Chesapeake Bay TMDL Action Plan

Phase III

General Permit No. VAR040107

Prepared for:
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Date: October 1, 2024

This document is developed consistent with the requirements of the General Virginia Pollutant Discharge Elimination System Permit for the Discharge of Stormwater from MS4s effective November 1, 2023, Part II.A.12.b.

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Table of Contents

Executive Summary 1
1.0 Introduction 2
2.0 MS4 Pollutant Discharge Characterization 3
2.1 Pollutant Loadings 3
2.2 Required Pollutant Reductions 3
3.0 Pollutant Reductions Achieved 5
3.1 Target - 5% of Cumulative Reduction 5
3.2 Target - 40% of Cumulative Reduction 5
4.0 Plan to Achieve Remainder of Cumulative (100%) Loading Reductions 7

Appendices

Appendix A – Public Comment
Appendix B – Mapping
Appendix C – JSRCC Lot ‘L’ and ‘M’ Stormwater Retrofit Site Development Plans
Appendix D – MOU with Henrico – JSRCC Parham Road Campus Stream Restoration Project
Appendix E – DEQ Nutrient Credit Acquisition Form

Executive Summary

J. Sargeant Reynolds Community College (JSRCC) is permitted to discharge stormwater from the college's municipal separate storm sewer systems (MS4s) at the Parham Road campus by maintaining coverage under the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small MS4s (MS4 General Permit). In part, the MS4 General Permit requires the college meet special conditions for the Chesapeake Bay Total Maximum Daily Load (TMDL). Included as a special condition is the development of the JSRCC Chesapeake Bay TMDL Action Plan (Action Plan) that, in part, identifies means and methods the college will employ to achieve reductions in total phosphorus (TP) and total nitrogen (TN) loadings discharged from the college's regulated campus. Permittees have been afforded three permit cycles, beginning with the 2013-2018 cycle, followed by the 2018-2023, and finally, the 2023-2028 cycle, to achieve 5%, an additional 35% and the cumulative 100% reductions, respectively. Required reductions are calculated using loading rates and percent-reduction values provided in the MS4 General Permit.

JSRCC successfully surpassed the pollutant reductions required during the previous permit cycle (40% cumulative) with the design and installation of a filtering manufactured treatment device (MTD) and purchase of nutrient credits, the latter in accordance with Part II.A.11 of the MS4 General Permit. It is noted the previous two permit cycles also required reductions for total suspended solids (TSS) and thus, TSS was included in the Request for Proposals to purchase nutrient credits. As a result of favorable TSS:TN and TSS:TP ratios, the nutrient credit purchase resulted in TN credit far exceeding the 100% cumulative TN reduction requirement and TP credit far exceeding the credit needed to achieve the 40% cumulative reduction. As a result, and combined with credit achieved with the MTD, JSRCC has achieved 278% and 93% of the 100% cumulative required reductions for TN and TP, respectively.

JSRCC's need to purchase nutrient credits resulted in delays of the implementation of a stream restoration project planned to be completed in partnership with Henrico County, partially on the JSRCC Parham Road campus. A Memorandum of Understanding credits JSRCC the 100% cumulative TP and TN reductions upon completion of the restoration project, anticipated to be completed during the 2023-2028 permit cycle. At the time of receipt of the restoration credits, JSRCC intends to work with the Department of Environmental Quality (DEQ) to release the current credits applied to the required TN and TP reductions so they are available to apply towards future development on campus.

1.0 Introduction

J. Sargeant Reynolds Community College (JSRCC) has developed, implements and enforces a municipal separate storm sewer system (MS4) program designed to reduce the discharge of pollutants from the college's municipal separate storm sewer systems (MS4s) to the maximum extent practicable (MEP) in accordance with the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small MS4s (MS4 General Permit). The purpose of the program is to protect water quality and to satisfy the appropriate water quality requirements of the State Water Control Law and its attendant regulations.

Compliance with the MS4 General Permit, in part, includes Special Condition associated with applicable total maximum daily loads (TMDLs) for the Chesapeake Bay. A requirement of the special conditions is the development of a Chesapeake Bay TMDL Action Plan to identify the means and methods the college will implement to achieve required total nitrogen (TN) and total phosphorus (TP) loadings discharged from the college's MS4s at the Parham Road campus. Permittees have been afforded three permit cycles, beginning with the 2013-2018 cycle, followed by the 2018-2023 cycle, and finally, the 2023-2028 cycle, to achieve 5%, an additional 35% and the cumulative 100% of required TP and TN loading reductions. Required reductions are calculated using loading rates and percent-reduction values provided in the MS4 General Permit. This Action Plan supersedes previous JSRCC Action Plans developed during the previous permit cycles and, as required by the MS4 General Permit, includes:

1. Loading and cumulative reduction calculations, as specified by the permit (**Section 2**).
2. Pollutant loading reductions achieved, including a list of BMPs to achieve reductions associated with the Chesapeake Bay TMDL, with dates implemented and reductions achieved (**Section 3**).
3. BMPs to be implemented to meet any remainder of the required cumulative reductions, including BMP type, project name, location, removal efficiencies, calculations of expected pollutant reductions, and an implementation schedule (**Section 4 and Appendix D**).
    - Identification of new or modified legal authorities implemented, or needing to be implemented, to achieve the required pollutant loading reductions (**Section 4**).
4. Summary of comments received as a result of an opportunity for public comment for no fewer than 15 days on any additional BMPs proposed in the third phase Chesapeake Bay TMDL Action Plan (**Appendix A**).

2.0 MS4 Pollutant Discharge Characterization

Pollutant loadings and cumulative reduction requirement calculations are provided in this section for the James River basin within the Chesapeake Bay watershed, within which JSRCC's MS4 systems discharges. The loading and required reduction calculations are determined using tables provided within the MS4 General Permit and are dependent on the regulated impervious and pervious area draining to the college's MS4, calculated as part of the JSRCC Phase II Action Plan and summarized in **Table 2.1**. Mapping of the college's MS4 is provided in **Appendix B**.

Table 2.1 Summary of impervious and pervious area for the JSRCC Parham Road campus (obtained from the JSRCC Phase II Chesapeake Bay TMDL Action Plan, by others).

MS4 Regulated Area (acres)	
Impervious	Pervious
24.47	26.03

2.1 Pollutant Loadings

Pollutant loadings are computed using the calculation sheet provided in the MS4 General Permit for the James River basin, within which the campus resides. The calculation sheets provide the loading rates, as pounds (lbs) per acre (ac) per year (yr), as reflected in **Table 2.2**, for computing the pollutant loadings discharged from the college's MS4.

Table 2.2 Parham Road campus loadings based on the James River Basin calculation sheet provided in the MS4 General Permit (rounding as specified in permit).

Pollutant	Subsource	Loading Rate (lbs/ac/yr)[1]	Area (acres)[2]	Load (lbs/yr)	Total Load (lbs/yr)
TN	Impervious	9.39	24.47	230	412
	Pervious	6.99	26.03	182	
TP	Impervious	1.76	24.47	43	56
	Pervious	0.50	26.03	13	

[1] Loadings from MS4 Geneal Permit, Table 3a (James River basin).

[2] Area served by the Parham Road campus MS4 within the 2010 Census Urbanized Area.

2.2 Required Pollutant Reductions

The required cumulative pollutant reductions are also computed using the values in the calculation sheets provided in the MS4 General Permit for the James River basin. Specifically, the calculation sheet provides the total percentage of the reduction in loadings required for the

L2 Scoping Run of the Chesapeake Bay Model, as reflected in **Table 2.3**. Additional pollutant reductions as a result of: (1) new sources initiating construction between July 1, 2009, through October 31, 2023, with total phosphorus loadings exceeding 0.45 lbs/acre/yr, or (2) grandfathered projects initiating construction after July 1, 2014, with total phosphorus loadings exceeding 0.45 lbs/acre/yr are not necessary since neither occurred on the Parham Road campus.

Table 2.3 Parham Road campus required load reductions based on the James River Basin calculation sheet provided in the MS4 General Permit (rounding as specified in permit).

Pollutant	Subsource	Load (lbs/yr) [1]	Total Load Reduction (%) [2]	Required Reduction by 2028 (lbs/yr) [3]	Total Load Reduction by 2028 (lbs/yr) [3]
TN	Impervious	230	9	21	32
	Pervious	182	6	11	
TP	Impervious	43	16	6.88	7.8
	Pervious	13	7.25	0.94	

[1] From Table 2.2.

[2] Percentage of total load reduction per the L2 Scoping Run of the Chesapeake Bay Model.

[3] Represents 100% of the total load reduction, rounded per permit instruction.

3.0 Pollutant Reductions Achieved

JSRCC's Phase II Chesapeake Bay TMDL Action Plans, by others, identified the means and methods to achieve the 5% and 40% cumulative pollutant reduction targets with design and installation of a filtering manufactured treatment device (MTD) and a stream restoration project to be implemented by Henrico County, partially on the JSRCC Parham Road campus. The following subsections present the total reductions achieved to address the required TN and TP reductions for the previous permit cycles.

3.1 Target - 5% of Cumulative Reduction

To achieve the initial 5% of the accumulation reductions, JSRCC had designed and implemented the installation of a filtering MTD to treat runoff from parking lot areas not previously receiving stormwater management. The design plans for the project, entitled, "J. Sargeant Reynolds Community College Lot 'L' and 'M' Stormwater Retrofit," dated June 29, 2018, are provided in **Appendix C**. The MTD was completed and incorporated into the college's stormwater facility database and receives annual inspections to identify maintenance needs to ensure continued functionality, as designed. To date, the MTD is in functioning condition and has not required maintenance, with the last inspection occurring on March 26, 2024. TN and TP reductions achieved with the MTD are provided in **Table 3.1** and exceeded the 5% reduction requirement target towards the 100% cumulative reductions.

Table 3.1 JSRCC 2013-2018 permit cycle compliance summary.

Pollutant	Reductions Required for 5% of Cumulative Reductions (lb./yr)[1]	Reduction Achieved from Filtering MTD (lb./yr)[2]
TN	1.60	5.72
TP	0.39	1.15

[1] Represents 5% of cumulative 100% reductions calculated in Table 2.3 (rounding per permit).
[2] MTD completed and online by June 2021 per Phase II Action Plan.

3.2 Target - 40% of Cumulative Reduction

JSRCC entered into a Memorandum of Understanding (MOU) with Henrico County that describes a partnership to implement a stream restoration project within the County, including a length of steam within the Parham Road campus. The MOU includes sharing of credits received

as a result of the restoration, including the full cumulative 100% reductions required to be achieved by JSRCC. JSRCC procured the preliminary stream restoration plans that provided TN and TP pollutant reduction estimates anticipated to be achieved with the project. The MOU states that the County is responsible for the construction and long-term maintenance of the project. The MOU is provided in **Appendix D** and includes additional detail of the agreement and project.

At the time of the execution of the MOU, the college anticipated the project to be completed prior to the end of the 2018-2023 permit cycle, which would ensure the 40% of the cumulative 100% reductions credits would be achieved during the permit cycle, as required by the MS4 General Permit. However, due to delays with the County, outside of control of the college, it was realized the project would not be completed by the end of the 2018-2023 permit cycle. Due to limited time and opportunity to implement other means or methods to achieve the remaining required 40% reduction target, JSRCC sought the purchase of nutrient credits to achieve the 40% target of the cumulative reductions. The MS4 Nutrient Credit Acquisition form is provided in **Appendix E** and resulting total current reductions achieved are listed in **Table 3.2**.

Table 3.2 Summary of JSRCC Chesapeake Bay TMDL reductions achieved.

Pollutant	Reductions Required for 40% of Cumulative Reductions (lb./yr)[1]	Reduction Achieved from Filtering MTD (lb./yr)	Reduction Achieved from Nutrient Credit Purchase (lb./yr)	Total Reductions Achieved (lb./yr)[2]
TN	13	5.72	77.91	83.63
TP	3.13	1.15	6.29	7.44

[1] Represents 40% of cumulative 100% reductions calculated in Table 2.3 (rounding per permit).

[2] Exceeds required 40% of cumulative 100% reductions.

It is observed from **Table 3.2** that nutrients credits purchased far exceeded those needed to achieve 40% of the cumulative 100% required for the Phase II Action Plan cycle. The exceedance occurred due to the nutrient bank with the lowest bid providing credits with a very favorable nutrient to total suspended solids (TSS) ratio. TSS was included in the bids due to reductions of TSS also required during the previous permit cycles. As a result of TSS being the limiting pollutant for the nutrient bank and the ratios of TSS:TN and TSS:TP, the credits received resulted in excess of those needed to achieve 40% of the cumulative 100% required.

