Ecotype
4.000	LB	ANDGER01	Big Bluestem, 'Niagara'
0.400	LB	EUPFIS01	Joe Pye Weed, PA Ecotype
0.400	LB	HELPLE01	Purplehead Sneezeweed, VA Ecotype
2.000	LB	PANANC06	Beaked Panicgrass, SC Ecotype
4.000	LB	PANRIG01	Redtop Panicgrass, Coastal Plain NC Ecotype
0.800	LB	SENHEB01	Wild Senna, VA & WV Ecotype
4.000	LB	SORNUT26	Indiangrass, NC Ecotype
0.400	LB	VERGIG01	Giant Ironweed, PA Ecotype
5.000	LB	PANVIRO1	Switchgrass, 'Blackwell'
5.000	LB	PANCLA01	Deertongue, 'Tloga'
10.000	LB	ELYVIR01	Virginia Wildrye, PA Ecotype
2.000	LB	CARVUL01	Fox Sedge, PA Ecotype
0.000	EA	TOTAL	MIX NOTES

40lbs AM Acw

Prices quoted are firm for 30 days. Items quo delivery.

Checks received may be converted to  
may be withdrawn from your account.

Prices are F.O.B. Meadville. Items are subjec  
 DISCLAIMER: Seeds are labeled as required b  
 RETURNS: Individual items and Ernst Mixes e  
 made within 30 days of invoice date. No retu  
 fee on cancelled or returned bioengineering