4.0 Plan to Achieve Remainder of Cumulative (100%) Loading Reductions

JSRCC intends to receive the full 100% cumulative loading reductions for TN and TP from the stream restoration project partnership with Henrico County, as previously discussed in Section 3.2 and further described in **Appendix D**. Per a meeting between Mr. Travis Burgoyne, JSRCC Buildings and Grounds Manager, and Mr. John Newton, Henrico County Capital Project Manager, in June 2024, and per the County, the stream restoration project is anticipated to take place in the winter of 2025. Upon completion of the stream restoration project, the full 100% cumulative reductions will be credited to JSRCC. After receipt of the stream restoration credits, JSRCC will coordinate release of the credits currently applied to the Chesapeake Bay TMDL reductions from the MTD and the nutrient credit purchase to allow for use of those credits towards future campus development projects. A summary of the 100% cumulative reductions to be implemented this permit cycle is summarized in Table 4.1.

Table 4.1 Cumulative (100%) loading reduction compliance summary.

Pollutant	Total Reductions Required (lb./yr)[1]	Reduction to be Achieved (lb./yr)[2]	Practices to Achieve Reductions[2]
TN	32	32	Stream Restoration (see Appendix D)
TP	7.8	7.8	

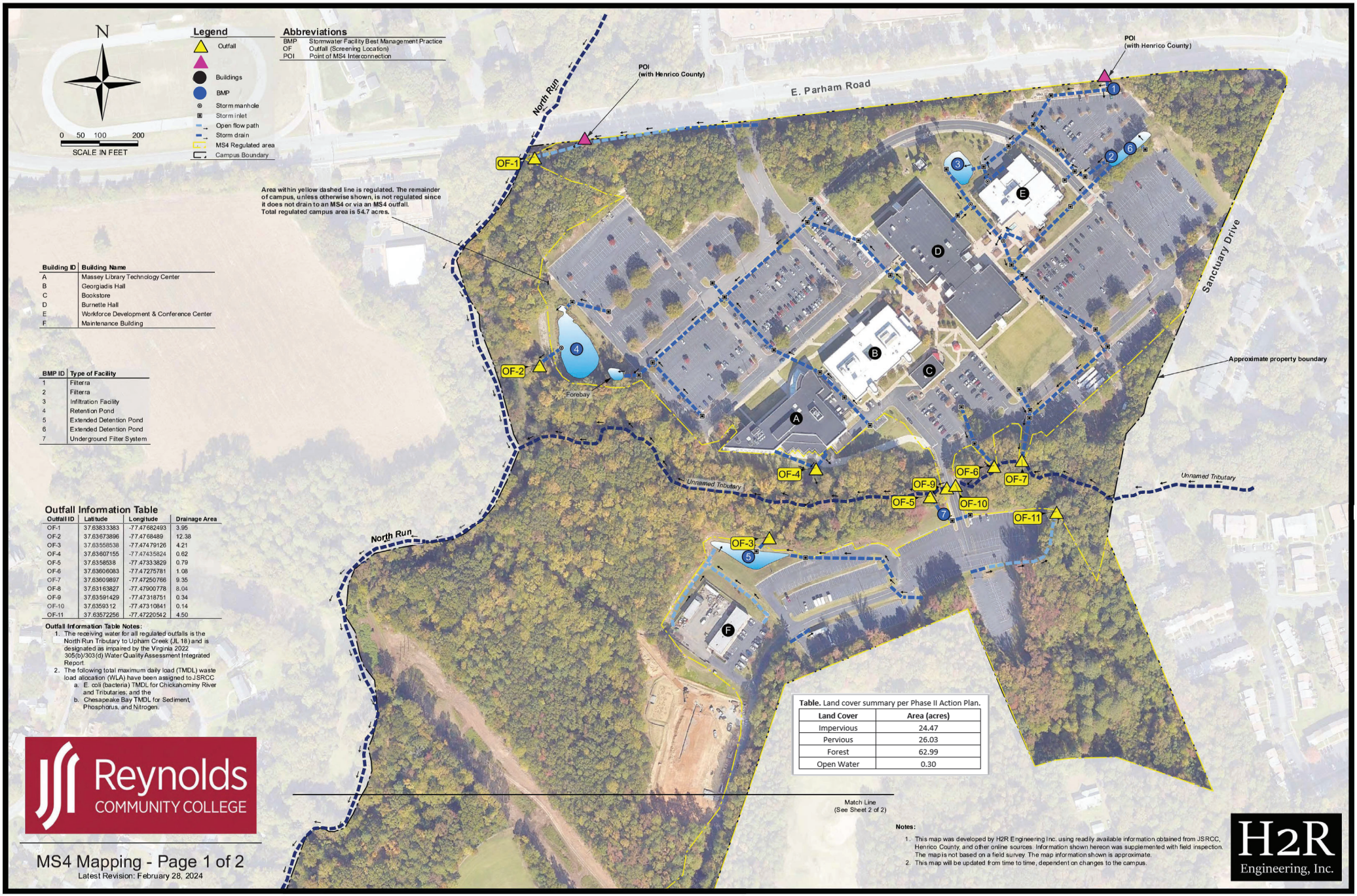
[1] Represents cumulative 100% reductions calculated in Table 2.3 (rounding per permit).

[2] Replaces credits previously achieved for the 40% of the cumulative reduction target (see Table 3.2). Intention to release credits achieved from MTD and nutrient credit purchase towards use with future campus development once stream restoration project complete.

JSRCC utilizes the legal authority provided by the laws and regulations of the Commonwealth of Virginia to control discharges to and from the college MS4s through the MS4 General Permit, college policies and specific contract language, as applicable. New legal authorities implemented, or needing to be implemented, to achieve the required pollutant loading reductions are associated with the agreements with Henrico County for the stream restoration project as provided in **Appendix D**.

Appendix A: Summary of any Comments Received
(This Action Plan is provided on the JSRCC Stormwater Webpage.
If any comments received, see comments and responses following this page)

Appendix B: Supporting Mapping



Building ID	Building Name
A	Massey Library Technology Center
B	Georgiadis Hall
C	Bookstore
D	Burnette Hall
E	Workforce Development & Conference Center
F	Maintenance Building

BMP ID	Type of Facility
1	Filterra
2	Filterra
3	Infiltration Facility
4	Retention Pond
5	Extended Detention Pond
6	Extended Detention Pond
7	Underground Filter System

Outfall Information Table

Outfall ID	Latitude	Longitude	Drainage Area
OF-1	37.63833383	-77.47682493	3.95
OF-2	37.63673896	-77.4768489	12.38
OF-3	37.63558538	-77.47479126	4.21
OF-4	37.63607155	-77.47435824	0.62
OF-5	37.6358538	-77.47333829	0.79
OF-6	37.63606083	-77.47275781	1.08
OF-7	37.63609897	-77.47250766	9.35
OF-8	37.63163827	-77.47900778	8.04
OF-9	37.63591429	-77.47318751	0.34
OF-10	37.6359312	-77.47310841	0.14
OF-11	37.63572256	-77.47220542	4.50

Outfall Information Table Notes:

1. The receiving water for all regulated outfalls is the North Run Tributary to Upham Creek (JL18) and is designated as impaired by the Virginia 2022 305(b)/303(d) Water Quality Assessment Integrated Report.
2. The following total maximum daily load (TMDL) waste load allocation (WLA) have been assigned to JSRCC
   a. E. coli (bacteria) TMDL for Chickahominy River and Tributaries, and the
   b. Chesapeake Bay TMDL for Sediment, Phosphorus, and Nitrogen.

Table. Land cover summary per Phase II Action Plan.

Land Cover	Area (acres)
Impervious	24.47
Pervious	26.03
Forest	62.99
Open Water	0.30

Notes:

1. This map was developed by H2R Engineering Inc. using readily available information obtained from JSRCC, Henrico County, and other online sources. Information shown hereon was supplemented with field inspection. The map is not based on a field survey. The map information shown is approximate.
2. This map will be updated from time to time, dependent on changes to the campus.

Reynolds COMMUNITY COLLEGE

H2R Engineering, Inc.

MS4 Mapping - Page 1 of 2

Latest Revision: February 28, 2024

Reynolds COMMUNITY COLLEGE

MS4 Mapping - Page 2 of 2

Latest Revision: February 28, 2024

H2R Engineering, Inc.

Appendix C: JSRCC Lot 'L' and 'M' Stormwater Retrofit Site Development Plans

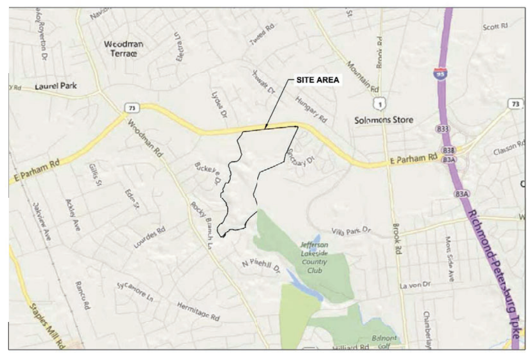
J. SARGEANT REYNOLDS COMMUNITY COLLEGE
LOT L & M STORMWATER RETROFIT

1651 EAST PARHAM ROAD
HENRICO COUNTY, VIRGINIA

06/29/2018

SHEET LIST TABLE

Sheet Number	Sheet Title
C0.0	COVER
C1.0	EXISTING CONDITIONS
C2.0	EROSION AND SEDIMENT CONTROL PLAN
C2.1	EROSION & SEDIMENT CONTROL NOTES & DETAILS
C2.2	EROSION & SEDIMENT CONTROL NOTES & DETAILS
C3.0	LAYOUT PLAN
C4.0	CONSTRUCTION NOTES & DETAILS



VICINITY MAP

SCALE: 1" = 2,000'

PROJECT SUMMARY

ADDRESS:	1651 EAST PARHAM ROAD
PARCEL ID:	779-756-2504
ZONING:	A-1
EXISTING USE:	COMMUNITY COLLEGE
PARCEL AREA:	108.486 ACRES
AREA OF DISTURBANCE:	0.07-ACRE
DATUM	NAVD88, NAD83

NUTRIENT REMOVALS PROVIDED BY THIS PROJECT

- TP REMOVAL (50%): 1.15 LBS/YEAR
- TN REMOVAL (35%): 5.72 LBS/YEAR
- TSS REMOVAL (80%): 571.9 LBS/YEAR

COMMONWEALTH OF VIRGINIA
AMELIA C. WEBINT
Lic. No. 049125
6/29/2018
PROFESSIONAL ENGINEER

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YOUR VISION ACHIEVED THROUGH OURS.

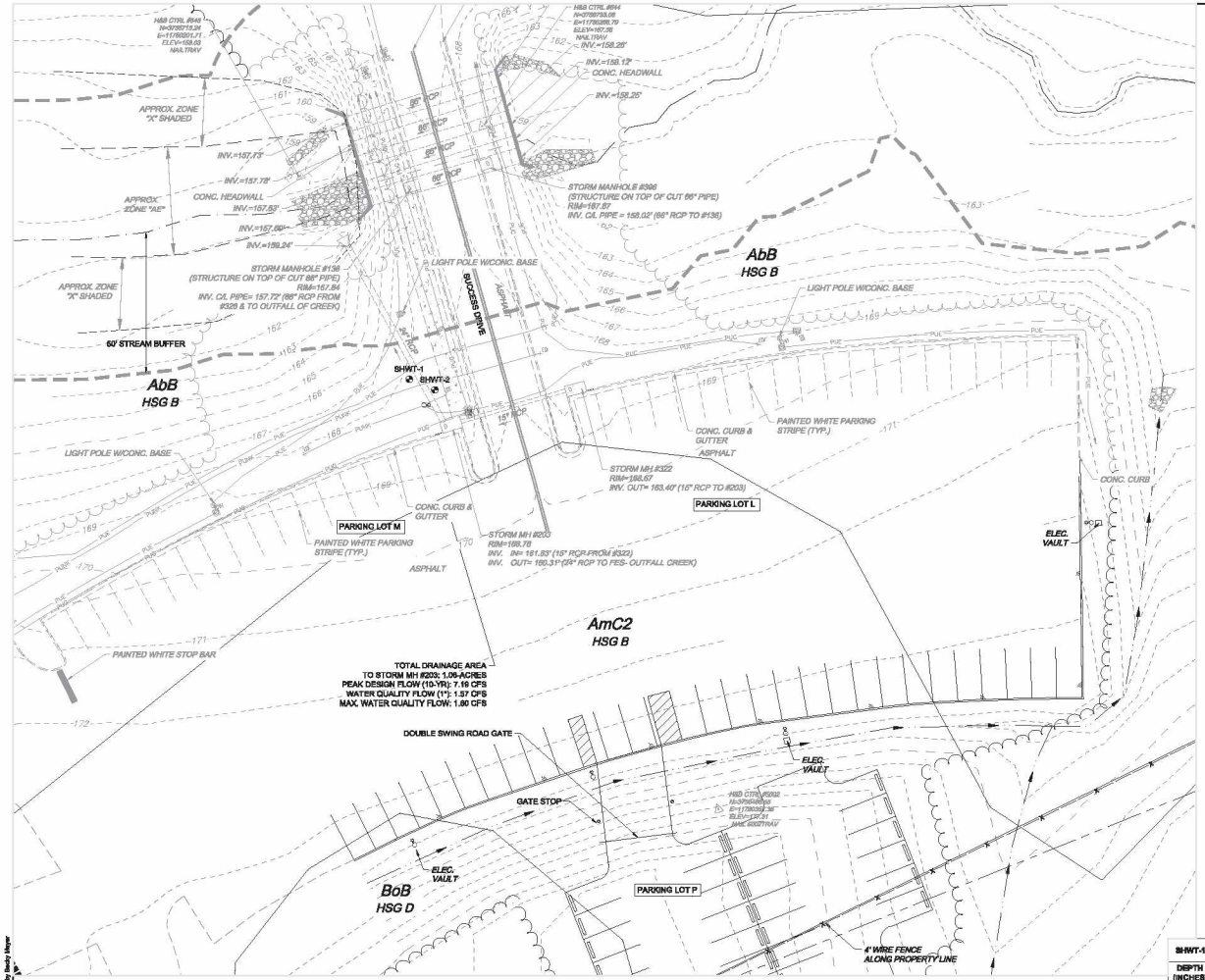
DATE	REVISION DESCRIPTION

DATE 06/29/2018
DRAWN BY B. MEYER
DESIGNED BY B. MEYER
CHECKED BY A. CREEL
SCALE 1"=2,000'

TIMMONS GROUP

JSRCC - LOT L & M STORMWATER RETROFIT
1651 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA
COVER

JOB NO. 40785
SHEET NO. C0.0



SCALE 1"=20'
0 20' 40'

NAD 83

EXISTING CONDITIONS LEGEND

- STORM SEWER MANHOLE
- GAS VALVE
- GAS TEST
- LIGHT POLE
- PAINTED UTILITY END OF INFORMATION
- CONTROL POINT
- ELECTRICAL BOX
- ELECTRICAL HAND HOLE
- FLARED END SECTION
- CATV PEDESTAL
- EXISTING RIPRAP
- EXISTING CONCRETE
- STORM PIPE
- PUC — PAINTED UNDERGROUND CABLE TV
- PUE — PAINTED UNDERGROUND ELECTRICITY
- PUG — PAINTED UNDERGROUND GAS
- PUEX — PAINTED UNDERGROUND UNKNOWN UTILITY
- EXISTING TREELINE
- 200 — EXISTING CONTOUR
- SHWT-1 — SOIL BORING LOCATIONS
- EXISTING 50' STREAM BUFFER

NOTES:

1. INVERTS FOR PIPES AND STRUCTURES SHOWN HEREON ARE BASED ON FIELD MEASUREMENTS, HOWEVER THEY SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
2. PIPE SIZES, MATERIAL TYPE AND INVERT ELEVATIONS AS INDICATED ARE BASED UPON OBSERVATIONS MADE ABOVE GROUND. NO MEASUREMENTS HAVE BEEN PERFORMED BY PERSONNEL IN A CONFINED SPACE SITUATION.
3. EXISTING GROUND SURFACE LOCATION PERFORMED BY CONVENTIONAL INSTRUMENT SURVEY.
4. HORIZONTAL (NAD'83) AND VERTICAL (NAVD'88) DATUM ESTABLISHED THROUGH REAL TIME KINEMATIC (RTK) GPS OBSERVATIONS ON 11-16-17 DIFFERENTIAL CORRECTIONS WERE DERIVED FROM NATIONAL GEODETIC SURVEY (NGS) CONTINUALLY OPERATING REFERENCE STATION (CORS) *VAAD. COORDINATE VALUES, IF SHOWN HEREON, ARE BASED ON VIRGINIA STATE GRID, SOUTH ZONE.
5. UNDERGROUND UTILITIES WERE DESIGNATED (PAINTED) BY ACCUMARK ON 11-21-17. H & S SURVEYING AND MAPPING, LLC HAS FIELD LOCATED THE DESIGNATED LINES AS PAINTED AND IS NOT RESPONSIBLE FOR THE ACCURACY OF THE PAINT DESIGNATION WITH RESPECT TO THE EXISTING UTILITY. UTILITY INFORMATION ON THIS DRAWING WILL NEED TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION. INDIVIDUALS ARE REQUIRED BY VIRGINIA LAW TO CONTACT MISS UTILITY OF VIRGINIA AT 1-800-552-7001 (OR 811) 2 BUSINESS DAYS (48 HOURS) PRIOR TO CONSTRUCTION OR EXCAVATION ACTIVITIES.
6. THE PROPERTY SHOWN HEREON FALLS IN THE FOLLOWING FLOOD HAZARD ZONES: "X"(UNSHADED)-AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD PLAIN, "X"(SHADED)-AREAS IN THE 0.2% ANNUAL CHANGE FLOOD PLAIN, AND "AE ELEVATION"-BASE FLOOD ELEVATIONS DETERMINED (NAVD'88)- AE SHADED MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS . THE APPROXIMATE BOUNDARY LIMITS OF THESE AREAS ARE SHOWN GRAPHICALLY. IF THEY FALL WITHIN THE LIMITS OF THIS SURVEY. AS SCALED FROM FEMA FLOOD INSURANCE RATE MAP, MAP NUMBER 51087C0089G, EFFECTIVE DATE: DECEMBER 16, 2007..
7. NO PROPERTY LINES ARE SHOWN HEREON AS A PART OF THIS SURVEY.
8. THIS SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF ALISON W. HANSON, LS FROM AN ACTUAL GROUND SURVEY MADE UNDER HER SUPERVISION. THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON 11-17-17. THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

SOIL TESTING NOTES:

1. SOIL DATA TAKEN FROM FIELD INVESTIGATION COMPLETED BY TIMMONS GROUP ON MARCH 23, 2018 TO PERFORM SEASONAL HIGH-WATER TABLE ESTIMATES (SHWT) AND HYDROLOGIC SOIL GROUPS.
2. SEASONAL HIGH-WATER TABLES WERE NOT FOUND TO BE PRESENT IN EITHER BORINGS (SHWT-1 AND SHWT-2).
3. THE BORING DEPTHS WERE COMPLETED TO A DEPTH OF 66 INCHES BELOW GROUND SURFACE (BGS) AT SHWT-1 AND 66 INCHES BGS AT SHWT-2.
4. THE SOIL HORIZON AT SHWT-1 WAS FOUND TO CONSIST OF FILL MATERIAL TO A DEPTH OF 55 INCHES BGS, AT WHICH POINT AUGER REFUSAL WAS ENCOUNTERED.
5. THE DEPTH TO REGIONAL HIGH WATER TABLE WAS 60 INCHES BGS AT SHWT-2.

SOIL BORING PROFILES & SEASONAL HIGH WATER TABLE ESTIMATES

SHWT-1	MATRIX		MOTTLE			TEXTURE	REMARKS
DEPTH (INCHES)	COLOR	%	COLOR	%	TYPE		
0-24	10YR 4/3	80	10YR 5/2	20	C	SCL	FILL
24-36	10YR 5/3	60	7.5YR 3/4	40	C	SCL	FILL; PETROLEUM SMELL
36-46	10YR 5/1	50	10YR 4/6	50	D	SC	FILL; BLACK CHARRED MATERIAL
46-48	10YR 2/1				N/A	ORGANIC	FILL; STRONG PETROLEUM SMELL
48-55	10YR 6/2	60	10YR 5/1	40	C	SC	AUGER REFUSAL
55							FILL MATERIAL FROM 0-55", THEN AUGER REFUSAL. NO WATER TABLE FOUND.

COMMENTS: BGS = BELOW GROUND SURFACE; TEXTURES: L=LOAM, C=CLAY, S=SAND, CL=CLAY LOAM, SIL=SILT LOAM, SC=SANDY CLAY, SICL=SILTY CLAY LOAM, SCL=SANDY CLAY LOAM, LS=LOAMY SAND, FSL=FINE SANDY LOAM, SL=SANDY LOAM, COS=COARSE SAND, FS=FINE SAND; MOTTLE TYPE: C=CONCENTRATIONS AND D=DEPLETIONS.

SHWT-2	MATRIX		MOTTLE			TEXTURE	REMARKS
DEPTH (INCHES)	COLOR	%	COLOR	%	TYPE		
0-24	10YR 4/3	80	10YR 5/2	20	C	SCL	FILL
24-60	10YR 5/6	60	5YR 5/6	30	D	SC	
			10YR 8/6	20			
60-66	7.5YR 5/1				C	SC	REGIONAL WATER TABLE AT 60 INCHES BGS (BASED ON OBSERVED WATER TABLE ON 03/23/2018 AND SOIL MORPHOLOGY).
66-72	10YR 6/1	80	10YR 5/6	20	C	SCL	
72-96	10YR 6/1	90	10YR 5/8	10	C	SL	

COMMENTS: BGS = BELOW GROUND SURFACE; TEXTURES: L=LOAM, C=CLAY, S=SAND, CL=CLAY LOAM, SIL=SILT LOAM, SC=SANDY CLAY, SICL=SILTY CLAY LOAM, SCL=SANDY CLAY LOAM, LS=LOAMY SAND, FSL=FINE SANDY LOAM, SL=SANDY LOAM, COS=COARSE SAND, FS=FINE SAND; MOTTLE TYPE: C=CONCENTRATIONS AND D=DEPLETIONS.

HYDROLOGIC SOIL GROUPS (SOIL BORING RESULTS)

DEPTH (FT) BGS	SHWT-1	SHWT-2
0 -2.0	C	C
2.0 - 3.0	C	D
3.0 - 4.0	D	D
4.0 - 5.0	D	D
5.0 - 7.0	N/A	C
7.0 - 8.0	N/A	C

COMMONWEALTH OF VIRGINIA
AMELIA C. WEHUNT
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6/29/2018
PROFESSIONAL ENGINEER

THIS DRAWING PREPARED BY THE
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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION

DATE: 06/29/2018
DRAWN BY: B. MEYER
DESIGNED BY: B. MEYER
CHECKED BY: A. CREFI
SCALE: 1"=20'

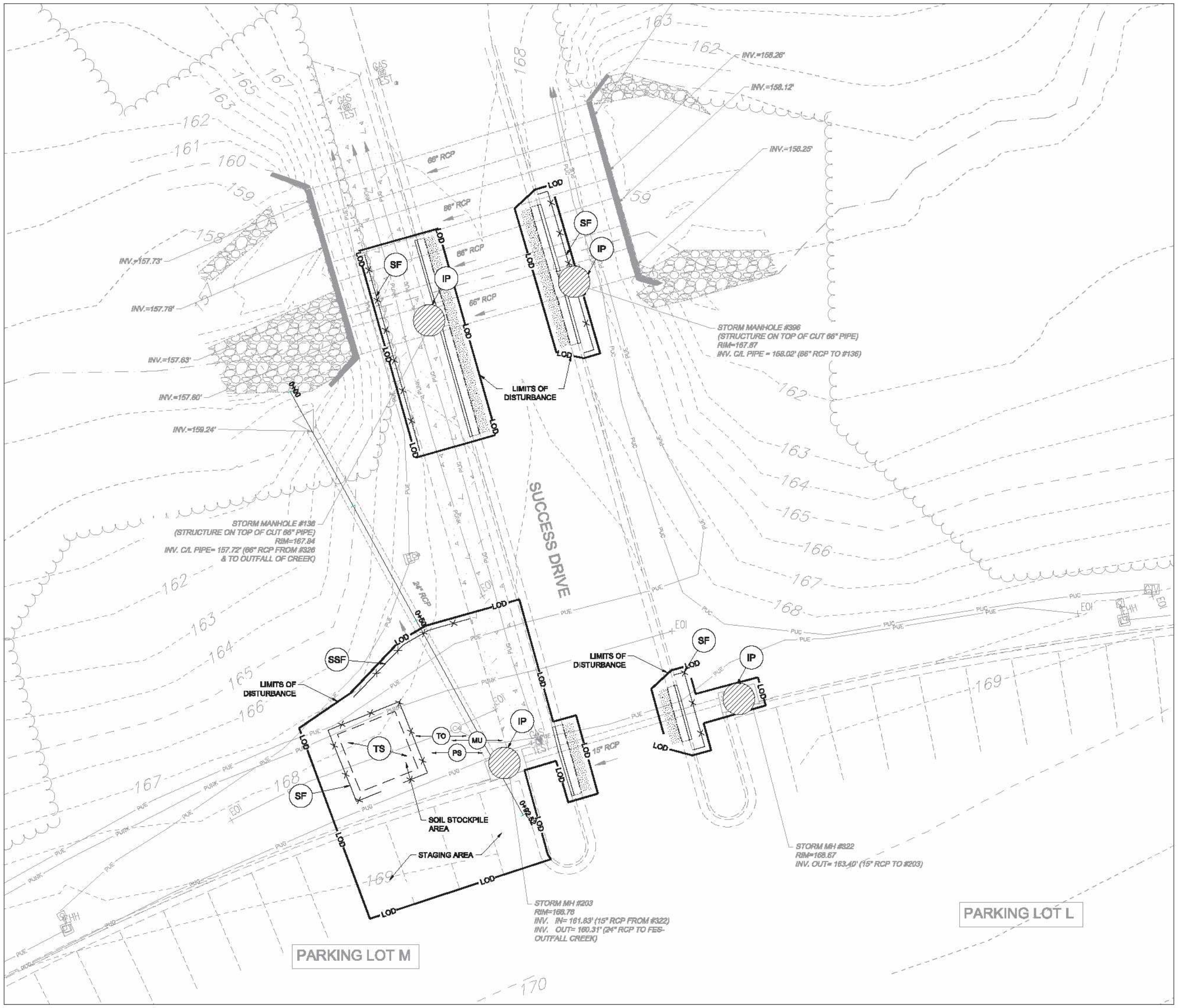
TIMMONS GROUP

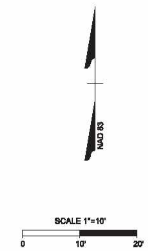
JSRCC - LOT L & M STORMWATER RETROFIT

1551 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA

EXISTING CONDITIONS

JOB NO. 40785
SHEET NO. C1.0





EROSION CONTROL LEGEND

LABEL	SYMBOL	STD. NAME	SPEC.#	QUANTITY
CE	CE	CONSTRUCTION ENTRANCE	3.02	1 EA
SF	—×—×—	SILT FENCE	3.05	150 LF
SSF	—××—	SUPER SILT FENCE	3.05	30 LF
IP	(hatched circle)	INLET PROTECTION	3.07	4 EA
TO	←TO→	TOPSOILING	3.30	100 SY
TS	←TS→	TEMPORARY SEEDING	3.31	100 SY
PS	←PS→	PERMANENT SEEDING	3.32	100 SY
MU	←MU→	MULCHING	3.35	100 SY
—LOD—		LIMITS OF DISTURBANCE		

EROSION CONTROL SEQUENCE

1. A PRE-CONSTRUCTION MEETING IS MANDATORY BEFORE ANY WORK COMMENCES ON SITE. CONTACT JSRCC AND THE PROJECT ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL NOTES & DETAILS.
2. INSTALL INLET PROTECTION AND SILT FENCE AS SHOWN ON THIS SHEET. SILT FENCE SHALL BE INSTALLED ON THE PERIMETER OF ALL STOCKPILE/STAGING AREAS. STOCKPILE/STAGING AREAS TO REMAIN ON SITE UNTIL MAJOR WORK AREAS ARE COMPLETE.
3. BEFORE ANY DEMOLITION MAY BEGIN, THE INSTALLATION OF THE SILT FENCE AND INLET PROTECTION MUST BE COMPLETE.
4. SILT FENCE SHALL BE INSTALLED IN ALL EXISTING GRASSY AREAS LOCATED EITHER ON THE BACK OF CURB OR DOWNGRADIENT OF PROPOSED GRADING. KEEP MUD AND OTHER MATERIALS OFF OF PUBLIC ROADS AND PARKING LOTS AT ALL TIMES.
5. CLEAR TO THE LIMITS OF DISTURBANCE. NO LAND DISTURBANCE OUTSIDE THE PRELIMINARY LIMITS OF DISTURBANCE SHALL TAKE PLACE WITHOUT AUTHORIZATION BY THE OWNER/ENGINEER.
6. NO EROSION CONTROL MEASURES CAN BE REMOVED UNTIL APPROVED BY THE PROJECT ENGINEER.

COMMONWEALTH OF VIRGINIA
AMELIA C. WERUNT
Lic. No. 049825
6/29/2018
PROFESSIONAL ENGINEER

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DATE	REVISION DESCRIPTION

YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP

DATE	06/29/2018
DRAWN BY	B. MEYER
DESIGNED BY	B. MEYER
CHECKED BY	A. CREEL
SCALE	1"=10'

JSRCC - LOT L & M STORMWATER RETROFIT

1651 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA

EROSION AND SEDIMENT CONTROL PLAN

JOB NO. 40785

SHEET NO. C2.0

L:\30\40785-JSRCC_Bonds\Sheets\C40785-C2.0-ERO1.dwg | Plotted on 6/28/2018 8:53 AM | by Becky Meyer

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT IS LOCATED AT THE J. SARGEANT REYNOLDS COMMUNITY COLLEGE, EAST PARHAM ROAD CAMPUS, IN THE CITY OF RICHMOND. THIS PROJECT IS THE INSTALLATION OF STORMWATER RETROFIT MEASURES IN THE FORM OF A CONTECH JELLYFISH (OR APPROVED EQUAL) STORMWATER FILTER UNIT AT AN EXISTING PARKING AREA AND THE REPLACEMENT OF DAMAGED CURB AND GUTTER SECTIONS. THE TOTAL LIMITS OF DISTURBANCE FOR THIS PROJECT IS 0.07-ACRE.

EXISTING SITE CONDITIONS
THE SITE CONSISTS OF TWO ADJOINED PARKING LOTS ("L" AND "M") LOCATED AT THE SOUTHERN END OF THE CAMPUS. ACCESS TO THE LOTS IS VIA SUCCESS DRIVE, A BITUMINOUS PAVED ROAD THAT CROSSES AN UNNAMED WATERCOURSE THAT TRANSECTS THE CAMPUS. BOTH LOTS ARE PAVED, WITH CONCRETE CURB AND GUTTER ALONG THE NORTHERN PERIMETER. TWO DRAINAGE INLETS COLLECT STORMWATER RUNOFF AND DISCHARGE VIA A 24" RCP TO THE WATERCOURSE. TO THE NORTH OF THE PARKING LOT, THE SITE IS CHARACTERIZED BY LAWN TRANSITIONING TO RIPARIAN BUFFER ALONG THE WATERCOURSE.

ADJACENT SITE
THE SITE IS BOUND TO THE NORTH BY EAST PARHAM ROAD; TO THE WEST BY THE NORTH RUN WATERCOURSE; TO THE SOUTH BY THE JEFFERSON LAKESIDE COUNTRY CLUB; AND TO THE EAST BY THE RIVER VISTA RESIDENTIAL DEVELOPMENT.

OFF-SITE AREAS
OFF-SITE BORROW IS NOT ANTICIPATED FOR THE CONSTRUCTION OF THIS PROJECT.

SOILS
ACCORDING TO THE NRCS WEB SOIL SURVEY MAPPING, THE SITE IS UNDERLAIN BY THREE SOIL TYPES. SOILS MAPPING HAS BEEN INCLUDED ON THE EXISTING CONDITIONS SHEET C1.0. THE PREDOMINANT SOILS ON THE PROJECT SITE ARE:

MAP UNIT: AbB - ABELL FINE SANDY LOAM, 2 TO 6 PERCENT SLOPES
(HYDROLOGIC SOIL GROUP B)

COMPONENT: ABELL (85%)

THE ABELL COMPONENT MAKES UP 85 PERCENT OF THE MAP UNIT. SLOPES ARE 2 TO 6 PERCENT. THIS COMPONENT IS ON DRAINAGEWAYS AND PIEDMONTS. THE PARENT MATERIAL CONSISTS OF LOCAL ALLUVIUM. DEPTH TO A ROOT RESTRICTIVE LAYER IS GREATER THAN 60 INCHES. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES IS MODERATE. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS OCCASIONALLY FLOODED. IT IS NOT PONDED. A SEASONAL ZONE OF WATER SATURATION IS AT 49 INCHES DURING JANUARY, FEBRUARY, MARCH, DECEMBER. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 2 PERCENT. NONIRRIGATED LAND CAPABILITY CLASSIFICATION IS 2w. THIS SOIL DOES NOT MEET HYDRIC CRITERIA.

MAP UNIT: AmC2 - APPLING FIND SANDY LOAM, 6 TO 15 PERCENT SLOPES, ERODED
(HYDROLOGIC SOIL GROUP B)

COMPONENTS: APPLING (85%)

THE APPLING COMPONENT MAKES UP 85 PERCENT OF THE MAP UNIT. SLOPES ARE 2 TO 6 PERCENT. THIS COMPONENT IS ON DRAINAGEWAYS AND PIEDMONTS. THE PARENT MATERIAL CONSISTS OF LOCAL ALLUVIUM. DEPTH TO A ROOT RESTRICTIVE LAYER IS GREATER THAN 60 INCHES. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES IS MODERATE. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS OCCASIONALLY FLOODED. IT IS NOT PONDED. THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 1 PERCENT. NONIRRIGATED LAND CAPABILITY CLASSIFICATION IS 3e. THIS SOIL DOES NOT MEET HYDRIC CRITERIA.

MAP UNIT: BoB - BOURNE FINE SANDY LOAM, 2 TO 6 PERCENT SLOPES
(HYDROLOGIC SOIL GROUP D)

COMPONENTS: BOURNE (85%)

THE BOURNE COMPONENT MAKES UP 85 PERCENT OF THE MAP UNIT. SLOPES ARE 2 TO 6 PERCENT. THIS COMPONENT IS ON MARINE TERRACES ON COASTAL PLAINS. THE PARENT MATERIAL CONSISTS OF LOAMY MARINE DEPOSITS. DEPTH TO A ROOT RESTRICTIVE LAYER, FRAGIPAN, IS 12 TO 24 INCHES. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES IS VERY LOW. SHRINK-SWELL POTENTIAL IS LOW. THIS SOIL IS NOT FLOODED. IT IS NOT PONDED. A SEASONAL ZONE OF WATER SATURATION IS AT 24 INCHES DURING JANUARY, FEBRUARY, MARCH, APRIL, MAY, DECEMBER. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 2 PERCENT. NONIRRIGATED LAND CAPABILITY CLASSIFICATION IS 2e. THIS SOIL DOES NOT MEET HYDRIC CRITERIA.

CRITICAL AREAS
THE PROPOSED STORMWATER FILTER UNIT INSTALLATION MUST BE PROTECTED FROM SEDIMENT LADEN RUNOFF DURING CONSTRUCTION. REFER TO SHEET C2.0 FOR PROPOSED CONSTRUCTION PHASE PROTECTION MEASURES.

STORMWATER RUN-OFF CONSIDERATIONS
STORMWATER WILL BE CONVEYED TO THE SITES'S EXISTING DRAINAGE INLETS. THE 1-YEAR DESIGN STORM WILL BE TREATED VIA THE IN-LINE FILTER UNIT, WHILE HIGHER FLOWS WILL BYPASS THE TREATMENT FILTERS.

RSMP/VSMP CONSIDERATIONS
THE SITE DISTURBANCE FOR THIS PROJECT IS 0.04-AC. A RSMP PERMIT OR VSMP PERMIT WILL NOT BE REQUIRED. ALL WORK WILL TAKE PLACE OUTSIDE OF THE 100-YEAR FLOODPLAIN AND THE 50-FOOT STREAM BUFFER. PROPOSED LIMITS OF CONSTRUCTION/DISTURBANCE ARE BELOW THE 2,500 SQ.FT. THRESHOLD FOR THE CHESAPEAKE BAY LAND DISTURBANCE PERMIT.

PERMANENT STABILIZATION
REFER TO THE SITE LAYOUT PLAN, SHEET C3.0.

EROSION AND SEDIMENT CONTROL MEASURES & MAINTENANCE
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE BY LOCAL AUTHORITIES HAVING JURISDICTION.

STRUCTURAL PRACTICES

1. CONSTRUCTION ENTRANCE - 3.02
   A STONE PAD, LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE, TO REDUCE THE SOIL TRANSPORTED ONTO PUBLIC ROADS AND OTHER PAVED AREAS. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

2. SILT FENCE BARRIER - 3.05
   A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS, FILTER FABRIC AND, IN SOME CASES, A WIRE SUPPORT FENCE, PLACED ACROSS OR AT THE TOE OF A SLOPE OR IN A MINOR DRAINAGE WAY TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS OF LIMITED SIZE; APPLICABLE WHERE SHEET AND RILL EROSION OR SMALL CONCENTRATED FLOWS MAY BE A PROBLEM. MAXIMUM EFFECTIVE LIFE OF 6 MONTHS. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

3. STORM DRAIN INLET PROTECTION - 3.07
   THE INSTALLATION OF VARIOUS KINDS OF SEDIMENT TRAPPING MEASURES AROUND DROP INLETS OR CURB INLET STRUCTURES PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA; LIMITED TO DRAINAGE AREAS NOT EXCEEDING ONE ACRE, AND NOT INTENDED TO CONTROL LARGE, CONCENTRATED STORMWATER FLOWS. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, CONSTRUCT AND MAINTAIN ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9 VAC 25-840-40

ES-2: NOTIFY THE DEPARTMENT OF PUBLIC UTILITIES ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: PLACE ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR AS THE FIRST STEP IN CLEARING, GRADING, OR LAND DISTURBANCE.

ES-4: MAINTAIN A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFFSITE BORROW OR WASTE AREA), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: PROVIDE ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE DPU INSPECTOR.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND-DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, PUMP WATER INTO AN APPROVED FILTERING DEVICE.

ES-9: INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. MAKE ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES IMMEDIATELY.

EROSION & SEDIMENT CONTROL MINIMUM STANDARDS

A VESCP MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

MS-1: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

MS-4: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6: SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

MS-7: CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

MS-9: WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10: ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

MS-11: BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

EROSION & SEDIMENT CONTROL MINIMUM STANDARDS (CONTINUED)

MS-13: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14: ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15: THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

MS-16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

MS-17: WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

MS-18: ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

MS-19: PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:

A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION;
(2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
(1) IMPROVE THE CHANNELS TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS;
(2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.

D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.

F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.

M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (I) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-870-47 OR GRANDFATHERING IN 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT SHALL APPLY, OR (II) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 C 7 OF THE ACT.

N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBDIVISION 19.

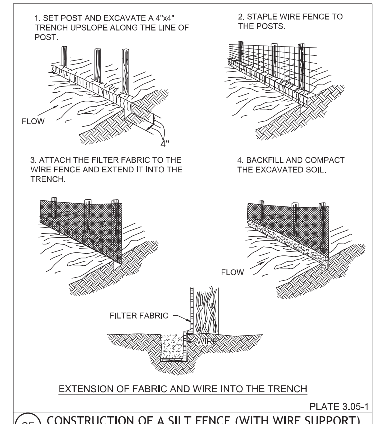
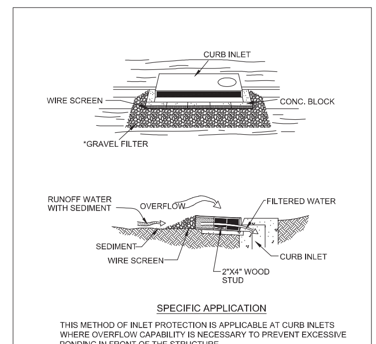


PLATE 3.05-1

SF CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)
No Scale

SILT FENCE NOTES
1. SILT FENCE AND FILTER FABRIC MUST BE ENTRENCHED.
2. POST FOR SILT FENCES SHALL BE EITHER 2.5 X 2 INCH DIAMETER WOOD OR 1.25 POUNDS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET.
3. POST SHALL BE SPACED A MAXIMUM OF 6 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MIN. OF 12 INCHES) WHEN EXTRA STRENGTH FABRIC IS USED.
4. STAPLE OR WIRE THE FILTER FABRIC DIRECTLY TO THE POST.
5. SEDIMENT MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
6. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
7. SILT FENCE SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.
*GRAVEL SHALL BE VDOT #3, #357, OR #5 COARSE AGGREGATE.

PLATE 3.07-3

IP BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER
No Scale

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER (seal) 6/29/2018

THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

DATE	REVISION DESCRIPTION

YOUR VISION ACHIEVED THROUGH OURS.

DATE 06/29/2018
DRAWN BY B. MEYER
DESIGNED BY B. MEYER
CHECKED BY A. CREEL
SCALE AS NOTED

TIMMONS GROUP

JSRCC - LOT L & M STORMWATER RETROFIT
1651 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA
EROSION & SEDIMENT CONTROL NOTES & DETAILS

JOB NO. 40785
SHEET NO. C2.1

TABLE 3.31-B
(REVISED JUNE 2003)
TEMPORARY SEEDING SPECIFICATIONS
QUICK REFERENCE FOR ALL REGIONS

SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME

- Apply 10-10-10 **fertilizer** at a rate of 450 lbs / acre (or 10 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons / acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
1. A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2. Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means.
3. When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.html#pubs

TABLE 3.32-E
(REVISED JUNE 2003)
PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

SEED[1]		
LAND USE	SPECIES	APPLICATION PER ACRE
MINIMUM CARE LAWN (COMMERCIAL OR RESIDENTIAL)	TALL FESCUE[1] or BERMUDAGRASS[1]	175 - 200 LBS. 75 LBS.
HIGH-MAINTENANCE LAWN	TALL FESCUE[1] or BERMUDAGRASS[1] (SEED) or BERMUDAGRASS[1] (BY OTHER VEGETATIVE ESTABLISHMENT METHOD, SEE STD. & SPEC. 3.34)	200-250 LBS. 40 LBS.(UNHULLED) 30 LBS. (HULLED)
GENERAL SLOPE (3:1 OR LESS)	TALL FESCUE[1] RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP[2]	128 LBS. 2 LBS. 20LBS. TOTAL: 150 LBS.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	TALL FESCUE[1] BERMUDAGRASS[1] RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP[2] SERICEA LESPEDEZA[3]	93 - 108 LBS. 0 - 15 LBS. 2 LBS. 20 LBS. 20 LBS. TOTAL: 150 LBS.

1 - WHEN SELECTING VARIETIES OF TURFGRASS, USE THE VIRGINIA CROP IMPROVEMENT ASSOCIATION (VCIA) RECOMMENDED TURFGRASS VARIETY LIST. QUALITY SEED WILL BEAR A LABEL INDICATING THAT THEY ARE APPROVED BY VCIA. A CURRENT TURFGRASS VARIETY LIST IS AVAILABLE AT THE LOCAL COUNTY EXTENSION OFFICE OR THROUGH VCIA AT 804-746-4884 OR AT HTTP://SUDAN.CSES.VT.EDU/HTML/TURF/TURF/PUBLICATIONS/PUBLICATIONS2.HTML

2 - USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
FEBRUARY, MARCH - APRIL .... ANNUAL RYE
MAY 1ST - AUGUST .... FOXTAIL MILLET
SEPTEMBER, OCTOBER - NOVEMBER 15TH ..... ANNUAL RYE
NOVEMBER 16TH - JANUARY .... WINTER RYE

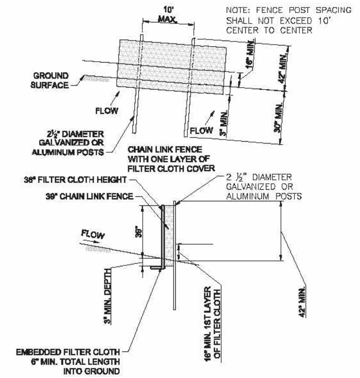
3 - MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER PERIODS, USE UNHULLED SEED. IF WEEPING LOVEGRASS IS USED, INCLUDE IN ANY SLOPE OR LOW MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS, INCREASE TO 30 - 40 LBS/ACRE.

FERTILIZER & LIME

- APPLY 10-20-10 FERTILIZER AT A RATE OF 500 LBS. / ACRE (OR 12 LBS. / 1,000 SQ. FT.)
- APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (90 LBS. / 1,000 SQ. FT.)

NOTE:
- A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF SITE.
- INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4 - 6 INCHES OF THE SOIL BY DISKING OR BY OTHER MEANS.
- WHEN APPLYING SLOWLY AVAILABLE NITROGEN, USE RATES AVAILABLE IN EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES AT HTTP://WWW.DCR.STATE.VA.US/SW/E&S.HTM#PUBS

DESIGN CRITERIA			
SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
0% - 10%	0 - 10:1	UNLIMITED	UNLIMITED
10% - 20%	10:1 - 5:1	200'	1,500'
20% - 33%	5:1 - 3:1	100'	1,000'
33% - 50%	3:1 - 2:1	100'	500'
+50%	+2:1	50'	250'



CONSTRUCTION SPECIFICATIONS:
FENCING SHALL BE 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST V.D.O.T. DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATIONS FOR A 6 FOOT FENCE SHALL BE USED, SUBSTITUTING 42 INCH FABRIC AND 6 FOOT LENGTH POSTS.

1. THE POLES DO NOT NEED TO SET IN CONCRETE.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 6" INTO THE GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SPLIT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
7. STONE REINFORCEMENT SHALL BE USED TO SUPPLEMENT SSF IN AREAS OF CONCENTRATED FLOWS.

SSF SUPER SILT FENCE
NO SCALE

COMMONWEALTH OF VIRGINIA — AMELIA C. MERRITT — Lic. No. 040825 — 6/29/2018 — PROFESSIONAL ENGINEER

THIS DRAWING PREPARED AT THE
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1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

DATE	REVISION DESCRIPTION

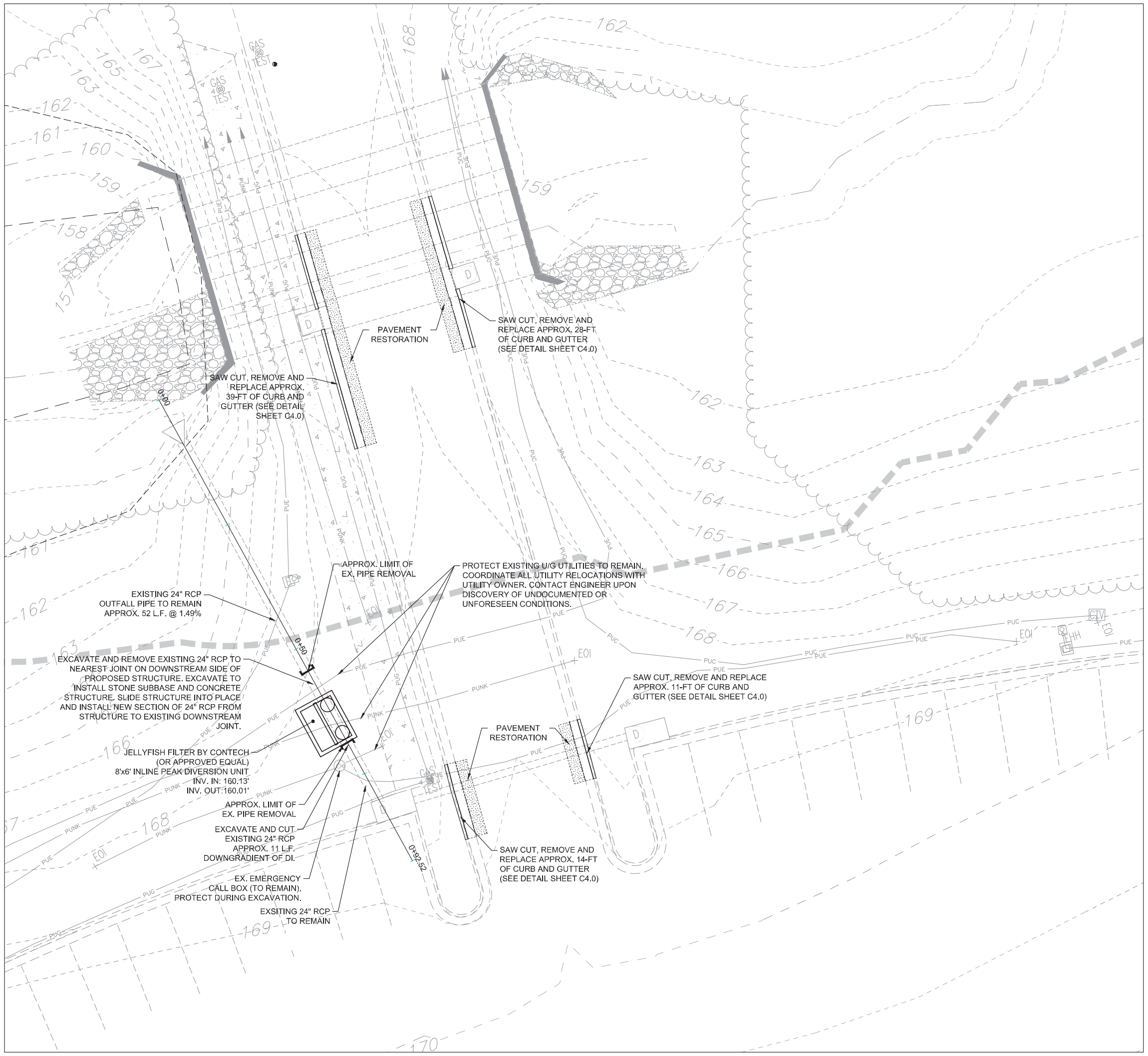
TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

DATE 06/29/2018
DRAWN BY B. MEYER
DESIGNED BY B. MEYER
CHECKED BY A. CREEL
SCALE AS NOTED

JSRCC - LOT L & M STORMWATER RETROFIT
1651 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA
EROSION & SEDIMENT CONTROL NOTES & DETAILS

JOB NO. 40785
SHEET NO. C2.2



SCALE 1"=10'

0 10' 20'

NAD 83

LEGEND

STORM SEWER MANHOLE	PAINTED UNDERGROUND CABLE TV (PUC)
GAS VALVE	PAINTED UNDERGROUND ELECTRICITY (PUE)
GAS TEST	PAINTED UNDERGROUND GAS (PUG)
LIGHT POLE	PAINTED UNDERGROUND UNKNOWN UTILITY (PUNK)
PAINTED UTILITY END OF INFORMATION	EXISTING STORM SEWER
CONTROL POINT	EX DROP INLET
ELECTRICAL BOX	EXISTING STORM SEWER MANHOLE
ELECTRICAL HAND HOLE	EXISTING CURB
FLARED END SECTION	CURB
CATV PEDESTAL	EXISTING CURB & GUTTER
EXISTING RIPRAP	CURB & GUTTER
EXISTING CONCRETE	EXISTING TREE LINE
PROP. PAVEMENT RESTORATION	EXISTING CONTOUR
	SAW CUT PAVEMENT
	EXISTING 50' STREAM BUFFER

NOTES:

1. INVERTS FOR PIPES AND STRUCTURES SHOWN HEREON ARE BASED ON FIELD MEASUREMENTS, HOWEVER THEY SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
2. PIPE SIZES, MATERIAL TYPE AND INVERT ELEVATIONS AS INDICATED ARE BASED UPON OBSERVATIONS MADE ABOVE GROUND. NO MEASUREMENTS HAVE BEEN PERFORMED BY PERSONNEL IN A CONFINED SPACE SITUATION.
3. UNDERGROUND UTILITIES WERE DESIGNATED (PAINTED) BY ACCUMARK ON 11-21-17. H & B SURVEYING AND MAPPING, LLC HAS FIELD LOCATED THE DESIGNATED LINES AS PAINTED AND IS NOT RESPONSIBLE FOR THE ACCURACY OF THE PAINT DESIGNATION WITH RESPECT TO THE EXISTING UTILITY. UTILITY INFORMATION ON THIS DRAWING WILL NEED TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION. INDIVIDUALS ARE REQUIRED BY VIRGINIA LAW TO CONTACT MISS UTILITY OF VIRGINIA AT 1-800-552-7001 (OR 811) 2 BUSINESS DAYS (48 HOURS) PRIOR TO CONSTRUCTION OR EXCAVATION ACTIVITIES.
4. THE CONTRACTOR IS ADVISED THAT SOIL TESTING OF THE PROPOSED EXCAVATION AREA REVEALED AN UNDETERMINED AMOUNT OF SOIL IMPACTED BY PETROLEUM. OFF-SITE EXPORT OF IMPACTED MATERIAL NOT TO BE RE-USED ON SITE MUST BE COORDINATED WITH THE RICO DISPOSAL FACILITY. ANTICIPATED VOLUME OF IMPACTED SOIL IS 15 CUBIC YARDS AND DISPOSAL OF SAID MATERIAL SHALL BE PAID FOR AT A UNIT PRICE BASED ON DISPOSAL TICKETS.
5. THE PROPOSED STORMWATER SYSTEM IMPROVEMENTS ARE LOCATED IN AN AREA CONTAINING MULTIPLE UNDERGROUND UTILITIES, AS SHOWN ON THE EXISTING CONDITIONS AND LAYOUT PLAN. IT IS ANTICIPATED THAT THE EMERGENCY CALL BOX IS TO REMAIN AND ANY UTILITIES CONNECTED TO THIS ITEM EITHER REMAIN IN PLACE OR BE RELOCATED DURING INSTALLATION OF THE RETROFIT UNIT AND ASSOCIATED EXCAVATION ACTIVITIES. CONTRACTOR TO CONTACT OWNER AND ENGINEER PRIOR TO RELOCATION OF ANY AND ALL UTILITIES.

COMMONWEALTH OF VIRGINIA
AMELIA C. WEHUNT
Lic. No. 049825
6/29/2019
PROFESSIONAL ENGINEER

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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION

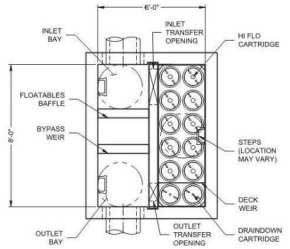
TIMMONS GROUP

JSRCC - LOT L & M STORMWATER RETROFIT

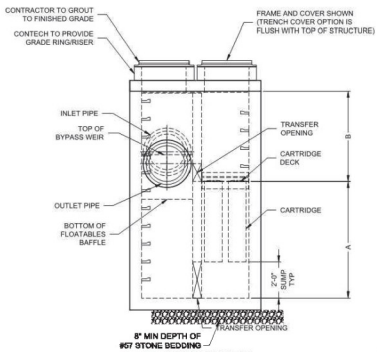
1651 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA

LAYOUT PLAN

DATE	06/29/2018
DRAWN BY	B. MEYER
DESIGNED BY	B. MEYER
CHECKED BY	A. CREEL
SCALE	1"=10'
JOB NO.	40785
SHEET NO.	C3.0



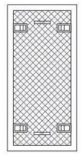
PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

JELLYFISH DESIGN NOTES				
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD				
CARTRIDGE SELECTION				
CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-0"	3'-3"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	1.96	1.47	0.98	0.54
DECK TO INSIDE TOP (MIN) (B)	5.00	4.00	4.00	4.00

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
(LENGTH VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS						
STRUCTURE ID						*
WATER QUALITY FLOW RATE (cfs)						*
PEAK FLOW RATE (cfs)						*
RETURN PERIOD OF PEAK FLOW (yrs)						*
# OF CARTRIDGES REQUIRED (HF / DD)						*
CARTRIDGE LENGTH						*
PIPE DATA:	I.E.	MATL	DIA	SLOPE %	HGL	
INLET #1	*	*	*	*	*	
INLET #2	*	*	*	*	*	
OUTLET	*	*	*	*	*	
SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.						
RIM ELEVATION						*
ANTI-FLOTATION BALLAST		WIDTH		HEIGHT		
		*		*		
NOTES/SPECIAL REQUIREMENTS:						
* PER ENGINEER OF RECORD						

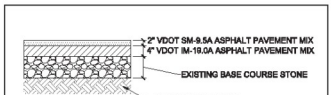
GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Jellyfish* Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENT NO. 8,287,726; 8,221,618; US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

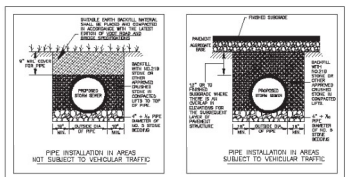
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

JELLYFISH JFPD0806
STANDARD DETAIL
PEAK DIVERSION CONFIGURATION

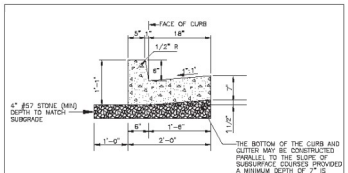


PAVEMENT RESTORATION
NO SCALE

NOTES:
1. SECTION IS NOT BASED ON FIELD GEOTECHNICAL STUDY OR REPORT.
2. CONTACT ENGINEER IF FIELD CONDITIONS DICTATE ALTERNATE PAVEMENT SECTION.



PIPE BEDDING & BACKFILL
(For New Development & New Road Construction)
County of Henrico
Department of Public Works
REVISED 6/1/04
JANUARY 1, 2002
PIPE-INSTALLING



CONCRETE SHALL BE CLASS A-3

CURB AND GUTTER
County of Henrico
Department of Public Works
JANUARY 1, 2002
HSCB.DWG

CONSTRUCTION NOTES

1. CONSTRUCT THIS PROJECT IN ACCORDANCE WITH THE MOST RECENT VDOT ROAD AND BRIDGE SPECIFICATIONS AND DESIGN STANDARDS INCLUDING ALL SUBSEQUENT REVISIONS. RESTORE ANY INFRASTRUCTURE (SIDEWALKS, CURBS, ETC.) DAMAGED DURING CONSTRUCTION AT THE EXPENSE OF THE CONTRACTOR.
2. ACQUIRE AND PAY FOR ANY AND ALL NECESSARY CONSTRUCTION PERMITS, AND FURNISH COPIES TO THE OWNER UNLESS OTHERWISE DIRECTED.

CONSTRUCTION SEQUENCE GUIDELINES

1. PROVIDE A DETAILED SCHEDULE AND SEQUENCE OF CONSTRUCTION TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION. CONSTRUCTION SEQUENCE GUIDELINES HAVE BEEN PROVIDED BELOW TO PROVIDE REQUIRED OPERATIONAL PARAMETERS DURING CONSTRUCTION.
2. ACQUIRE ALL PERMITS PRIOR TO CONSTRUCTION. ALL FEES ASSOCIATED WITH PERMITS SHALL BE PAID BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
3. SCHEDULE A PRE-CONSTRUCTION MEETING WITH JSRCC STAFF AND TIMMONS GROUP AT LEAST 72 HOURS PRIOR TO THE START OF WORK.
4. CALL "MISS UTILITY" AT 1-800-552-7001 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. CONTACT THE ENGINEER IMMEDIATELY IF:
   4.1. LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN;
   4.2. IF THERE APPEARS TO BE A CONFLICT;
   4.3. OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS.
5. PERFORM CONSTRUCTION SURVEY STAKEOUT FOR PROPOSED IMPROVEMENTS AND CONSTRUCTION LIMITS. ALL SURVEYING OPERATIONS MUST BE PERFORMED BY A VIRGINIA LICENSED SURVEYOR.
6. MAINTAIN UNINTERRUPTED UTILITY SERVICE TO ALL CAMPUS FACILITIES AT ALL TIMES DURING CONSTRUCTION.
7. INSTALL EROSION & SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE VA EROSION AND SEDIMENT CONTROL HANDBOOK BEFORE COMMENCING ANY LAND DISTURBING ACTIVITIES.
8. DEMOLISH ITEMS, CLEAR AND GRUB EXISTING VEGETATION AS REQUIRED TO CONSTRUCT IMPROVEMENTS SHOWN ON SHEET C3.0.
9. INSTALL PROPOSED CONTECH JELLYFISH (OR APPROVED EQUAL) STORMWATER FILTER UNIT IN ACCORDANCE WITH MANUFACTURER INSTALLATION GUIDELINES.
10. SAW CUT, REMOVE AND REPLACE EXISTING SECTIONS OF CURB AND GUTTER IDENTIFIED ON SHEET C3.0. RESTORE PAVEMENT PER DETAIL.
11. MAINTAIN ALL EROSION CONTROL DEVICES DURING CONSTRUCTION AND REMOVE ONCE THE DISTURBED AREAS HAVE BEEN STABILIZED AND RELEASED BY THE COUNTY INSPECTOR.

THIS DRAWING PREPARED AT THE COMMONWEALTH OF VIRGINIA
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1015 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

DATE 06/29/2018
DRAWN BY B. MEYER
DESIGNED BY B. MEYER
CHECKED BY A. CREEL
SCALE AS NOTED

TIMMONS GROUP

JSRCC - LOT L & M STORMWATER RETROFIT
1651 EAST PARHAM ROAD, HENRICO COUNTY, VIRGINIA
CONSTRUCTION NOTES & DETAILS

JOB NO. 40785
SHEET NO. C4.0

Appendix D: MOU with Henrico – JSRCC Parham Road Campus Stream Restoration Project

MEMORANDUM OF UNDERSTANDING
JSRCC Parham Road Campus Stream Restoration Project

Date: January 27, 2022

MS4 Stream Restoration Partnership between J. Sargeant Reynolds Community College and Henrico County: The Federal Environmental Protection Agency ("EPA") and Virginia Department of Environmental Quality ("DEQ") mandate that J. Sargeant Reynolds Community College (the "College") reduce total phosphorous ("TP"), total nitrogen ("TN"), and total suspended solids (TSS) from runoff resulting from weather events at its Parham Road campus. By 2028, the College will be required to provide reductions from baseline loadings from the campus by 32 pounds of TN, 7.8 pounds of TP, and 3,536 pounds of TSS so they do not enter the waterways.

Henrico County (the "County") and the College have agreed to restore a stream that runs through the Parham Road campus. The parties will share the stormwater credits generated from the project. The College has paid for the preliminary design of the stream restoration and the initial post-construction as-built survey of the work. Henrico County will pay for the final design and construction work and will receive a permanent easement to the project area to allow the County to provide the required regular maintenance of the project in perpetuity.

The civil engineer who designed the stream restoration has estimated the completed stream restoration will capture approximately 32 pounds of TP, 147 pounds of TN, and 11,000 pounds of TSS. The final determination of stormwater credits will be calculated after the project is completed and will be submitted to DEQ. Of the approved total, the College will receive 10 pounds/year of TP reduction credits, 35 pounds of TN reduction credits, and 3,600 pounds of TSS reduction credits to meet its EPA & DEQ requirements, and the County will receive the remaining balance of the credits.

Parties: J. Sargeant Reynolds Community College, hereinafter referred to as the "College" and the County of Henrico, Virginia, hereinafter referred to as the "County."

Subject: The Commonwealth of Virginia, State Board for Community Colleges, which is the landowner of GPIN 779-756-2504, agrees to convey an easement (approximately 1.2 acres in size) to the County for the purpose of perpetually maintaining a stream restoration project, hereinafter also referred to as "WR Project", on its property. The proposed location of the WR Project and the easement area are depicted on Exhibit A, attached. The College will grant the County the right to enter State land to plan, design, construct, and develop the WR Project. The form of deed of easement will be substantially similar to the Deed of Easement attached hereto as Exhibit B. The form of right of entry letter will be substantially similar to the letter attached hereto as Exhibit C.

Background: The College and the County have agreed to collaborate on the WR Project, located along a stream that runs through the Parham Road Campus of the College located at 1651 East Parham Road, Richmond, VA. The work includes clearing, grubbing, excavating, installing stream structures, seeding, and planting. The WR Project will result in reductions of TN, TP and

TSS and will earn environmental credits from the Virginia Department of Environmental Quality for stormwater runoff. The College and the County will share the pollutant removal credits as described above.

According to the Preliminary Stream Restoration Plan dated December 4, 2019 and revised on December 1, 2020, by Timmons Group, the WR Project is to design and construct a restored channel of approximately 500 linear feet from the east property line to the culvert at the road that connects the campus parking lots. The WR Project will restore approximately 500 linear feet of an unnamed tributary to North Run. The WR Project will improve the water quality of the stream and will satisfy a portion of both the College's and the County's Municipal Separate Storm Sewer System ("MS4") Permit requirements.

The WR Project will utilize natural stream design to: (i) recreate a more natural and stable cross section and profile of this stream system; (ii) stabilize the severely eroding stream banks and stream bottom; and (iii) reconnect the stream with its floodplain.

Role of the College: Landowner

Role of the County: To undertake and complete construction of the WR Project and maintain the stream improvements into perpetuity at no cost to the College.

Responsibilities of the College:
To procure and fund a Preliminary Stream Restoration Plan which was completed on December 4, 2019, by Timmons Group, and the College has paid Timmons Group for the work.

To share with the County the MS4 Permit credits as described above.

To grant an easement to the County to perpetually maintain the stream restoration and WR Project. The form of the deed of easement will be substantially similar to the Deed of Easement attached hereto as Exhibit B, which will contain the following provisions required by the County: (i) a statement that the property owner will not alter the project; (ii) the document must be recorded at the Clerk's Office of the Circuit Court of Henrico County, Virginia; (iii) the rights conveyed by the document must run with the land; and (iv) a graphic showing the location of the subject area. An as-built easement plat will be appended to and recorded with the Deed of Easement as Exhibit A, the legal description of the easement area.

To procure and approve the as-built easement plat.

Responsibilities of the County: To procure and fund the final design of the WR Project and to conduct and complete construction of the WR Project and perpetually maintain the stream improvements under the provisions of a Deed of Easement from the landowner at no cost to the College.

[The remainder of the page is left blank. Signature pages follow.]

IN WITNESS WHEREOF, the Parties hereto have set their hands and affixed their respective seals the day and year first above written.

J. SARGEANT REYNOLDS COMMUNITY COLLEGE

By: _____
Name: Paula P. Pando
Title: President
Date: 2/10/2022

HENRICO COUNTY, VIRGINIA

By: _____
Name: John A. Vithoulkas
Title: County Manager
Date: 1/27/2022

Approved as to form:

For J. SARGEANT REYNOLDS COMMUNITY COLLEGE

Office of the Attorney General

By: _____
Senior Assistant Attorney General

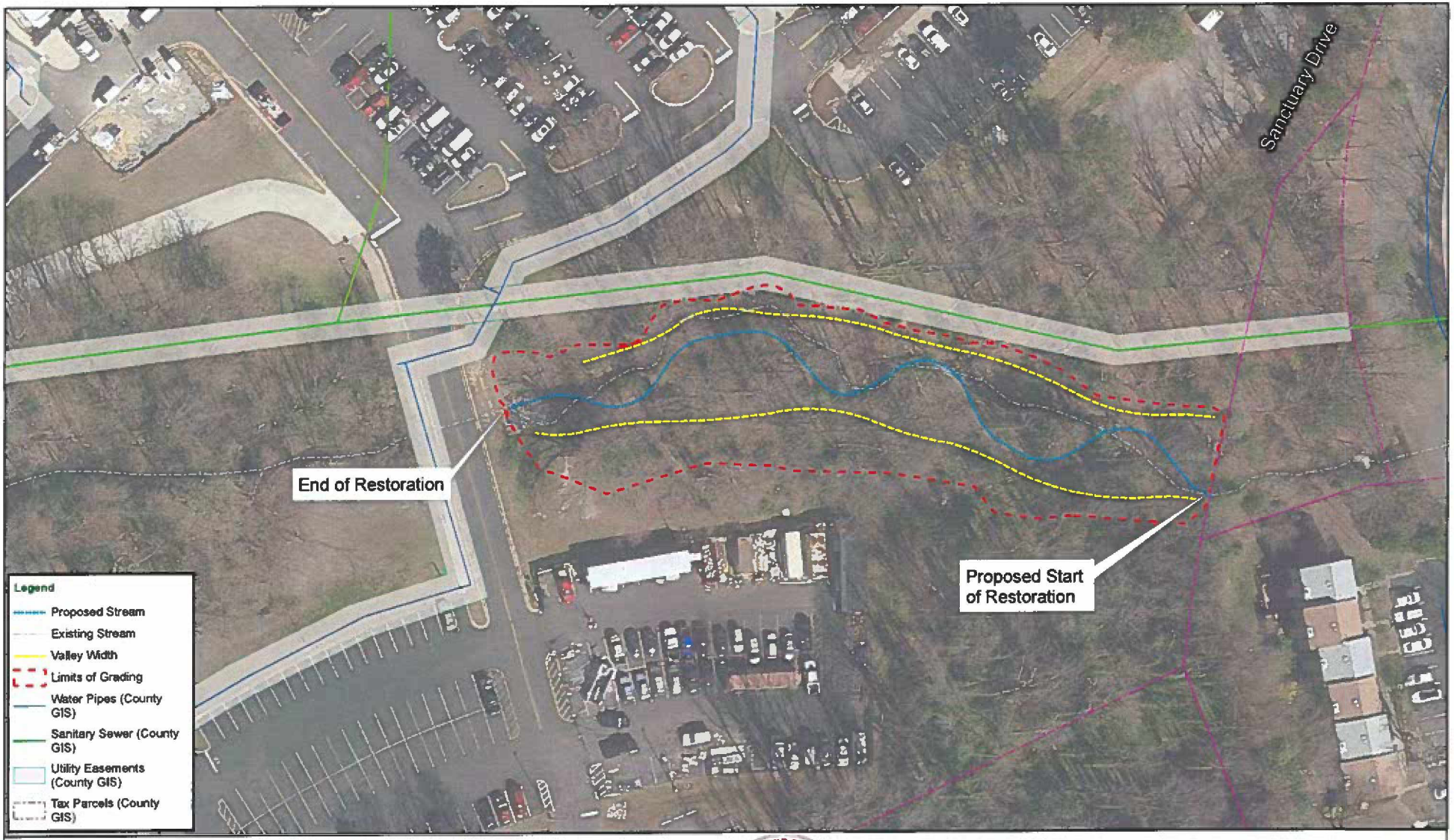
Approved as to form:

For HENRICO COUNTY, VIRGINIA

By: Denise M Letendre
Name/Title Denise Letendre, Assistant County Attorney

Exhibit A to MOU

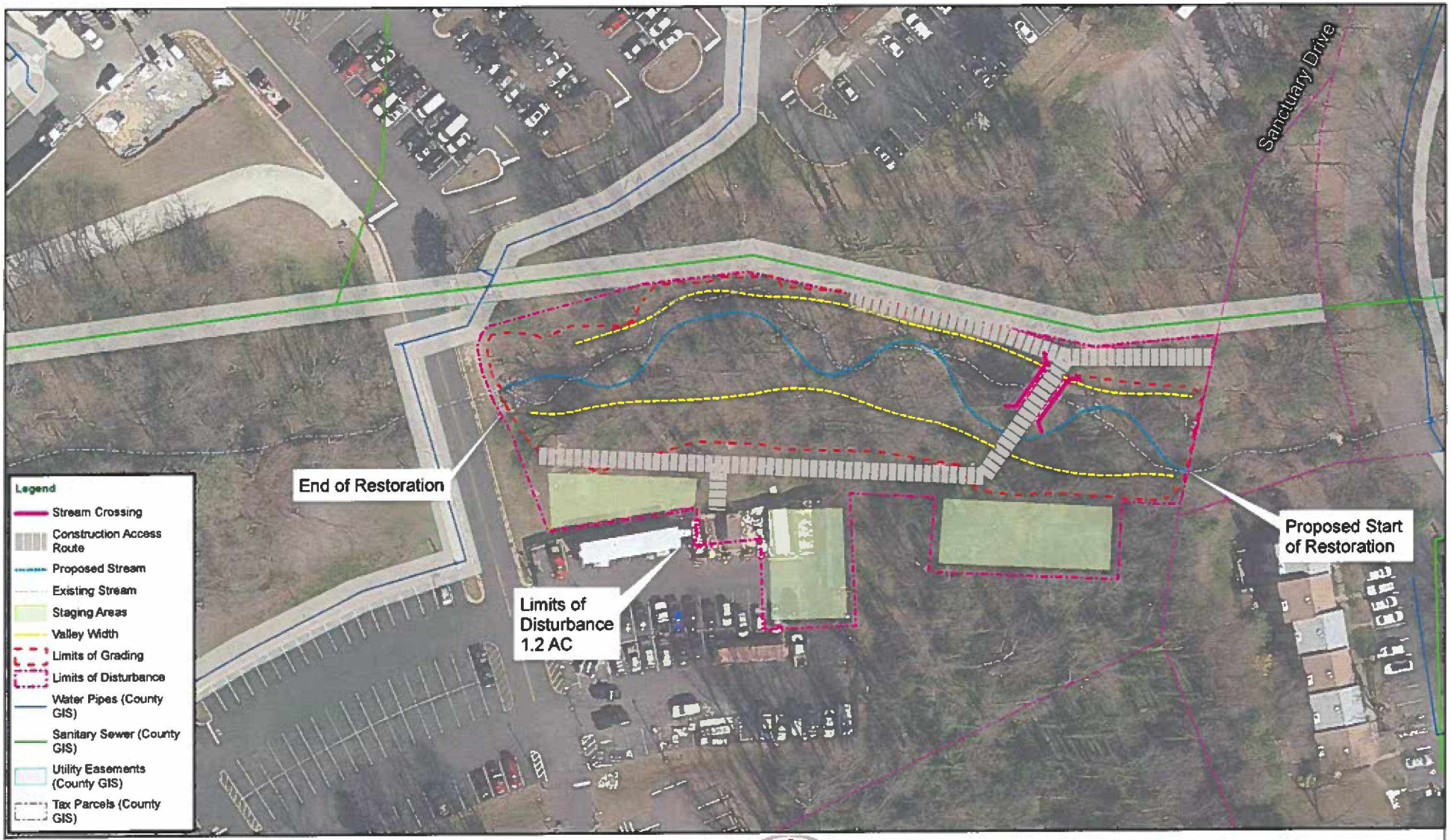
Proposed Locations of the WR Project and Easement Area
(two pages)



J. SARGEANT REYNOLDS COMMUNITY COLLEGE
UT TO NORTH RUN STREAM RESTORATION
CONCEPTUAL GRADING LIMITS

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS
WWW.TIMMONS.COM

0 85 170 Feet



J. SARGEANT REYNOLDS COMMUNITY COLLEGE
UT TO NORTH RUN STREAM RESTORATION
CONCEPTUAL SITE LIMITS

J. SARGEANT REYNOLDS COMMUNITY COLLEGE 1972

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS
WWW.TIMMONS.COM

0 87.5 175 Feet

Exhibit B to MOU

Proposed Form of Deed of Easement

Easement – Benefits Others
GPIN 779-756-2504
VCCS Project Code NP 283-019
BRES Tract S-000333

This Deed of Easement was prepared by:
Thomas S. Cantone, Senior Assistant Attorney General
Virginia Community College System
300 Arboretum Place
Richmond VA 23236

This Deed is exempt from recordation taxes and fees pursuant to §§ 58.1-811.C.4.; 17.1-266; and 17.1-279 E of the Code of Virginia (1950) as amended and the Constitution of Virginia, Article X, Section 6 (a) (1).

DEED OF EASEMENT

This DEED OF EASEMENT is dated the _____ day of _____, 2022, by and between the COMMONWEALTH OF VIRGINIA, J. SARGEANT REYNOLDS COMMUNITY COLLEGE, ON BEHALF OF THE STATE BOARD FOR COMMUNITY COLLEGES, hereinafter called "Grantor," and COUNTY OF HENRICO. VIRGINIA, hereinafter called "Grantee," whose address is 4301 E. Parham Rd., Henrico VA 23228.

WITNESSETH

That for the sum of One Dollar ($1.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and in accordance with Sections 2.2-1150, 2.2-1151, and 23.1-1002 of the Code of Virginia (1950), as amended, Grantor grants unto Grantee, its successors and assigns, the perpetual right, privilege, and easement of right-of-way, variable feet in width, to lay, erect, construct, operate, maintain and repair a stream restoration project (the "Project") and all equipment, accessories and appurtenances necessary in connection therewith, hereinafter called "Facilities," for the purpose of stream restoration, over, under, upon and across the lands of Grantor situated in the County of Henrico, Virginia, said right-of-way being shown on a plat dated _____, entitled "_____," prepared by Timmons Group, which plat is attached hereto as Exhibit A and made a part of this Deed of Easement; being part of that same real estate acquired by Grantor by deed dated February 8, 1972, recorded in the Clerk's Office, Circuit Court of Henrico County, Virginia in Deed Book 1598 Page 768.

This easement is subject to all existing easements, rights-of-way, covenants, encumbrances and restrictions of record, and is further subject to the following conditions:

A. The real property shall remain at all times the Grantor's regardless of any stream restoration work. Grantee shall be required to inspect, perpetually maintain, and, as needed, to rebuild, remove, repair, improve, and make such changes, alterations, additions to or extensions of stream restoration work within the boundaries of said right-

of-way. All construction, maintenance, equipment and facilities shall comply with all applicable laws, ordinances, codes and regulations. With respect to all such work hereunder, prior to commencing work in the easement area, Grantee shall use commercially reasonable efforts to notify the Grantor that such work will be commencing.

B. Upon completion of any activity by Grantee upon the right-of-way, Grantee shall replace equipment and facilities of Grantor, remove trash and debris, and remove any of Grantee's equipment, accessories or appurtenances not consistent with the construction, maintenance, or operation of said Facilities or the exercise of any rights or privileges expressed herein. Grantee shall maintain said right-of-way and Facilities in such repair as not to endanger or otherwise limit the enjoyment or use of Grantor's property and adjacent properties.

C. Grantee shall have the right to trim, cut and remove trees, shrubbery or other natural obstructions on, under or over the right-of-way which interfere with or threaten the efficient and safe operation, construction or maintenance of said Facilities. All trees cut by Grantee shall remain the property of Grantor. All brush, branches, and other debris resulting from any cutting, trimming, or clearing of said right-of-way shall be removed from lands of Grantor and disposed by Grantee.

D. Grantee shall have the right of ingress to and egress from said right-of-way over the lands of Grantor as may be necessary to exercise Grantee's rights herein. Grantee shall exercise such right in such manner as shall not occasion injury or inconvenience to Grantor. Grantee shall at Grantor's election pay for or repair any injury to any of Grantor's land, structures, roads, fences, and other improvements caused by Grantee, its employees, agents or contractors. Grantee shall notify Grantor immediately of any such injury and shall make said payment or repair within thirty (30) days after such election by Grantor; provided, however, that if such injury results in an on-going hazardous condition or a material loss of use of Grantor's property (such as, by way of illustration and not by limitation, a disruption of any utilities or loss of access to Grantor's property) then Grantee shall immediately remedy the hazardous condition or material loss of use.

E. Grantor, its successors and assigns, may use said right-of-way for any purpose not inconsistent with the rights hereby granted, provided such use does not interfere with the safe and efficient construction, operation or maintenance of the Facilities or the Project and further provided that such use is not inconsistent with any laws, ordinances or codes pertaining to the construction, operation or maintenance of said facilities and to which Grantor is subject. Due to the purpose of the Project, Grantor shall not mow, cut, or maintain the easement area, nor alter the Facilities or Project in any way, without coordination with and mutual approval of both the Grantee and the Grantor.

F. Grantee covenants and agrees to indemnify, defend and hold Grantor, its employees and agents, harmless from and against any claims of injury to any persons or property and from and against any other liability of any nature whatsoever to the full extent authorized by Virginia law resulting from the installation, operation, maintenance, replacement, repair, removal or use of any of Grantee's Facilities or the connection to other utility

facilities on or adjacent to said easement, or in any way arising out of Grantee's exercise of any rights herein granted.

G. If Grantee at any time discontinues use or maintenance of all or any portion of the easement herein conveyed, all of Grantee's rights and interest in said easement or portion thereof shall immediately terminate and revert to Grantor, its successors and assigns, and on written request by Grantor, Grantee shall quitclaim and release same.

[The remainder of the page is left blank. Signature pages follow.]

WITNESS the following signatures and seals.

Grantor: COMMONWEALTH OF VIRGINIA,
J. SARGEANT REYNOLDS COMMUNITY COLLEGE
ON BEHALF OF THE STATE BOARD FOR
COMMUNITY COLLEGES

By: _____
Robert B. Jones, Associate Vice Chancellor
for Facilities Management Services, VCCS
Chancellor's designee

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to wit:

The foregoing Deed of Easement was acknowledged before me this ___day of _____, 2022, by Robert B. Jones acting in his capacity as Chancellor's designee, VCCS Associate Vice Chancellor for Facilities Management Services.

My commission expires: _____
My registration number: _____

_____
Notary Public

Grantee: HENRICO COUNTY, VIRGINIA

By: _____
Name _____
Title _____

COMMONWEALTH of VIRGINIA
CITY / COUNTY _____, to-wit:

The foregoing Deed of Easement was acknowledged before me this _____ day of _____, 2022, by _____, as _____ of _____, on behalf of the County.

My commission expires: _____
My registration number: _____

_____
Notary Public

EXHIBIT A

(Plat)

Exhibit C to MOU

Proposed Form of Right of Entry

[Date]

John Newton
Capital Project Manager
Henrico County Department of Public Works
Engineering and Environmental Services Division
4301 E. Parham Rd.
Henrico VA 23228

By electronic mail to john.newton@henrico.us

RE: J. Sargeant Reynolds Community College
Parham Road Campus
Stream Restoration Project
Project Code: NP 283-019
Right of Way #_____
Henrico County GPIN 779-756-2504

Dear Mr. Newton:

Permission is hereby granted by the Virginia Community College System, for itself, the State Board for Community Colleges and J. Sargeant Reynolds Community College (collectively, "VCCS") to Henrico County, Virginia ("County"), and its agents, contractors, and subcontractors, to coordinate with and notify the VCCS and enter upon those portions of land of the Commonwealth of Virginia located at 1651 E. Parham Road, in Henrico County, Virginia, as more particularly described as and shown on the attached Exhibit A (the "VCCS Property"), to proceed with the Stream Restoration Project (the "Project") to be located on the VCCS Property (see Description of Project attached as Exhibit B).

In granting this permission, it is our understanding that the work described above shall be performed at no cost to the VCCS or J. Sargeant Reynolds Community College. To the extent that there are costs for document preparation and review by the County, its employees or contractors, including, for instance, costs borne by outside consultants, contractors and counsel, those costs shall be borne by the County. We further understand that VCCS and the County contemplate that the Project will ultimately involve a recorded deed of easement granting the County certain rights to the VCCS Property and requiring the County to perpetually maintain the Project.

This grant is made only to the extent reasonably necessary for the County to enter the VCCS Property and adjacent sites for purposes of planning, design, construction, development, and maintenance of the Project.

Specifically, it is understood and agreed that this permission is granted subject to the following conditions:

1. This Right of Entry is granted solely to plan, design, construct, develop, and maintain the Project. The permission granted hereunder is granted only to the extent reasonably necessary for the County, and / or its agents, contractors, and subcontractors to perform the Project work, as described in Exhibit B. The County shall coordinate work and entry onto the VCCS Property with Amelia Bradshaw at J. Sargeant Reynolds Community College (tel. no. (804)-523-5132/5834) or her successor or designee, and will advise her in advance of the schedule for the Project. Physical access, if otherwise not available, shall be provided by VCCS or J. Sargeant Reynolds Community College employees, who may remain present during all work performed hereunder. In addition, the County agrees to repair any and all damage to the VCCS Property, including structures, roads, sidewalks, fences, and other improvements, which damage was caused by the work performed pursuant to this letter, and after completion of the work, the County shall return the VCCS Property to substantially the same condition that it was in prior to such work.

2. The permission granted by this Right of Entry shall be temporary in nature and shall terminate upon the earlier of: i) the completion of the Project; ii) the recordation of a Deed of Easement consummating the proposed formal permanent easement between the VCCS and the County; or (iii) the Contract Completion Date for the Project. The Right of Entry granted hereunder shall extend to the County and its agents, employees and contractors, but only to the extent reasonably necessary to carry out the Project. Acquisition of any permits required by the County, the Commonwealth of Virginia or any other entity shall be the responsibility of the County.

3. The County agrees, to the extent permitted by law, to indemnify, protect and hold harmless the VCCS, its employees and officers, successors and assigns from and against any and all costs, liability, suits, expenses, claims, demands and actions in respect to such loss, injury or damages caused by or growing out of this letter, saving and excepting such costs, liability, suits, expenses, claims, demands and/or actions as were caused by the gross negligence or willful misconduct of the VCCS.

4. In connection with the Right of Entry granted by this letter, the County has and shall cause its contractors to keep in force at its own expense, as long as this Right of Entry remains in effect, a broad form liability insurance policy in the amount of One Million Dollars ($1,000,000) per occurrence, protecting the Virginia Community College System, the Commonwealth of Virginia, State Board for Community Colleges, and J. Sargeant Reynolds Community College against all claims for damage to person or property or loss of life or property occurring on or about the VCCS Property. The County shall furnish the VCCS with insurance certificates of such contractor's insurance policy and the County's insurance policy at least fifteen (15) days prior to beginning work on VCCS Property.

The VCCS reserves the right to terminate this Right of Entry upon ten (10) days' prior written notice to the County if the County is unwilling or unable within a reasonable period of time to cure any breach of the terms set forth in this letter to the satisfaction of the VCCS.

Please sign in the space below to acknowledge acceptance of the terms of this letter, and return a countersigned original to me.

Sincerely yours,

VIRGINIA COMMUNITY COLLEGE SYSTEM

_____

Robert B. Jones, RA, CBO, VCCO
Associate Vice Chancellor
Facilities Management Services

Agreed to and acknowledged this ___ day of _____, 2022

COUNTY:

Henrico County, Virginia

By: _____
Name: _____
Title: _____

copy: Amelia M. Bradshaw - Vice President, JSRCC
Monica Melville – VCCS
Thomas Cantone - OAG

EXHIBIT A

Location of Proposed Installation
(two pages)

EXHIBIT B

Description of Project

The work includes clearing, grubbing, excavating, installing stream structures, seeding, and planting.

Appendix E: DEQ Nutrient Credit Acquisition Form

MS4 Nutrient Credit Acquisition Form

Pursuant to Code of Virginia sections § 62.1-44.19:21.A and Part II.A.10 of the General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, the below named Permittees hereby certify that credits have been transferred between their two facilities as outlined below in full or partial satisfaction of compliance obligations:

Facility generating credits: Hidden River Farm, LLC (Facility Name) VAN _____ (Registration No.)

Facility acquiring credits: J. Sargeant Reynolds Community College (Facility Name) VAR 040107 (Registration No.)

Credits Transferred

Compliance Year: 2023

Delivered Total Nitrogen Credits : 77.91 lbs

Delivered Total Phosphorus Credits : 6.29 lbs

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

Facility generating credits:

Principal Executive Officer or Authorized Agent:

Robert McCellus
Typed or Printed Name

Signature

8043702299
Area Code/Phone Number

1/18/24
Date

Facility acquiring credits:

Principal Executive Officer or Authorized Agent:

Matthew E. Thompson, Jr.
Type or Printed Name

Signature

804.523.5795
Area Code/Phone Number

1/5/2024
Date

MS4-NCAFv1
9/5/2018